



Commonwealth of The Bahamas

Ministry of Education

Primary School Mathematics Curriculum Guidelines

Grades: 1-3

**Department of Education
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Message from Acting Assistant Director of Education (Science and Technology Section)

What helps students to develop a Mathematical outlook, is the processes to which they are exposed in the classroom. Mathematics, therefore, should not be merely a study of finite answers but rather an application of processes that aid in discovering and learning about the relationship between numbers and the world in which we live.

If our education system is to keep pace with scientific advancement, our students must be exposed to an effective and comprehensive mathematics education programme which presents opportunities for them to become actively involved and at the same time obtain the requisite knowledge, skills and attitudes necessary to compete both locally and globally in a scientific and technological society.

For this to be realized, the development and implementation of model mathematics curricula, strengthening the capacity of teachers and providing adequate science instructional supplies and facilities are paramount.

Mathematics teachers are therefore challenged to inspire, stimulate divergent thinking and provide the means for students to investigate based on what they know as well as what they wish to discover.

With each of us giving of and performing at our best, our students should be able to achieve our goal, which is, to develop competent citizens to provide an efficient and effective workforce needed to advance mathematics careers and professions so as to improve the quality of life for all.

Mr. Hamblin Newbold
Acting Assistant Director of Education
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PHILOSOPHY

Mathematics is a vital component in the development of science, technology, industry, commerce, the day to day living in society/world and is essential to the quality of life of our people.

Mathematics requires thinking, reasoning, and understanding of principles, thoughts, ideas, and patterns in our environment. Therefore, emphasis should be placed in the development of mathematical concepts. Its specific focus is to prepare students to explore, discuss, develop, test, and apply mathematical concepts in the further growth and development of society.

OVERARCHING GOAL

Students will develop self-confidence and display proficiency in logical, critical and analytical reasoning as well as become proficient in the use of technology and other mathematical tools. They will also demonstrate mastery of problem solving, communicating mathematically, working cooperatively, and learning to value mathematics while incorporating classroom experiences with real life situations.

SUB-GOALS

The Mathematics programme, as outlined in the curriculum guidelines, requires that all students in The Bahamas achieve the following:

1. Demonstrate and apply knowledge and sense of numbers, including numeration, patterns, ratios, and proportions.
2. Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.
3. Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division and multiplication.
4. Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.
5. Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.
6. Collect, organize, and analyze data using statistical methods: predict results; and interpret uncertainty-using concepts of probability.

To achieve these sub-goals, all students must have many and varied experiences, through which they read, write, discuss, make conjecture, and test solutions to complex, practical problems.

This curriculum document is intended to foster an understanding of the “whys” of Mathematics as well as appropriately meet the current and future needs of the student population in schools across The Bahamas.

The use of current research in Mathematics and a working knowledge of entry requirements for programmes at The College of The Bahamas and Colleges in the United States, Canada, Great Britain and the University of the West Indies as well as adherence to our own goals, constituted the basis used by curriculum developers to formulate the objectives/content of this document.

It is our intention that teachers and parents use this document to guide their teaching of Mathematics, supplementing it with activities from texts and other resources to help our students attain the goals that are outlined in this document.

MATHEMATICAL EXPECTATIONS GRADES 1-12 A DISCUSSION

In order to understand the expectations of the mathematics curriculum more fully, the curriculum writing team offers the following mathematics processing standards to consider as you strive to reach these goals with your students/children.

1. **Students will become mathematical problem solvers.** Every Mathematics lesson should have some element of problem solving to challenge the students. There are two main types of problems: routine and non-routine. Routine problems are usually application problems and can be solved by applying an operation of a formula. We teach children to reason and think critically with these problems when we work on reading for understanding. Teaching key words such as **‘altogether means to add,’ does not lead to understanding and is an inappropriate problem solving technique.** Asking students to draw a picture of what is happening in the story helps students make connections to the concept of the operations and involves reasoning. Have students apply developing problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding.

Non-routine problems tend to be more open-ended, may have more than one answer or solution and usually require a strategy to solve the problem. These problems require reasoning and not simply application of operations. A teacher with a well-balanced mathematics programme uses a combination of problems with his/her students.

2. **Students will be able to communicate mathematically.** In order for students to achieve this goal, they must be encouraged daily to communicate in class through small and large group discussions and writing. Oral and written presentations, creating their own story problems and **explaining HOW they arrived at solutions** are ideal ways to achieve this goal and are methods supported through the activities in this curriculum/resource guide.
3. **Students will develop self-confidence with Mathematics.** In order to develop self-confidence, students and teachers need to have success in Mathematics. Build on your students’ previous experiences and draw on your own.
4. **Students will learn to value Mathematics.** Students will achieve this goal over time if they see the enthusiasm for the subject. School-wide projects such as Math Day or “One Hundred Day” celebrations in primary schools and “Invention Day” in the high schools or national projects like Math at the Mall that will assist in developing this goal. Speakers with jobs that use Mathematics (which is most careers) are also helpful. Finding examples of Mathematics used properly or improperly on TV and in the newspapers is another worthwhile connection.
5. **Students will be able to make connections within the field of Mathematics, and with Mathematics in the real world.** Students should understand Mathematics as a necessary set of skills and concepts for the real world; therefore, teachers are encouraged to integrate Mathematics teaching with other subjects. Also when working with one strand, use skills from other strands. For example, **Statistics and Number Sense blend well together.**

6. **Students will learn to work cooperatively.** Most jobs that require a mathematical background are those where people must collaborate. Therefore, the activities in the curriculum support peer tutoring, cooperative learning, pairing of students, group projects, group presentations and activities in which each student in the class participates.
7. **Students will become more proficient in the use of technology and other mathematical tools.** While calculator and computers are the primary pieces of technology used in Mathematics, students should also learn how to use the rulers, compasses, protractors and other tools. In addition, students also need to learn which tool is appropriate for a given situation. These learning tools allow students to investigate mathematical ideas and to solve problems.

HOW TO USE THIS GUIDE

Mathematics is a highly interconnected and cumulative subject. The Mathematics curriculum introduces skills and concepts in sequence, which contribute to and serve as building blocks for each other across grade levels. The curriculum also gives focus to important mathematics strands that will prepare students for continued study, and problem solving at school, home, and even work settings. Instead of seeing mathematics as a set of disconnected topics, students should be able to view, understand, and appreciate the relationships among mathematical skills and concepts. When students build connections and skills, their understanding deepens and expands.

Students should have opportunities to learn mathematical skills and concepts as they progress through the grades and as such, should not spend a significant part of their instructional time reviewing mathematics content. Teachers at each grade level should know what mathematics concepts their students have already studied and will study in future grades to ensure that topics and skills taught at the present grade level are aligned with the past and perceived mathematical experiences.

The objectives at each grade level are divided into 6 strands: **Number and Number Sense, Patterns, Functions and Algebra; Computation and Estimation, Measurement, Geometry, and Statistics & Probability.**

While each of the six strands deals with a different area of mathematics at the respective grade levels, objectives from the strands should be integrated. For example, while teaching computation, it is natural to look at patterns and concepts from number sense. While teaching statistics, it is natural to ask questions that will require students to compute data presented in graph form.

In the Scope and Sequence, there are acronyms to advise teachers when a skill is to introduced, developed, maintained, and advanced. The letter I = Introduce, D= Develop, M= Maintain, and A= Advance. Following the Scope and Sequence is a suggested pacing guide for each grade level. The pacing guide is to assist teachers in planning for the year in order to include all of the content necessary for meeting the standards in teaching mathematics. Teachers are reminded that there are at least 7 periods of Mathematics scheduled on the Time Table per week. Using the scheduled time wisely, will enable teachers to complete the content at their grade level. At the beginning of each Scope of Work are essential questions that will guide the teaching and learning of the strands. At the end of the strands, students should be able to answer all of the questions.

Teachers are not expected to teach the objectives in the order presented. Instead, teachers are encouraged to take the objectives and work them into their yearly plan in a manner that integrates the strands with one another, and with other subjects. There are an unlimited number of combinations and each teacher should put together lessons that allow students to make sense of the material presented. If students attain the learning objectives in the time frame given, then move on. If not, move on and use other avenues in the document that will allow students to acquire the knowledge and skills.

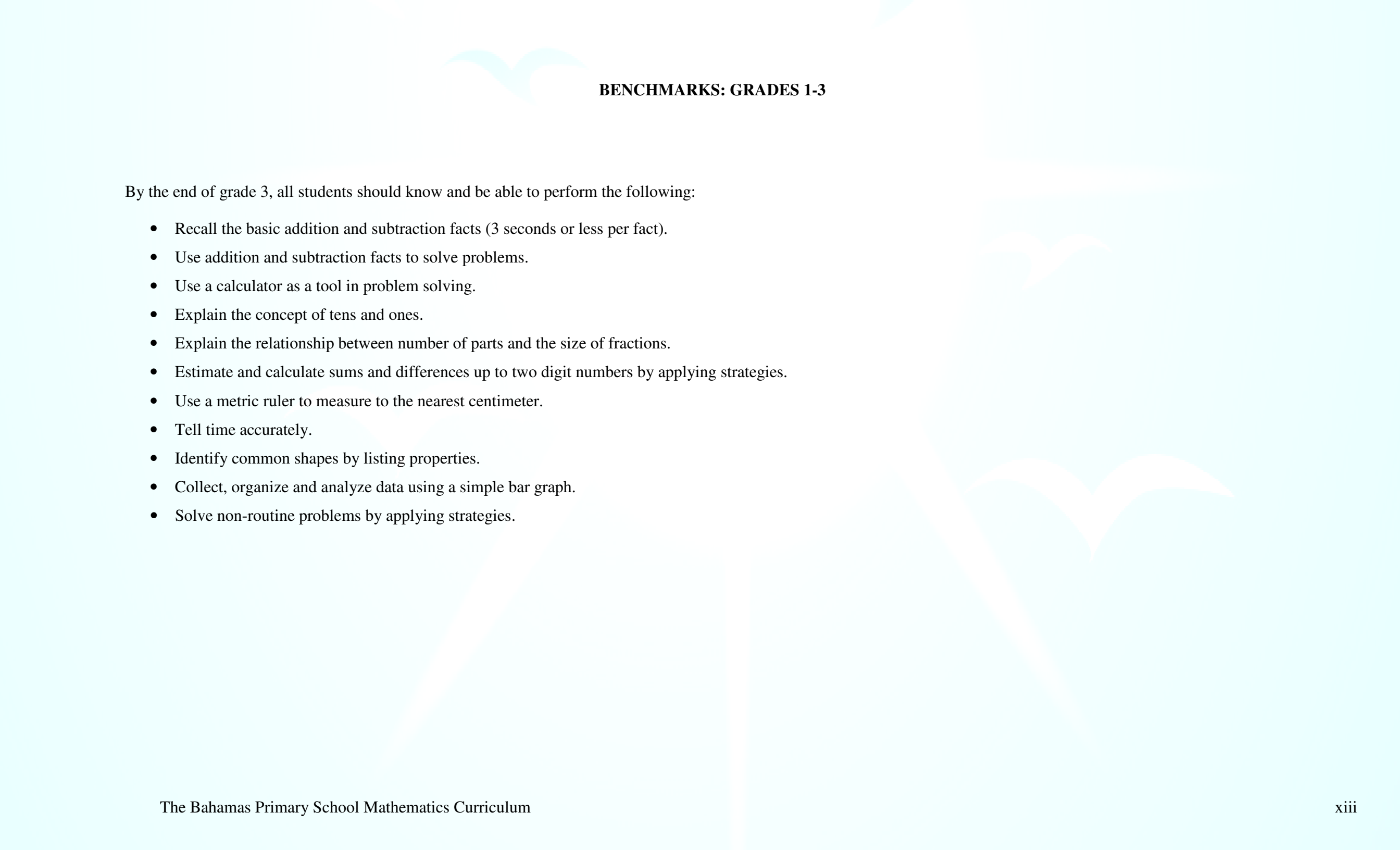
Teachers of grades 4-6 could begin the academic year with another strand other than Number and Number Sense if students would have been exposed to the skills earlier. During the period of 2005-2010, it has been proven (by the Primary Mathematics Unit) that students in the upper grades enjoy Measurement and Geometry Strands at the beginning of the academic year.

It is not feasible to list every objective in the pages of The Scope of Work of each strand in grades K-7 of the Mathematics Curriculum. Therefore, the Scope of Work for the year in which it is introduced at subsequent grade levels is reinforced and extended.

THEORETICAL FRAMEWORK

The major theoretical framework that guides the Primary Mathematics Curriculum is the constructivist theory. Constructivism emphasizes a hands-on approach to mathematics where students are more actively involved with teachers in creating new meanings. Additionally, constructivism often utilizes collaboration and peer criticism as a way of provoking students to reach a new level of understanding. During instruction, teachers focus on having students make connections between facts and developing new understanding. Further, teachers modify their teaching strategies to students' responses which encourage students to analyze, interpret, and predict information. Teachers depend on open-ended questions for discussions and encourage extensive dialogue among students. The curriculum promotes the following:

- Acceptance of student independence and initiative
- Utilization of manipulatives, interactive, and physical materials.
- Use of cognitive terminology by teachers such as "classify," "analyze," and "create" when planning.
- Responses of students to drive lessons, shift instructional strategies, and alter content
- Inquiry concerning students' understanding of concepts before sharing their own understanding of those concepts
- Dialogue of students with the teacher and with one another
- Inquiry by asking thoughtful, open-ended questions and encourage students to ask questions of each other
- Elaboration of students' initial responses
- Allowance for wait time after posing questions
- Time for students to construct relationships and create descriptions.



BENCHMARKS: GRADES 1-3

By the end of grade 3, all students should know and be able to perform the following:

- Recall the basic addition and subtraction facts (3 seconds or less per fact).
- Use addition and subtraction facts to solve problems.
- Use a calculator as a tool in problem solving.
- Explain the concept of tens and ones.
- Explain the relationship between number of parts and the size of fractions.
- Estimate and calculate sums and differences up to two digit numbers by applying strategies.
- Use a metric ruler to measure to the nearest centimeter.
- Tell time accurately.
- Identify common shapes by listing properties.
- Collect, organize and analyze data using a simple bar graph.
- Solve non-routine problems by applying strategies.

BENCHMARKS: GRADES 4-6

By the end of grade 6, all students should know and be able to perform the following:

- Recall basic multiplication and division facts (3 seconds or less per fact)
- Estimate and calculate whole number and decimals products and quotients by applying strategies.
- Estimate and calculate fraction sums, differences, and products by applying strategies.
- Explain the relationship among whole numbers, fractions, decimals, and percents.
- Estimate and measure length, volume, area, mass, and temperature in metric units.
- Classify types of triangles, quadrilaterals, and angles by properties.
- Use a fraction-type calculator as a tool.
- Collect, organize and analyze data using several types of graphs and measures of central tendencies (mean, median, mode, and range)
- Make reasonable predications about the outcomes of an event using simple probability rules.

DEFINITION OF CURRICULUM TERMS

Overarching Goal	Outlines the intended purpose of the curriculum document. It defines the overall outcome of the curriculum, in this case the Primary Mathematics Curriculum.
Sub-goals	Indicate the main objective for the various strands of the curriculum.
Standards	Outline learner outcomes and expectations for each sub-goal. They indicate student progression from one attainment level to another.
Scope and Sequence	A map outlining the objectives for each level, showing the progression and overview of the work to be accomplished.
Scope of Work	Develops each objective with suggested content, activities, assessment and resources to facilitate and enhance the teaching/learning process.
Skills	Learned capacity to carry out pre-determined results often with the minimum time. The following skills are central to Mathematics: researching, evaluation, analysis, synthesis, application, comparing and contrasting, role-playing, interpreting, and calculating.
Concepts	Scheme or plan for Mathematics. Key mathematical concepts include addition, subtraction, division, multiplication, and fractions,
Attitudes	Way a person views something or tends to behave towards it. Mathematical attitudes include showing confidence in using mathematics, perseverance in solving problems, a positive attitude, and a willingness to work. These attitudes will enable success in the teaching and learning of mathematics.
Content Standards	Cover what students are to learn in various subject areas, such as Mathematics and Science.
Performance Standards	Specify what levels of learning are expected.
World-class Standards	Content and performances that are expected of students in other industrialized countries. This term is also attached to the movement in the United States to bring U.S. students' academic achievement and knowledge on par with students' accomplishments in the other industrialized countries.

Essential Questions

Develop foundational understandings. They provide the fundamental organizing principles that bound an inquiry and guide the development of meaningful, authentic tasks. Essential questions have several key components:

- Attempts to answer essential questions and allow people to explore the connection between their personal, individual, unique experience of the world and its exterior, objective, held-in-common dimensions. In exploring essential questions together, people are able to find expression for their own strongest gifts and interests at the same time that they are able to establish a sense of community with others.
- Essential questions allow us to explore what knowledge is, how it came to be, and how it has changed through human history.
- An essential question is always posed at the boundary of the known and the unknown. While permitting fruitful exploration of what others before us have learned and discovered, attempts to answer an essential question open up mysteries that successively reveal themselves the more we come to "know".
- An essential question reaches beyond itself. It is embedded in ideals of freedom, strength, and possibility that permit people to come-to-know without becoming trapped in constructs that are unfair or no longer useful. Essential questions arise from an implicit commitment to human efficacy: to a belief that individuals can make a difference, that knowledge can both be acquired and changed.
- An essential question engages the imagination in significant ways. Without imagination, we could not ask the questions that drive science forward. We would have no art, no stories, no mathematics, no philosophy. Moreover, it is questions that spark the imagination that permit young and old to journey together into unknown realms. Imagination knows no bounds, no restrictions; nor do the questions we pose when we cultivate our powers of imagination. An essential question that arises from imaginative engagement is an important way to bring teacher, student, and subject matter together in ways that enrich all three.



DEFINITION OF STRANDS

The National Council of Teachers of Mathematics (NCTM) proposed six strands/standards that are content oriented. For the content standards/strands, the goals are further broken down into objectives.

Number and Number Sense: Deals with the proficiency of numbers and understanding of how numbers operate. It involves an understanding of how different types of numbers, such as fractions, decimals, and percent are related to each other, and how each can best be used to describe a particular situation. Further, it includes the more traditional category of school mathematics curriculum called numeration (process of counting or numbering) and thus includes the important concepts of place value, number base (decimal, multiple, binary) magnitude, and approximation and estimation. Knowing how to represent numbers, recognizing 'how many' are in a group, and using numbers to compare and represent, paves the way for grasping number theory, place value and meaning of operations and how they relate to one another. This strand emphasizes the understanding of numbers, number patterns, counting, and estimation. Such understanding is best developed through purposeful, concrete experiences and the use of manipulatives.

Patterns, Functions, and Algebra: Algebra is the ability to sort, order objects or numbers, and recognize and build on simple patterns. Algebra provides the language through which one communicates the patterns in mathematics. Algebra is more than a set of procedures for manipulating symbols. It provides a way to explore, analyze, and represent mathematical concepts and ideas. Additionally, it describes relationships that are purely mathematical or ones that arise in real-world phenomena and are modeled by algebraic expressions. From the earliest age, students should be encouraged to investigate the patterns that they find in numbers, shapes, and expressions, and, by doing so, make mathematical discoveries. They should have opportunities to analyze, extend, create a variety of patterns, use pattern-based thinking to understand and represent mathematical and other real-world phenomena. The function concept is one of the most fundamental unifying ideas of modern mathematics. Students begin their study of functions in the primary grades, as they observe and study patterns. As students grow and their ability to abstract matures, students form rules, display information in a table or chart, and write equations which express the relationships they have observed. In high school, they use the more formal language of algebra to describe these relationships. Learning algebra helps students make connections in varied mathematical representations, mathematics topics, and disciplines that rely on mathematical relationships.

The Pattern, Functions, and Algebra strand develops student ability to recognize, represent, and solve problems involving relations among quantitative variables (unknown letter). The key algebraic models in the curriculum are linear, exponential, power, polynomial, logarithmic, rational, and periodic functions. Each algebraic model is investigated in four linked representations - verbal, graphic, numeric, and symbolic - with the aid of technology. Attention is also given to modeling with systems of equations, both linear and nonlinear, and to symbolic reasoning and manipulation.

Computation and Estimation: Estimation is a process that is used constantly by mathematically capable adults, and one that can be easily mastered by children. It involves an educated guess about a quantity or an intelligent prediction of the outcome of a computation. The growing use of calculators makes it more important than ever that students know when a computed answer is reasonable. The best way to make that determination is through the use of strong estimation skills. Equally important, is an awareness of the many situations in which an approximate answer is as good as, or even preferable to an exact one. Students can learn to make these judgments and use mathematics more powerfully as a result.

Geometry: Stresses the development of students' spatial awareness through active involvement in working with two- and three-dimensional shapes. The primary goal of the geometry strand is to develop visual thinking and student ability to construct, reason with, interpret, and apply mathematical models of patterns in visual and physical contexts. Geometry is a natural place for the development of students' reasoning and justification skills. The focus is on describing patterns with regard to shape, size, and location; representing patterns with drawings or coordinates; predicting changes in shapes under geometric transformations; and organizing geometric facts and relationships through deductive reasoning. Geometric ideas are useful in representing and solving problems in other areas of mathematics and in real-world situations. Geometric representations can help students make sense of area and fractions. Bar graphs and scatter plots (a graph of plotted points that show the relationship between two sets of data) can give insights about data.

Measurement: Accentuates the investigation of concepts such as length, area, volume, capacity, mass, time, and temperature. Students begin to learn how to measure by working with non-standard units and then progress to using the basic metric and customary units. Students also become familiar with telling and computing elapsed time (the amount of time that has passed since a particular process started). Telling time and using money link to an understanding of the number system and represent an important life skill. Measurement offers an opportunity for learning and applying other mathematics skills, including number operations, geometric ideas, statistical concepts, and functions. It highlights connections within mathematics and connections between mathematics and areas outside mathematics, such as Social Studies, Religious Studies, Science, Music, Art, and Physical Education.

Statistics and Probability: Emphasizes the collection, organization, and interpretation of data. The primary role of the statistics and probability strand is to develop students' ability to analyze data intelligently, to recognize and measure variation, and to understand the patterns that underlie probabilistic situations. The ultimate goal is for students to understand how inferences can be made about a population by looking at a sample from that population. . As children collect information about the world around them, they will find it useful to display and represent their knowledge in the form of tables and graphs. Utilizing probability, students need to understand the fundamental concepts so that they can interpret weather forecasts, avoid unfair games of chance (gambling, buying raffle tickets), and make informed decisions about traveling or going on a field trip. They should regularly be engaged in predicting and determining probabilities, often based on experiments (like flipping a coin 100 times), but eventually based on systematic counting strategies. High school students should use probability models and solve problems involving compound events and sampling. Probability is also linked to other mathematical content areas such as counting techniques (number and operation), ratios of areas and volumes (geometry), and relationships between functions and the area under their graphs (algebra, data analysis).

PROBLEM SOLVING

FOUR PHASES IN SOLVING A PROBLEM

In solving any problem, it helps to have a working procedure. You might want to consider this four-step procedure: *Understand, Plan, Try It, and Look Back.*

- **Understand:** Before you can solve a problem you must first understand it. Read and re-read the problem carefully to find all the clues and determine what the question is asking you to find.

What is the unknown?

What are the data?

What is the condition?

- **Plan:** Once you understand the question and the clues, it's time to use your previous experience with similar problems to look for strategies and tools to answer the question.

Do you know a related problem?

Look at the unknown! And try to think of a familiar problem having the same or a similar unknown?

- **Try It:** After deciding on a plan, you should try it and see what answer you come up with.

Can you see clearly that the step is correct?

But can you also prove that the step is correct?

- **Look Back:** Once you've tried it and found an answer, go back to the problem and see if you've really answered the question. Sometimes it's easy to overlook something. If you missed something check your plan and try the problem again.

Can you check the result?

Can you check the argument?

Can you derive the result differently?

Can you see it at a glance?

Problem Solving Skills in Mathematics

- Estimation and approximation
- Mental calculation
- Communication
- Use of mathematics tools
- Arithmetic manipulation
- Algebraic manipulating
- Handling data
- Choose the Operation
- Draw Conclusions
- Estimate Exact Answer
- Interpret the Remainder
- Make Generalizations
- Solving Multi-Steps Problems
- Reasonable Answers
- Sequence Events
- Too Much/Too Little Information
- Use a Table/Graph
- Identifying Relationships

Problem Solving Strategies

- Draw a Picture
- Make a Table
- Look for a Pattern
- Make an Organized List
- Try, Check, Revise
- Write a Number Sentence
- Act it Out
- Use Reasoning
- Work Backward
- Solve a Simpler Problem
- Make a Graph

BEST PRACTICES IN IMPROVING STUDENT ACHIEVEMENT IN MATHEMATICS

Best practices in mathematics focus on allowing students to be actively *doing mathematics* so they can build and enhance their understanding of mathematical ideas. The following links will provide more information on current NCTM math standards and best practices in mathematics. Programs should provide a curriculum that is based on research findings on how best to improve student achievement in mathematics. Those findings are summarized by Grouws and Cebulla in an ERIC Digest, January 2002. Programmes should be designed to offer supplemental instruction, which expands students' exposure to mathematical skills and concepts. Strong correlations between opportunity to learn (OTL) and the mean of student achievement scores is documented in several international studies cited by Grouws and Cebulla. Other best practices identified in this study include:

- Daily problem-solving inclusive of multiple steps problems
- Opportunities to discover and invent new knowledge
- Opportunities for student interaction and discussion
- Whole-class discussion following individual and group work
- Instructional focus on number sense
- Provision of differentiated classroom instruction using a variety of instructional methods and intervention.
- Use of manipulatives and technology
- Use of cooperative learning strategies/peer tutoring
- Integration of mathematics strands and other subjects
- Use of probing and questions skills
- Lessons that are student oriented
- Link to prior knowledge
- Fostering active inquiry and supportive interaction

- Emphasizing the real life relevance of Mathematics
- Monitoring students' progress and revise their instructional plan as needed.
- Allowing students to reason mathematically and to communicate and justify their thinking.
- Drawing on students' discovery and creativity to keep them interested.

Suggested Strategies to Improve Numeracy in the Primary School

- Give pre and post tests from grades 1-6. Pre-tests are given at the beginning of the academic year and are used to assess and group students according to their needs and direct teaching practices. Teachers of grade 4 should use the Grade Level Assessment Test (GLAT) results to identify weaknesses and strengths of their students.
- Teach to the needs of each group of students during guided mathematics activities.
- Integrate mathematics across the curriculum.
- Give tests at the end of a concept or unit. This will identify students learning and the effectiveness of teacher strategies/practices
- Give post-test at the end of the school year to determine students' successes.
- Record results from the assessments in teachers' Mark Book, portfolios, and formal reports.
- Host Mathematics competitions to give students the opportunity to compete with their peers and solidify skills and concepts taught.
- Teacher training/upgrading in mathematics instruction.

ASSESSMENT STRATEGIES

The Assessment Principle

Assessment should support the learning of mathematics, furnish useful information to both teachers and students, and be more than merely a test at the end of instruction to gauge learning. It should be a part of instruction that guides teachers and enhances students' learning.

Teachers should continuously gather information about their students through questions, interviews, writing tasks and other means. They can make appropriate decisions about such matters as reviewing materials, reteaching a difficult concept, or providing something more or different for students who are struggling or need enrichment.

Assessment is the standardized process of measuring students' performance to gather information for future developmental use. At the primary school level, National Examinations are used to assess the status of the CURRICULUM to gather qualitative information that pinpoint and diagnose strengths and weaknesses. As the examinations are diagnostic in nature, for the students to excel, they must initially be exposed to all the content areas across each strand of the Mathematics curriculum as this aspect of teaching and learning is critical to their overall success. Assessment should focus on understanding as well as procedural skills. Students learn in different ways, therefore, multiple ways of assessment should be utilized.

Secondly, students must become confident in their ability to apply the skills across all of the cognitive levels of learning. Alexander Bloom (1956), identified six levels within the cognitive domain which must be acquired if students are going to fully develop their critical thinking skills. These levels range from the simple recall or recognition of facts, as the lowest level to the analyzing and judgment of material that is classified as the highest level. The levels and accompanying skill structures are as follows:

Knowledge: Is remembering previously learned material or information. At this level, all that is required is the recall or bringing to mind the information that was previously taught.

Comprehension: Is the ability to grasp the meaning of material. This skill assesses the students' ability to effectively manipulate information. Mastery of this skill is shown by the students ability to effectively:

- translate material from one form to another (words to numbers etc.),
- interpret material (explain or summarize procedures etc.),
- estimate future trends (predicting consequences or effects and/or draw mathematical conclusions).

Learning outcomes at the comprehension level go one step beyond the simple remembering of material, and represent the lowest level of understanding.

Application: Is the ability to use previously learned material or information in new and or concrete situations. This includes the application of such things as:

- rules
- methods
- concepts
- principles
- laws
- theories

Learning outcomes in this area require a higher level of understanding than those under comprehension.

Analysis: Is the ability to break down material into its component parts so that its organizational structure may be understood. This includes:

- the identification of the individual parts of geometrical shapes, structures and units;
- the analysis of the relationships between parts and of parts to the whole structure or unit;
- recognition of the organizational principles involved in the operation of the individual parts and the structure or unit as a whole.

Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material presented.

Synthesis: Is the ability to put parts together to form a new whole. This involves the:

- assembling or creating of a graph, table, geometric shape, patterns etc.
- organizing or arranging of a set of objects with abstract relations (scheme for classifying information etc.).
- putting together a plan of operation (research proposal)
- production of a speech, play, recital etc.

Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structures.

Evaluation: Is the ability to judge the value of material (statement, novel, poem, research report etc.) for a specific purpose. The judgments are to be based on definite criteria which the student may determine or be given. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all the other categories, plus conscious value judgments based on clearly defined criteria. Additionally, national assessments expose students to various types of questions. Hence, students must develop an appreciation for answering appropriately different types of questions among which could be found the following types of questions:

- **MULTIPLE CHOICE QUESTIONS:** Questions of the four option type that consist of a stem with one correct answer and three distracters.
- **MATCHING QUESTIONS-ONE-TO-ONE PAIRING:** Column aligned questions in which students must match options in column ‘A’ with those in column ‘B’.
- **SHORT ANSWER / COMPLETION QUESTIONS:** Questions that require the completing of a statement or question using a single word or a well-constructed sentence, or a multi-faceted mathematical process
- **STRUCTURED QUESTIONS:** Questions in which sub-question branches follow from a common stem with the easiest question first and the difficulty level increasing with the progression of the structure. These would include such skills as the interpretation of information from graphs and follow through questions.
- **FREE RESPONSE (ESSAY) QUESTIONS:** Questions that require explanation, discussion or calculation on material for which the examiner has not provided a pattern of response. In their response to this type of question, the students are expected to demonstrate communication, planning and organizational skills.

Exposure to the various questioning types allows for an in-depth assessment of students knowledge on the various subject matters as well as their ability to apply critical thinking skills. Further, National Assessments promote the use of timed tests. As success in this mode requires discipline on the part of the students, continual practice in working with timed tests and quizzes throughout the school year will provide students with regular practice in working within the allocated time frames for the various components of the examination. Given continued exposure to all curriculum content areas, the different levels of the assessment objectives, the various questioning techniques and timed tests/ quizzes on a continual basis, students will be equipped with the skills and practices that are necessary to prepare them mentally and physically to confidently write National Examinations.

PROBLEMS OF THE DAY (POD)

Students of all ages should be given the challenge to solve problems in mathematics class everyday. It is only through solving problems that they will become proficient problem solvers. Therefore, to help teachers find appropriate grade level problems, in the appendix is a collection of about 100 problems for your grade level. **Some problems have the answers and for others you have the opportunity of working them out with your students.**

How you use these problems is up to the individual teacher. Below are a few suggestions:

- i. Post a Problem of the Day (POD) in your classroom every morning and let students work on it individually or in groups throughout the day and for homework. The next day, discuss the previous day's solution and post a new POD.
- ii. Start each mathematics class with a POD. Let student work on it when they finish assignments. Discuss solutions at the end of the class.
- iii. Set aside 15 minutes per day for students to work in assigned groups on the POD.
- iv. Post a POD every other day and let students work on it after they complete other class assignments
- v. Assign a POD for homework and give extra credit to students who show evidence of attempting a solution.
- vi. Post the same POD for an entire grade level every day or every other day. Let students collect points for every problem well attempted. Which class gathers the most points?
- vii. Open every faculty meeting or department meeting with a POD just for fun!

Problem of the Day

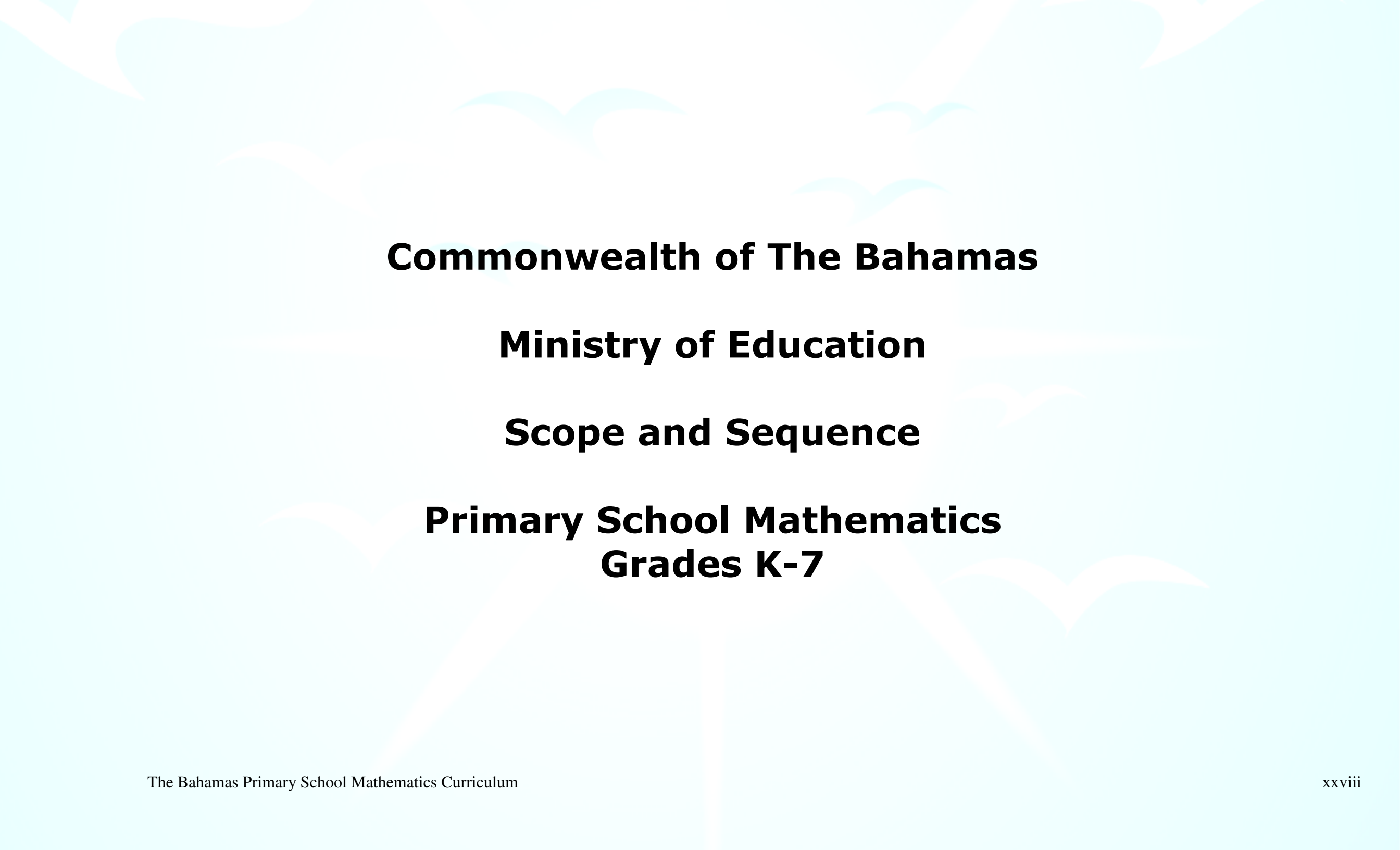
Give students a problem daily. Instead of solving the problem, break down the task. This makes it easier to model all steps in the problem-solving process. Students can

- tell what the question is asking them to do
- underline key words in the question that indicate the mathematical operation to be performed
- delete extraneous information
- identify the parts in the question
- find the best problem-solving strategy and explain why it is the best
- describe two different ways a problem could have been solved
- have students develop questions from graphic information
- share student-generated questions

- ask other students to solve the problem and justify their answers

*NOTE: No matter how you use your PODs, it is imperative that there be a class discussion of the solution(s) where students present solutions with justifications.

**NOTE: It is fun to solve problems with the class when you do not know the solution in advance Try it!



Commonwealth of The Bahamas

Ministry of Education

Scope and Sequence

**Primary School Mathematics
Grades K-7**

**SCOPE AND SEQUENCE
MATHEMATICS CURRICULUM
NUMBER AND NUMBER SENSE**

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
1. Identify and count “how many” in sets of objects.	I	D	D	M	A	A	M	A
2. Identify , count, write, and associate numerals and number words.	I	D	D	M	A	A	M	A
3. Connect number words and numerals to the quantities they represent (using various physical models).	I	D	D	M	A	A	M	D
4. Identify, write, and count using Roman Numerals.				I	D	A	D	M
5. Develop a sense of the position and magnitude of whole numbers and differentiate between the various classes of numbers e.g. cardinal and ordinal numbers, odd and even numbers, prime and composite, and triangular numbers etc.			I	D	D	D	D	M
6. Identify various representations of the same number /quantity and generate them by composing, and decomposing numbers.		I	D	D	M	M	M	A
7. Identify and use number values and place values within the base-ten number system.	I	D	D	A	A	D	M	M
8. Represent and compare whole numbers, decimals, and percents.				I	D	D	D	M
9. Identify and represent commonly used fractions such as $\frac{1}{4}$, $\frac{1}{3}$, and $\frac{1}{2}$. and use models, benchmarks, and equivalent forms to judge the size of fractions.		I	D	D	M	M	A	M
10. Relate/name fractions as parts of unit wholes, as parts of a collection, as locations on number lines, and as divisions of whole numbers.			I	D	A	D	M	D
11. Identify, name/write equivalent forms of commonly used fractions, and decimals, and find percentages of different amounts.				I	D	D	A	M
12. Compare and order fractions, decimals, and percents and find their approximate locations on a number line.				I	D	D	A	M

**SCOPE AND SEQUENCE
MATHEMATICS CURRICULUM
NUMBER AND NUMBER SENSE**

Sub-goal 1: Demonstrate and apply knowledge and sense of numbers, including numeration, patterns, ratios, and proportions **(Continued)**

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
13. Simplify and convert fractions, decimals and percents.				I	D	A	A	M
14. Identify, write, and convert improper fractions to mixed numbers.				I	D	D	A	M
15. Compare and order fractions, decimals, and percents.				I	D	D	M	M
16. Explain the meaning of addition, subtraction, multiplication, and division and identify them with the specific vocabulary of each rule of number.	I	D	D	A	A	D	M	M
17. Use multiplication arrays to differentiate between various multiplication problems.			I	D	D	A	M	M
18. Explore positive and negative integers on a number line.							I	D
19. Identify and differentiate between prime and composite numbers.						I	D	D
20. Find the LCM and HCF of numbers.						I	D	D
21. Identify and use ratios and proportions to represent quantitative relationships.				I	D	A	A	D
22. Use appropriately exponential notations.						I	D	D
23. Describe integers, represent, and compare quantities with them.						I	D	D
24. Identify squares and square roots of numbers.						I	D	D
25. Use factors, multiples, prime factorization to solve problems.				I	D	A	M	M

SCOPE AND SEQUENCE MATHEMATICS CURRICULUM

PATTERNS, FUNCTIONS, AND ALGEBRA

Sub-goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
1. Sort, classify, and order objects by size, amount, and other properties.	I	D	A	A	M	D	D	A
2. Identify, describe, and extend various patterns such as sequences of sounds, shapes, or simple numeric patterns, and analyze how both repeating and growing patterns are generated.	I	A	A	A	M	D	D	A
3. Use concrete, pictorial, and verbal representations to develop an understanding of invented and conventional symbolic notations.				I	D	D	M	A
4. Model situations that involve addition and subtraction of whole numbers, using objects, pictures, and symbols.				I	D	D	M	A
5. Identify and construct rectangular, triangular, oblong, L-shaped numbers.					I	D	D	M
6. Describe qualitative change using various attributes	I	D	D	M	A	A	D	D
7. Describe, extend, and generalize about geometric and numeric patterns.		I	D	M	A	A	D	D
8. Represent and analyze patterns and functions using words, tables, and graphs.			I	D	M	A	A	D
9. Identify and illustrate general principles and properties as commutative, associative and distributive, and use them to compute with whole numbers.				I	D	D	M	M

SCOPE AND SEQUENCE
MATHEMATICS CURRICULUM

PATTERNS, FUNCTIONS, AND ALGEBRA

Sub-goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results (**Continued**)

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
10. Represent a variable as an unknown quantity using a letter or a symbol.						I	D	D
11. Express Mathematical relationships using equations						I	D	D
12. Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions		I	D	D	M	A	A	D
13. Represent, analyze, and generalize a variety of patterns with tables, graphs, and words.		I	D	D	A	A	D	M
14. Use symbolic algebraic notations to represent situations and solve problems.							I	D

SCOPE AND SEQUENCE MATHEMATICS CURRICULUM

COMPUTATION AND ESTIMATION

Sub-goal 3: Estimate and understand the meaning, use and connection between the four (4) basic operations; addition, subtraction, division and multiplication.

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
1. Add and subtract whole numbers, decimals, and money, and explain their effects.		I	D	A	A	A	M	M
2. Estimate and round numbers and use the strategies to add, subtract, multiply, and divide whole numbers, decimals and money.				I	D	A	M	M
3. Explain and demonstrate situations that entail multiplication and division, such as sharing equally and equal groupings of objects. .				I	D	D	M	A
4. Develop and use strategies for whole–number computations, with focus on addition and subtraction.		I	D	M	A	M	M	M
5. Use a variety of methods and tools to compute, including: objects, mental computation, estimation, paper, pencil, and calculators.		I	D	M	A	M	M	A
6. Use the divisibility rule for division.						I	D	M
7. Explain how to multiply and divide whole numbers.			I	D	D	M	A	M
8. Describe and create relationships between operations, using division as the inverse of multiplication, to solve problems.			I	D	D	M	A	M
9. Explain and use properties of operations, such as the distributives of multiplication over addition.						I	D	D
10. Develop fluency with basic number combinations for multiplication and division, and use these combinations to compute mentally related problems such as 30 X 50.				I	D	M	A	A
11. Develop fluency in adding, subtracting, multiplying and dividing whole numbers.				I	D	M	M	A
12. Choose and use appropriate strategies to estimate the results of whole number computations and judge the reasonableness of each result.					I	D	M	A

**SCOPE AND SEQUENCE
MATHEMATICS CURRICULUM
COMPUTATION AND ESTIMATION**

Sub-goal 3: Estimate and understand the meaning, use and connection between the four (4) basic operations; addition, subtraction, division and multiplication **(Continued)**.

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
13. Apply and use strategies to estimate computations involving fractions and decimals in situations relevant to students' experience.				I	D	A	D	M
14. Use visual models, benchmarks, and equivalent forms to add and subtract commonly used fractions and decimals.				I	D	M	M	A
15. Select appropriate methods and tools for computing whole numbers: mental computation, estimation, use of calculators, paper and pencil regarding the context and nature of the computation.			I	D	M	A	A	M

SCOPE AND SEQUENCE
MATHEMATICS CURRICULUM

MEASUREMENT

Goal 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

Key: I = Introduce, D = Develop, M = Maintain, A = Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
1. Explain and model attributes of length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring.	I	D	D	A	A	D	M	M
2. Identify the attributes of length, volume, weight, area, perimeter and time, and compare and order objects according to these attributes	I	D	D	A	A	D	M	M
3. Measure objects using non-standard units e.g. multiple copies of units of the same size, such as paper clips laid end to end.		I	M	A	D	A	M	A
4. Differentiate and use standard units: customary and metric.		I	M	A	D	A	M	A
5. Develop common referents (similarities) to measure and make comparisons and estimations.	I	D	D	M	M	A	A	D
6. Identify relationships among units and convert from one unit to another within the same system.				I	D	D	M	M
7. Explore what happens to measurements of a two-dimensional shape such as perimeter and area when the shapes change in some way.					I	D	D	M
8. Identify coins and bills, and make change for given amounts.		I	A	D	D	A	D	M

SCOPE AND SEQUENCE MATHEMATICS CURRICULUM

MEASUREMENT

Sub-goal 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy (**Continued**)

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
9. Use strategies for estimating the perimeters, areas, and volumes of irregular shapes.				I	D	D	M	M
10. Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and size of angles.					I	D	D	M
11. Use formulas to find the area of rectangles and related triangles and parallelograms.						I	D	M
12. Develop strategies to determine the surface areas and volumes of rectangular solids.							I	D
13. Identify, select, and use units of appropriate methods for estimating measurements.						I	D	M
14. Select and apply techniques and tools that would accurately find length, area, volume, and angle (measures should be precise).					I	D	M	A
15. Use formulas to determine the circumference of circles and the area of triangle, parallelograms, trapezoids, and circles.							I	D
16. Solve simple problems related to measurement.	I	D	D	M	A	A	D	M

**SCOPE AND SEQUENCE
MATHEMATICS CURRICULUM
GEOMETRY**

Sub-goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
1. Identify, name, build, draw, compare, and sort two- and three-dimensional shapes.	I	D	D	A	A	D	M	M
2. Describe attributes and parts of two-and three-dimensional shapes.		I	D	D	M	A	A	D
3. Investigate and predict the results of putting together and taking apart two-and three-dimensional shapes.			I	D	D	M	A	D
4. Name, describe, interpret relative positions in space, and apply ideas to relative position.		I	D	D	M	D	M	A
5. Find and name locations in coordinate systems such as maps.	I	D	D	A	M	D	D	A
6. Identify and apply slides, flips, and turns to objects and shapes.			I	D	M	D	M	A
7. Identify and create shapes that have symmetry	I	D	D	M	A	A	M	D
8. Create mental images of geometric shapes using spatial memory and spatial visualization.			I	D	D	A	D	M
9. Identify and represent shapes from different perspectives.	I	D	D	A	M	D	D	A
10. Relate ideas in geometry to ideas in number and measurement.				I	D	D	M	A
11. Identify geometric shapes and structures in the environment and specify their locations.	I	D	D	A	M	M	D	D
12. Identify, compare and analyze attributes of two-and three-dimensional shapes and develop vocabulary to describe the attributes.				I	D	D	M	A
13. Classify two-and three-dimensional shapes according to their properties and develop definitions of classes of shapes such as triangles and pyramids.					I	D	D	M
14. Investigate, describe, and reason about the results of subdividing, combining, and transforming shapes.						I	D	D

**SCOPE AND SEQUENCE
MATHEMATICS CURRICULUM
GEOMETRY**

Sub-goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space (**Continued**).

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
15. Describe location and movement using common language and geometric vocabulary.					I	D	D	M
16. Make and use coordinate systems to specify locations and to describe paths.				I	D	D	M	M
17. Explore congruence and similarity.						I	D	D
18. Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions.							I	D
19. Find the distance between points along horizontal and vertical lines of a coordinate system.						I	D	D
20. Predict and describe the results of sliding, flipping, and turning two-dimensional shapes.						I	D	D
21. Describe a motion or a series of motions that will show that two shapes are congruent.						I	D	D
22. Identify and describe line and rotational symmetry in two-and three-dimensional shapes and designs				I	D	D	M	A
23. Build and draw geometric objects.	I	D	D	A	A	M	D	D
24. Create and design mental images of objects, patterns, and paths.				I	D	D	M	A
25. Identify and build a three-dimensional object from two-dimensional representations of that object.			I	D	D	M	A	A
26. Use geometric models to solve problems in other areas of mathematics, such as number, and measurement.				I	D	D	A	M
27. Identify geometric ideas and relationships and apply them to other disciplines and problems that arise in the classroom or in everyday life.				I	D	D	A	M
28. Describe, classify, and understand relationships among types of two-and three dimensional objects using their defining properties.						I	D	D

SCOPE AND SEQUENCE
MATHEMATICS CURRICULUM
GEOMETRY

Sub-goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space **(Continued)**.

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

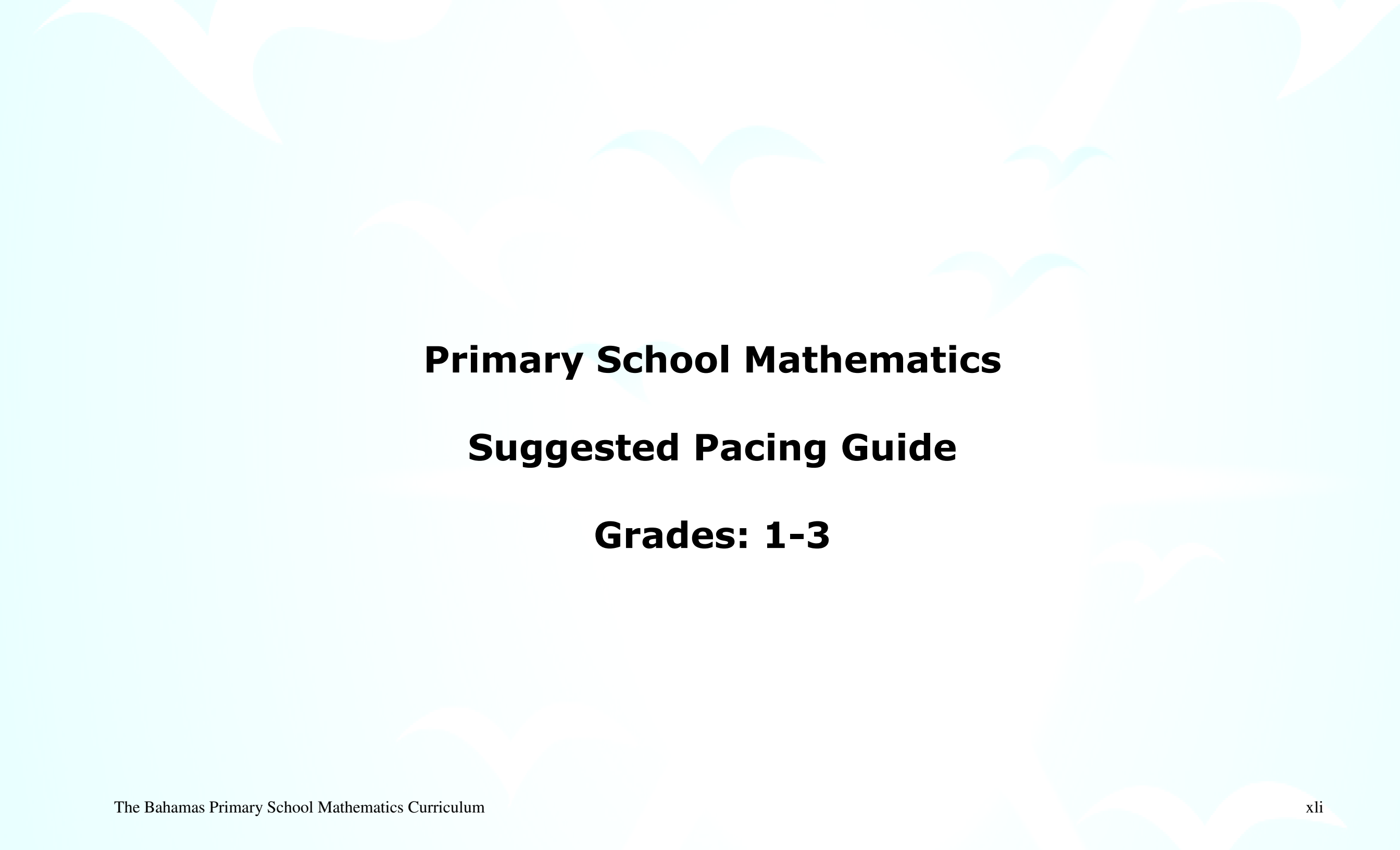
Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
29. Explain relationships among the angles, side lengths, perimeters, areas, and volumes of similar objects.						I	D	D
30. Use coordinated geometry to represent and examine the properties of geometric shapes.						I	D	D
31. Describe sizes, positions, and orientation of shapes under informal transformation such as flips, turns, and slides.					I	D	D	M
32. Identify and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science, and every day life.				I	D	D	M	M

**SCOPE AND SEQUENCE
MATHEMATICS CURRICULUM
STATISTICS AND PROBABILITY**

Sub-goal 6: Collect, organize and analyze data using statistical methods: predict results; and interpret uncertainty-using concepts of probability.

Key: I = Introduce, D= Develop, M= Maintain, A= Advance

Objectives	Preschool	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
1. Pose questions and gather data about themselves and their surroundings.	I	D	D	M	M	A	D	M
2. Sort and classify objectives according to their attributes and organize data about the objects.	I	D	D	M	M	A	D	M
3. Represent data using concrete objects, pictures, and graphs.	I	D	D	M	M	A	D	M
4. Describe parts of the data and the set of data as a whole to determine what the data show.			I	D	D	M	M	A
5. Discuss events related to students' experiences as likely or unlikely.	I	D	D	A	M	M	A	D
6. Collect data using observations, surveys, and experiments.			I	D	D	M	M	A
7. Represent data using tables and graphs such as bar graphs and line graphs.			I	D	A	D	M	M
8. Describe the shape and important features of a set of data and compare related data sets, with emphasis on how the data are distributed.					I	D	D	M
9. Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.						I	D	D
10. Propose and justify conclusions and predictions that are based on data and design studies to further investigate the conclusions or predictions.						I	D	D
11. Describe events as likely or unlikely and discuss the degree of likelihood with such words as <i>certain, equally, likely, and impossible</i> .				I	D	A	M	M
12. Predict the probability of outcomes of simple experiments and test the predictions.				I	D	A	M	M
13. Formulate questions, design studies, and collect data about a characteristic shared by two populations or different characteristics within one population.					I	D	D	M

The background of the page features a light blue sky with several white seagulls in flight. Below the sky, there are stylized, wavy lines in shades of light blue and white, representing the ocean or waves. The overall aesthetic is clean and modern.

Primary School Mathematics

Suggested Pacing Guide

Grades: 1-3

**MINISTRY OF EDUCATION
PRIMARY MATHEMATICS CURRICULUM
TOPIC PACING GUIDE
GRADE: 1**

STRAND	TOPICS	DURATION				
		1 Day		2	1	2
		35 mins.	60 mins.	Days	Week	Weeks
Number and Number Sense						
	1. Positioning Vocabulary Words				√	
	2. Classifying Concrete objects			√		
	3. Reading, Writing and Reciting number Sequences Through 100					√
	4. Numbers: Before and After				√	
	5. Sets Containing 0-20 Members					√
	6. Objects in Sets				√	
	7. Ordinal Positions Through Tenth				√	
	8. Sum of Two Addends					√
	9. Groups of Tens and Ones				√	
	10. Fractions ($\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{3}$) as a Whole					√
	11. Place Value of Two Digit Numbers				√	
	12. Numerator and Denominator in Fractions				√	
	13. Various Ways of Addition and Subtraction					√
Patterns, Functions, and Algebra	1. Patterns Using Pictures, Shapes and Numbers				√	
	2. Patterns from one Medium to Another				√	
	3. Skip Counting				√	

MINISTRY OF EDUCATION
PRIMARY SCHOOL MATHEMATICS CURRICULUM
TOPIC PACING GUIDE
GRADE: 1

STRAND	TOPICS	DURATION				
		1 Day		2	1	2
Computation and Estimation	1. Appropriate Strategy to Determine the Answer to Facts 2. Addition and Subtraction Facts to 20 3. Solving Fact Families 4. Mental Arithmetic 5. “How Many” and “How Much” in a Given Set 6. Appropriate Method: Estimating or Counting 7. Addition and Subtraction Problem Using Solving Whole Numbers	35 mins.	60 mins.	Days	Week	Weeks
					√	
					√	
					√	
		√				
					√	
					√	
						√
Measurement	1. Comparing Lengths and Heights of Two Objects 2. Comparing Lengths/heights of Objects: Non-standard Units 3. Comparing Using Standard and Non-Standard Units to Estimate 4. Measuring Using Metric Units (metre, centimetre) 5. Comparing Masses 6. Hot and Cold 7. Comparing Surfaces Objects to Determine Equality of Areas 8. Appropriate Time of Day 9. Days and Weeks on the Calendar 10. Months of the Year in Order 11. Hour and Half-hour on an Analog Clock 12. Counting Coins up to 25 cents 13. Equivalent of Other Coins Values in Pennies 14. Money Value Through Exchange			√		
				√		
				√		
				√		
			√			
			√			
					√	
			√			
				√		
				√		
						√
						√
				√		
					√	

**MINISTRY OF EDUCATION
PRIMARY SCHOOL MATHEMATICS CURRICULUM
TOPIC PACING GUIDE
GRADE: 1**

STRAND	TOPICS	DURATION			
		1 Day		1 Week	2 Weeks
Geometry	1. Use of Venn Diagrams 2. Triangle, Squares, Rectangles and Circles in Different Orientations 3. Basic Solid Shapes	35 mins.	60 mins.	√	
				√	
					√
					√
Statistics and Probability	1. Graphs and Pictographs 2. Use of Vocabulary: Less, Greater Than, and Less Than 3. Prediction About Graphs 4. Concept of Chance 5. Describing Terms: Likely and Unlikely				√
					√
					√
				√	
				√	

**MINISTRY OF EDUCATION
PRIMARY SCHOOL MATHEMATICS CURRICULUM
TOPIC PACING GUIDE
GRADE: 2**

STRAND	TOPICS	DURATION				
Number and Number Sense	1. Numbers from 0 to 20 on a Number Line 2. Number Sequences 3. Ascending and Descending Order of Numbers 4. Positioning Numbers of Ordered Sets 5. Two-digit Number in Terms of Tens and Ones 6. Place Value of a Three-digit Number 7. Whole Numbers Between 0-999 8. Odd and Even Numbers 9. Parts of a Whole 10. Fractional Parts of a Whole	1 Day		2 Days	1 week	2 weeks
		35 mins.	60 mins.			
				√	√	
					√	
					√	
					√	
					√	
					√	
					√	
					√	
					√	
Patterns, Functions, and Algebra	1. Action and Repeated/Grouping Patterns 2. Patterns 3. Skip Counting up to 999 4. Missing Numbers on a Number Line 5. Objects in a Set 6. Non-Routine Problems				√	
					√	
					√	
					√	
					√	
					√	
					√	

**MINISTRY OF EDUCATION
PRIMARY SCHOOL MATHEMATICS CURRICULUM
TOPIC PACING GUIDE
GRADE: 2**

STRAND	TOPICS	DURATION				
		1 Day		2	1	2
		35 mins.	60 mins.	Days	Week	Weeks
Computation and Estimation	1. Addition and Subtraction Facts up to Twenty				√	
	2. Facts to Mental Math				√	
	3. Strategies for Sums and Differences				√	
	4. Fact Families Using Addition and Subtraction				√	
	5. Two-Digit Numbers				√	
	6. The Difference of Two-digit Numbers				√	
	7. Objects in a Set Using 0, 10, and 100				√	
	8. Finding Sums and Differences				√	
	9. Multiplication as Repeated Addition					√
	10. Division as Repeated Subtraction					√
	11. Solve Problems in Addition and Subtraction Using Whole Numbers				√	
					√	
Measurement	1. Nearest Meter, Centimeter, or Decimeter				√	
	2. Measuring Area Using Nonstandard Units				√	
	3. Objects Using Metric Measurements				√	
	4. Mass of Familiar Objects Using Metric: Grams and Kilograms				√	
	5. Measure and Compare Temperatures				√	
	6. Appropriate Parts of the Day				√	
	7. Sequencing Days of the Week and Months of the Year				√	
	8. Calendar for The Month, Year, and Date				√	
	9. Associations Between Months, Days, and Weeks on Calendar				√	
	10. Equivalent Relationships Between Days, Months, Years and Hours				√	
	11. Time, to the Hour, Half Hour and Quarter on an Analog Clock				√	
	12. Using Coins and Bills				√	
	13. Compare and Make Change Using a Collection of Coins					√
	14. Symbols: \$, ¢ and Decimal Point				√	
	15. Solve Problems Using Whole Numbers and Money				√	

**MINISTRY OF EDUCATION
PRIMARY SCHOOL MATHEMATICS CURRICULUM
TOPIC PACING GUIDE
GRADE: 2**

STRAND	TOPICS	DURATION				
		1 Day		2 Days	1 Week	2 Weeks
Geometry	1. Properties of Common Plane Shapes 2. Classifying Flat Shapes 3. Identifying a Spheres, Cones, Cubes and Cylinders 4. Classifying Solid Shapes 5. Differentiating Between Plane and Solid Shapes 6. Lines of Symmetry 7. Relationships: In Coordinate System and Maps	35 mins.	60 mins.			
					√	
					√	
					√	
					√	
					√	
					√	
					√	
Statistics and Probability	1. Interpreting Data: Concrete and Pictographs 2. Interpret Data on Horizontal and Vertical Bar Graphs 3. Predictions from Graphs 4. Using Likely and Unlikely to Everyday Situations/Events 5. Range and Mode				√	
					√	
					√	
					√	
					√	

MINISTRY OF EDUCATION
PRIMARY SCHOOL MATHEMATICS CURRICULUM
TOPIC PACING GUIDE
GRADE: 3

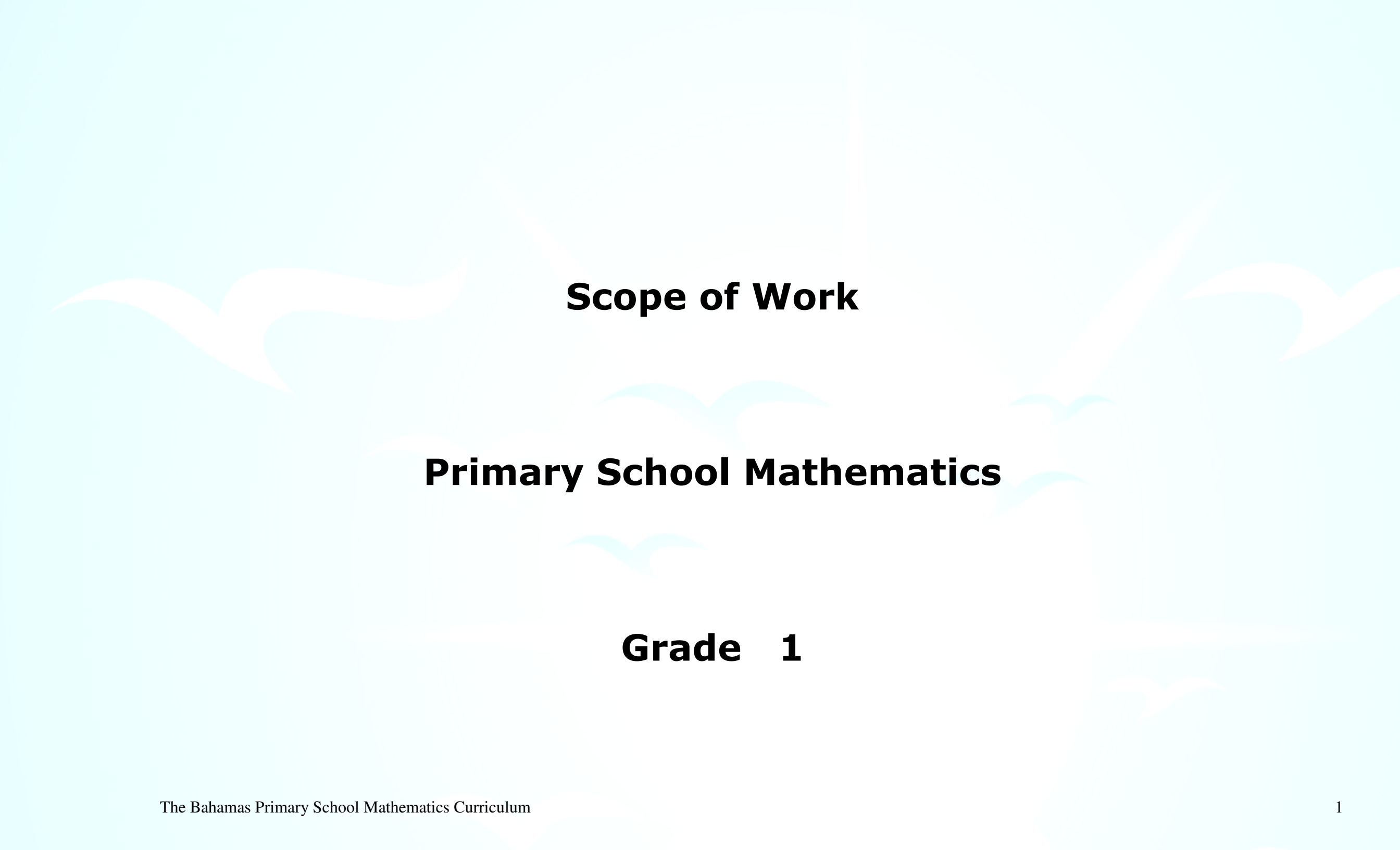
STRAND	TOPICS	DURATION				
		1 Day		2	1	2
		35 mins.	60 mins.	Days	Week	Weeks
Number and Number Sense	1. Ordinal Numbers to Identify Positions	√				
	2. Reciting Sequences of Numbers Through 9999			√		
	3. Places and Values of Given Digits up to 9999				√	
	4. Four-digit Numbers in Expanded Form				√	
	5. Compare and Order Numbers Through 9999			√		
	6. Roman Numbers to XXV (25)			√		
	7. Converting Combinations of Roman Numbers			√		
	8. Using Numbers in Everyday Life		√			
	9. Explaining the Relationship Between Odd and Even Numbers		√			
	10. Counting to 100 by 2s, 3s, 4s, 5s, 10s and 50s			√		
	11. Rounding to the Nearest Tens and Hundreds				√	
	12. Fractions Representations		√			
	13. Relationship Between a Fractional Part and its Whole		√			
	14. Ordering Fractions With the Same Denominator			√		
	15. Equivalent Fractions				√	
	16. Ordering Fractions with Different Denominator				√	
	17. Simplest Form of Fractions				√	
	18. Representations for Tenths and Hundredths				√	
Patterns, Functions, and Algebra	1. Numerical and Symbolic Patterns		√			
	2. Missing Numbers on a Number Line	√				
	3. Patterns Identification	√				
	4. Expressions Using =, > and <		√			

**MINISTRY OF EDUCATION
PRIMARY SCHOOL MATHEMATICS CURRICULUM
TOPIC PACING GUIDE
GRADE: 3**

STRAND	TOPICS	DURATION			
		1 Day		2	1
		35 mins.	60 mins.	Days	Week
Computation and Estimation	1. Addition and Subtraction Facts Through 20: Three Seconds	√			
	2. Sums and Differences		√		
	3. Addition and Subtraction of Money			√	
	4. Computational Problems in Addition Using Whole Numbers: With and Without Regrouping				√
	5. Computational Problems in Subtraction Using Whole Numbers: With and Without Renaming				√
	6. Multiplication as Repeated Addition			√	
	7. Multiplication Using Arrays			√	
	8. Multiplication and Division Facts Through 9 x 9				√
	9. Multiplying Numbers with at Least Two Digits by One Digit				√
	10. Solving Multiplication Problems				√
	11. The Meaning of Division		√		
	12. Relationship Between Multiplication and Division				√
	13. Division as Repeated Subtraction				√
	14. Multiplying Numbers Up to 9 999 by a One-Digit Number				√
	15. Dividing Numbers Up to 9 999 by a One-Digit Number				√
	16. Measurements in Compound Units				√
	17. Multiplying and Dividing Tens, Hundreds, and Thousands				√
Measurement	1. Time to The Nearest Five Minutes			√	
	2. Events Taking The Same Amount of Time, More, or Less Time				
	3. Vocabulary for Time		√		√
	4. Equivalent Periods of Time				
	5. Calendar Identifying Specific Dates				√
	6. Elapsed Time				√
	7. Converting Between Units of Time				√
	8. Recording Temperatures				√
	9. Measuring Length Metres, Decimetres Centimetres			√	
	10. Perimeter of Polygons: Standard and Non Standard Measurements			√	
	11. Finding Area of Shapes: Non-Standard and Standard Measurements			√	

**MINISTRY OF EDUCATION
PRIMARY SCHOOL MATHEMATICS CURRICULUM
TOPIC PACING GUIDE
GRADE: 3**

STRAND	TOPICS	DURATION				
		1 Day		2 Days	1 Week	2 Weeks
Measurement	12. Measuring Capacity: Litres and Millilitres 13. Estimating and Measuring Mass: Grams and Kilograms 14. Converting Units Within Systems Using Multiplication 15. Make Change for Purchase of \$20.00 or Less	35 min	60 min			
				√		
				√		
					√	
					√	
Geometry	1. Common Shapes (Plane and Solid) Line Segments 2. Points, Lines, and Using Rulers and Straight Edges 3. Lines of Symmetry 4. Slides, Flips, and Turns		√			
				√		
					√	
					√	
Statistics and Probability	1. Recording and Interpreting Data 2. Parts of a Graph 3. Data Representation Including Range and Mode 4. Analyzing and Drawing Conclusions From Graphs 5. Using Terms: Possible, Impossible, Always, and Sometimes			√		
				√		
					√	
					√	
				√		

The background of the slide features a light blue sky with several stylized birds in flight. The birds are depicted in white and light blue, with their wings spread, creating a sense of movement and openness.

Scope of Work

Primary School Mathematics

Grade 1

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

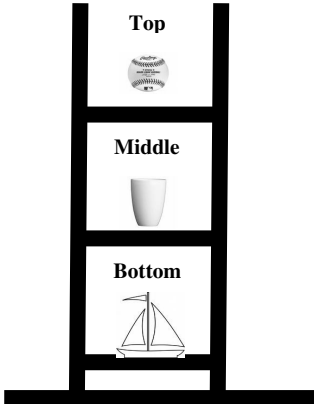
Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

Essential Questions

1. What are some different ways we can group (sort, classify) objects?
2. How can I order a set of numbers from greatest to least?
3. How do we use numbers everyday?
4. How do you predict what might come next in a pattern?
5. What is a fraction?

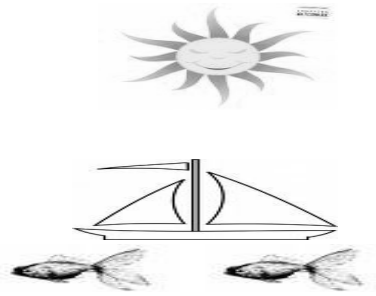
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. (a) Use positional vocabulary words (eg. Top, middle bottom, above, below, over, under, up, down, inside and outside) to describe the location of objects (Continued). b. Assemble Objects using positional vocabulary words (e.g. top...)	 ▪ Top: The upper most part or point of something. ▪ Middle: The centre of something. Equal distance from the ends or outer edges of something e.g. the middle finger. ▪ Bottom: the deepest or lowest part. For example, The bottom of a well; the bottom of the page.	• Display a large picture of a tree with the roots showing. Have students point to and identify the top, middle and bottom of a tree. • Cover a bulletin board. Draw a horizontal, squiggly line across the middle of the paper to represent the surface of the ocean. Ask students to create a class mural showing what is above the water and what is below the water. • Take the students outside for a walk. Have student look up and down, and then describe what they see.	• Silver Burdett Ginn Mathematics Level K • Manipulatives • Harcourt Math Bk. K pg. 1-12	• Have students draw pictures on a sheet using positional words. For example, draw a dog under a chair.

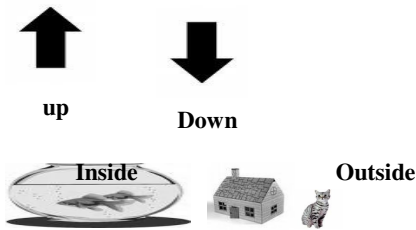
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. (a) Use positional vocabulary words (eg. Top, middle bottom, above, below, over, under, up, down, inside and outside) to describe the location of objects (b) Assemble objects using positional vocabulary words (E.g. top...) Continued.	Above  Below • The fish are under the boat and the sun is over the boat. • Above: Higher than; on or over the upper surface; over • Below: under or lower in place. • Over: In or at a position above or higher than; gliding over the sea grape tree. Over  On Under			

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. (a) Use positional vocabulary words (eg. Top, middle bottom, above, below, over, under, up, down, inside and outside) to describe the location of objects (b) Assemble Objects using positional vocabulary words (E.g. top...)	• On: The top of the surface E.g. The link cube is on the table. • Under: in a lower position or place than. E.g. The roach is under the picture.  • Up: In a higher position or level. • Down: Being or moving lower in position • Inside: The part of lying within; An interior or internal part of place • Outside: In the open air rather than inside a building.			
2. Sort and classify concrete objects according to the attributes of size, color, texture, shape and mass (Continued).	• Items/objects can be grouped or classified according to their size, shape, color, texture and mass.	• Give students assorted cereals and crackers in different shapes and sizes and a paper plate divided into three sections.	• Harcourt Math Bk. K pg. 5A • Harcourt Math Bk. 1 pg. 213	• Sort attribute blocks by color, shape, and/ or size.

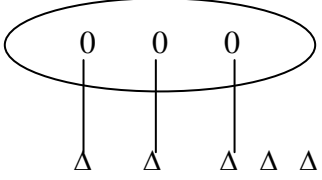
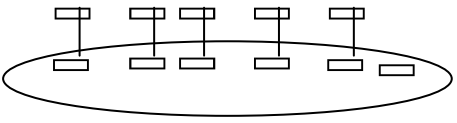
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2. Sort and classify concrete objects according to the attributes of size, color, texture, shape, and mass.		In groups, have children sort snacks by color, shape, or size onto the paper plates. Students tell how they sorted their snacks.	- Silver Burdett Ginn Mathematics Level K - Link cubes - Attribute blocks	
3. Read, write and recite number sequences through 100.	- Introduce numbers from 0 to 100. - Introduce number words zero to twenty. - Have students place numbers in sequences from greatest to least and from least to greatest. Eg. 15, 29, 9, 100, 89 Answer: 9, 15, 29, 89, 100	- Have students count classroom objects up to 100, such as counters or other manipulatives. - Take students on a nature walk. Have them draw small pictures of what they observe, like trees, grass, and bugs. Number the pictures for the class and display them in order. Take students on additional walks, until the class has recorded 100 observations	- www.harcourtschool.com - Harcourt Math Bk. K pgs. 139-152 - Silver Burdett Ginn Bk. K.	Have students put numbers in numerical order.
4. Name the number before or after a given number and justify the response.	- The number before means the number in front of. The number before is less than the number after it. For example: 41 is before 42 - The number after: Following in time or place. The number after is greater than the number before. For example: 45 is after 44.	Number tags consecutively and give one to each child. Have children wear the tags and arrange themselves in numerical order. Then give children oral directions that include actions, numbers, and the words before or after. For example, “If you have the number after 26 jump up and down.”	- Harcourt Math Bk.1 pg. 149 - Hundred Chart - Number Flash Cards	Fill in missing numbers in a sequence.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
5. Identify, explain and create sets containing 0 - 20 members.	- A set is a collection of objects - When students count, they name each number and must point to one and only one object. - The last number named tells how many are in the counted group. Sets 0 to 20	- Have students make number books showing sets of zero to twenty objects. - Distribute up to twenty beads and yarn or string to each student. Have students select a favorite number 10 to 20 and make a necklace. Have students count the beads on each other's necklaces.	- Harcourt Math Bks. K pgs. 139-148 - Silver Burdett Ginn Mathematics Bk. K	Match numeral cards with its corresponding set cards 0 to 20.
6. Match, identify, and explain objects in sets (one- to- one) to identify sets that are more, less or equal to (Continued).	Less: smaller in quantity or amount  More: greater in quantity or amount 	- Have students find, cut, and past pictures from magazines that show groups of objects. Ask them to draw more objects next to each picture. (Use more, less and/or equal to). - Have students draw a flower with up to five petals. Then have pairs switch drawings and draw a different flower on another paper with the same number of petals as their partner's flower.	- Harcourt Math Bk. K - Silver Burdett Ginn Bk. K pg. 1	Match objects in two groups using one –to- one correspondence to determine if the group has more, less or equal.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
6. Match, identify, and explain objects in sets (one- to- one) to identify sets that are more, less or equal to.	Equal to: alike/same in quantity or amount. E.g. $\begin{array}{c} \Delta \\ \\ 0 \end{array} \quad \begin{array}{c} \Delta \\ \\ 0 \end{array} \quad \begin{array}{c} \Delta \\ \\ 0 \end{array}$			
7. Identify and explain ordinal positions first through tenth.	Ordinals: Numbers used to show the relative position of somebody or something in a sequence, e.g. "first," "sixth," or "10th"	- Use ordinals as a part of daily class routines such the first child in the line may open the door." - Label beanbags with ordinals first through tenth. Arrange them on the playground. Give students directions using ordinal words and actions, such as "Run to third base" .When all bases are filled, allow students to say the ordinals in sequence.	- Harcourt Math Bk.1 pg. 159 - Silver Burdett Ginn Mathematics Bk. 1 pg. 27	Give student a worksheet with pictures of objects lined up. Ask them to "color the sixth item" In the next row "color the second object," etc.
8. Explain and represent a number as the sum of 2 addends.	Expressions must be understood as single quantities. For example 4+2 is another way of writing 6. Other ways of writing 6: $1 + 5 = 6$ $4 + 2 = 6$ $3 + 3 = 6$ $5 + 1 = 6$ $2 + 4 = 6$ $0 + 6 = 6$ $6 + 0 = 6$	- Give each student a recording sheet and 10 counters or any other numbers you want to work with. - Have students record all the possible ways to show 10 on their sheets. Then write the number sentence of all the possible addends to make ten.	- Harcourt Math Bk. 1 pg. 19 - Manipulatives - www.edhelper.com	Have students write number sentences.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
9. Explain and represent numbers as groups of tens and ones.	Ten: one more than 9 1 ten   1 ones 10 ones = 1 ten - The positions of digits in numbers determine their value.	- Use link cubes to regroup single ones into groups of ten. - Give students in groups cubes or base ten blocks. Call out a number to the class such as 25. Have students show it as 2 groups of 10 and 5 ones.	- Harcourt Math Bk. 1 pg. 129 - Silver Burdett Ginn Bk.1 pgs. 165-172 - www.edhelper.com - Link cubes - Base ten cubes	Model numbers using connecting cubes or place value models.
10. Identify, explain, and write the fractions $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{3}$ as part of a whole.	- One half ($\frac{1}{2}$). One out of two equal parts of a whole or group.  $\frac{1}{2}$ is shaded - One fourth, ($\frac{1}{4}$). One of four equal parts of a whole or group.  $\frac{1}{4}$ is shaded	- Give students paper shapes. In pairs have students divide and cut shapes into halves fourth and thirds. - Find a basic recipe for making paste, punch, and cookies etc that use $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$ cup, teaspoon or tablespoons. Use measuring cups and spoons. - Allow student to prepare the recipe. During the measuring, discuss the units being used as part of a whole cup or spoon.	- Harcourt Math Bk. 1 pg. 351-357 - Silver Burdett Ginn Bk. 1 pgs.- 151-154 - www.mathslice.com - Fractional cutouts of $\frac{1}{4}$, $\frac{1}{3}$. and $\frac{1}{2}$	Name fractional parts ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$) of a whole.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT				
10. Identify, explain, and write the fractions 1/2, 1/4, and 1/3 as part of a whole (Continued).	One third (1/3). One of three equal parts of a whole or group is shaded.							
11. Identify the place value of each digit in a two digit number.	- The position of the digits in a number determine their values; for example 73 = 7 tens + 3 ones. - In place value, each position has a value ten times greater than the position to its right. 27 = 2 tens + 7 ones or 7 ones is first place on the right. <table><tr><td>Tens</td><td>Ones</td></tr><tr><td>2</td><td>7</td></tr></table>	Tens	Ones	2	7	- Have students take a handful of pennies, count them, then use base-ten blocks to show how many they have. Students can record the number. - Shuffle cards with numbers 10 to 99. Have one child pick a card and state the value of each digit of the number selected.	- Connecting cubes - Base ten blocks - www.harcourtschool.com - Silver Burdett Ginn Mathematics Bk. 1 - Harcourt Math Bk. 1 pgs. 129-134 - Place Value Mats	Have students work in pairs. Have them flip to a page in the middle of their reading textbooks. Children record the page number as tens and ones on a place value mat and using base ten blocks.
Tens	Ones							
2	7							
12. Explain the role of the numerator and denominator in fractions.	Numerator: the number above the bar of a fraction. It is the number that is to be taken, given, left, or closed. For example 1/4 - 1 is the numerator. It means 1 equal part out of four equal parts of the whole. Denominator: the number below the bar in a fraction. For example 1/4 : 4 is the denominator. It tells how many equal parts the whole was shared into.	Have students play a card game in which they match the fraction names to pictures representing the fractions.	- Harcourt Math Bk.1 pg. 355 - Fraction bars	- Distinguish between 1/4, 1/2 and 1/3 - Identify the numerator and denominator in given fractions. E.g. 1/4 ; 1/2 ; and 1/3.				

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 1

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
13. Explain the concept of addition and subtraction through words, pictures, or with concrete objects.	Addition is joining two or more objects/ elements to obtain a total/result. Subtraction is taking away one or more objects from a group of objects.	Demonstrate addition and subtraction story problems using flannel boards or concrete objects.	- Harcourt Math Bk.1 pgs 3-8 ; 31-34 - Counters	Have students write and solve their own story problems using pictures.
14. Justify solutions to a problem.	Justify: Prove that the answer is right. - Problem solving strategies. a. Make a model - solving problems with concrete objects. b. Draw a picture creating their own representations that can help them find answers. c. Act it out – dramatize situations	Have students work in small groups to solve story problems.	- Silver Burdett Ginn Bk. 1 pgs. 83A & 83 - Harcourt Math Bk. 1 pg. 201	Complete activity sheet with story problems.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, AND ALGEBRA
GRADE: 1

Sub-Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

Essential Questions

1. What patterns do you see every day?
2. How do you predict what might come next in a pattern?
3. How is skip counting related to patterns?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, AND ALGEBRA
GRADE: 1

Sub-Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Identify, produce, describe and extend patterns using pictures, shapes and numbers.	In patterns, shapes, colors, or numbers are repeated so that you can predict what comes next.	Provide small groups with nature magazines. Have students find examples of patterns in nature. For example patterns on the fur of animals (zebra).	- Harcourt Math Bk. K pgs. 25, 319 - link cubes - magazines - Silver Burdett Ginn Mathematics Bk. K pg. 25 - www.edhelper.com - Cut out shapes	Have students create patterns.
2. Translate patterns from one medium to another.	Translate: Representing the same pattern in a different way. For example colors to numbers and shapes to rhythms. For example: Pictures to Numbers 	- Post examples of different patterns. Ask students to choose a pattern and translate it into a different representation. - Collect work and display patterns.	- Harcourt Math Bk. 1 pg. 31B - Link cubes	Have students create patterns where they translate from one medium to another.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, AND ALGEBRA
GRADE: 1

Sub-Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Skip count to 100 by 2s, 5s and 10s, and explain the patterns	- When you skip count, you get to a total faster by passing over numbers. Counting by 2s: 2, 4, 6, 8, 10, 12..... - Every other number is counted when counting by twos. Counting by 5s: 5, 10, 15, 20, 25..... - When counting by 5s it is important to note that the numbers end with 0 or 5. Counting by 10s: 10, 20, 30, 40, 50... - When counting by 10s, the numbers end with 0	- Make a number line to 50 on the floor. Students stand on the line at intervals of 2 and skip count by twos. Repeat with intervals of 5 and 10. - Give each student a one hundred chart. Skip count by 2s (or 5s or 10s) aloud. - Create and share several counting rhymes with the class. Encourage students to create their own skip counting rhymes. For example: 2, 4, 6, 8. What do we appreciate? 0, 12, 14, 16. All that's fair and good and clean."	- Harcourt Math Bk. 1 pg. 163 - Silver Burdett Ginn Mathematics Bk. 1 pgs. 187 & 188	Have students color patterns (Counting by 2s, 5s or 10s) on a hundred charts.

**SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION**

GRADE: 1

Sub-Goal 3: Estimate and understand the meaning, use and connection between the four (4) basic operations of additions, subtraction, division and multiplication.

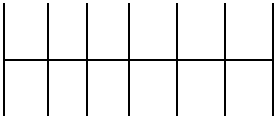
Essential Questions

1. How can you find the missing number in an addition equation?
2. What strategies help us solve addition and subtraction word problems?
3. How can you create a story to match an addition or subtraction equation?
4. What are fact families and how do they help us add and subtract?
5. How do fact families help us with addition and subtraction facts?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION

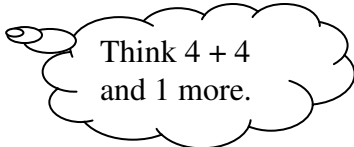
GRADE: 1

Sub-Goal 3: Estimate and understand the meaning, use and connection between the four (4) basic operations; additions, subtraction, division and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Explain and use an appropriate strategy to determine the answer to a given fact (Continued).	• In all: total quantity or amount. • Sum: the answer to an addition problem. • Plus (+): a symbol that shows addition. • Equal (=) has the same value. • Addition sentence: A number sentence used to show addition. • Addends: the numbers to be added. E.g. $1 + 4 = 5$ • Addition: the process of joining two groups. • <u>Addition Strategies.</u> a. Count on: Mental strategy used when an addend is 1, 2, or 3. $6 + 2 = 8$ Say 6. Count on 2 6 7 8 b. Doubles: Two addends that are the same. $2 + 2 = 4$	• Distribute counters to pairs of students. Have each pair line up and place 2 to 6 counters on a table. Have one child in the pair say the number of counters in the set and then count on to add 1 or 2. Direct the second student to check the sum. Repeat the activity several times, while students exchange roles. • Place a number line across the classroom floor. Give students short story problem such as: Tom has 5 toys cars. Dad gives him 1 more. How many toy cars does he have in all? e.g.  0 1 2 3 4 5 6 • Have student say the greater addend and stand on that number using addition facts. He/she should count on aloud, take 1, 2 or 3 steps on the number line, and give the sum.	• Harcourt Math Bk. 1 pgs. 64 & 92 • Silver Burdett Ginn Mathematics Bk. 1 pgs. 97-115 • www.mathslice.com • www.themathworksheetsite.com • connecting cubes	• Have students show, in their Mathematics Journals, the ways to find the sum of two numbers.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 1

Sub-Goal 3: Estimate and understand the meaning, use and connection between the four (4) basic operations; additions, subtraction, division and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Explain and use an appropriate strategy to determine the answer to a given fact.	c. Doubles Plus One: An addition fact in which one addend is one greater than the other. $4 + 4 = 8$  Think 4 + 4 and 1 more. $4 + 5 = 9$ d. Make a Ten: add onto one addend to make a ten and then add the rest. Subtraction Strategy a. Count Back: Mental math strategy used when the number to be subtracted is 1, 2 or 3.	For example $4 + 2 = \underline{\quad}$ The sum is 6. - On a drum or tambourine make a series of identical sounds, such as 5 beats. Ask students to listen carefully and produce the double of the set of sounds heard by clapping. Have students write the addition sentence that shows how many sounds in all; for example $5 + 5 = 10$. - Sing songs such as “Ten little Monkey Jumping in the bed”. Students will use appropriate strategy to solve the problem.		

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 1

Sub-Goal 3: Estimate and understand the meaning, use and connection between the four (4) basic operations; additions, subtraction, division and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2. Recall addition and subtraction facts up to 20.	Order property: Numbers can be added in any order. The order of the addends does not affect the sum. e.g. $2 + 3 = 5$ $3 + 2 = 5$ Subtraction Facts $7 - 1 = 6$ $4 - 3 = 1$	Fact Feud - Divide the class into teams. - Randomly select addition/subtraction fact cards. - Read the fact card aloud. - Allow the first player who hits the ball to give the answer. If the player answers correctly, he/she moves to the back of the line. The child on the other team sits down. - Continue until all the students are seated. The group with the last student to be seated wins.	- Harcourt Math Bk.1 pgs. 16 & 399 - Silver Burdett Ginn Mathematics Bk. 1 pg. 1 - www.edhelper.com - www.mathslice.com	Quiz
3. Identify and solve fact families.	- A fact family is group of numbers that can be added or subtracted to get another number in the fact family. - There are only three numbers in each family. e.g. 5, 8, 13 $8 + 5 = 13$ $5 + 8 = 13$ $13 - 8 = 5$ $13 - 5 = 8$	Fact Family Mobile Have small groups make fact family mobiles to tell about members of a household. For example: One group might use the fact 3, 2, 5, to show the number of children and adult. - Write the facts on an index card $3 + 2 = 5$, $2 + 3 = 5$, $5 - 3 = 2$, $5 - 2 = 3$ and tape it to the hanger.	- Harcourt Math Bk. 1 pgs. 97, 113, 119 - Silver Burdett Ginn Mathematics Bk.1 - www.edhelper.com	Interviews: Students ask classmates questions on fact family. e.g. How many addition sentences make up a fact family?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 1

Sub-Goal 3: Estimate and understand the meaning, use and connection between the four (4) basic operations; additions, subtraction, division and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Use mental arithmetic	- Use mental mathematics strategies like: - Using doubles - Making ten - One more, one less	Have pairs of students write addition or subtraction sentences on index cards. Partners exchange cards and write the answer to the number sentence on the back of each card.	enVisionMath Bk.1	Quiz
5. Estimate “how many” and “how much” in a given set up to 20.	Estimation: Finding a value that is close enough to the right answer, usually with some thought or calculation involved.	Pumpkin Estimation - Teacher shows a pumpkin and asks students in cooperative groups to guess how many seeds are inside. - After discussing with students write the estimated amount on a card. - Teacher cuts pumpkin and asks a student to count the seeds. The team that has the closest estimate is the winner. Member from group explains how the estimation was done.	Harcourt Math Glossary	Activity sheet on Estimation.
6. Identify whether estimation or counting is appropriate with support.	- Estimating is appropriate when: - an exact value is impossible or impractical to obtain (e.g., the number of stars in our galaxy). - an approximate value is adequate (e.g., the number of people who will attend a party).	Give students scenarios where they will state whether they will use counting or estimation to get the answer.	www.teachervision.fen.com	Have students write scenarios and solve the problems indicating whether estimation or counting was used.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 1

Sub-Goal 3: Estimate and understand the meaning, use and connection between the four (4) basic operations; additions, subtraction, division and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
7. Create and solve addition and subtraction problems using whole numbers and estimation.	- The words in all and altogether are associated with addition. - Not because the words “in all” and “altogether” are used you always add. The context in which the words are used determine the operation. This holds true for words used in subtraction. - Addition is required when the answer should be more. - The words ‘left’ and ‘many more than’ are associated with subtraction. Subtraction is required if the answer should be less. - Problem Solving Strategies - Act it out - Write a number sentence - Make a model - Draw a picture.	- Have children act out addition or subtraction stories as you read them aloud. Then have volunteers write number sentences that describe what happened. - Give small groups 10 one-cent coins. Have students create original stories using the coins. Children model each other’s stories.	- Harcourt Math Bk. 1 pgs. 37, 73, 47, 90, 95 - Silver Burdett Ginn Mathematics Bk.1 pgs. 53, 79, 109	Create and solve addition problems in portfolios.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 1

Sub-Goal 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

Essential Questions

1. What is measurement?
2. How do we use measurement every day?
3. Why do we measure things?
4. Can everything be measured?
5. How did people measure things before there were rulers?
6. How would you know when to come to school if there were no clocks?
7. What are some non-standard units you could use to measure something?
8. How do we measure time?
9. How many minutes are in an hour?
10. How many hours are in a day?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 1

Sub-Goal 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Compare the lengths and heights of two objects by matching, using the words as long as, tall as, longer than, and shorter.	- To compare the length or height of objects, their ends must be aligned. As long as: Means the objects are the same length and their ends start and stop at the same place. As tall as: Having the same height. Longer than: Having a greater length or distance. Example: 	- Have students compare the lengths/ heights of objects. - Take students outside at different times of the day to observe their shadows. Put them to work in groups of threes to cut strings the same length as each their shadows. Discuss how shadows change during the day.	- Harcourt Math, Bk.K. pg. 181 - Silver Burdett Ginn Mathematics Bk. K - Math Blaster Jr. ‘Grow Worms’	Have students determine which of two objects are longer, shorter or the same length.
2. Compare the lengths/ heights of objects with non- standard units.	Non- standard units are laid end to end along the length of an object.	Have students make cube trains or paperclip chains to measure their feet, the length of their arms from wrist to elbow, and the length of their legs from knee to ankle. Then have students work in groups to compare their trains or chains to see who has the largest foot, longest leg and so on.	- Harcourt Math Bk. K. pg. 187 - Harcourt Math Bk. 1 pg. 329	Have students use non- standard units and compare the lengths and heights of objects.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 1

Sub-Goal 4: Make and measurements of objects, quantities, and relationships and determine and acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Estimate the length of given objects using standard and non-standard units.	• Estimate: A rough calculation of the number of units to be used without measuring. • About is used in estimation as the measurement is not exact.	The Suspects • Line up a group of “suspects” (stuffed animals, dolls, puppets). Using non standard and standard measurements have students guess who ate the candy. • Give a clue such as “The candy eater is about four snap cubes long.” Have students eliminate certain suspects based on the clue. and have them guess who ate the candy.	• Harcourt Math Bk. K pg. 189 • Harcourt Math Bk. 1 pgs. 331, 333 • Silver Burdett Ginn Bk.1 pg. 287 • www.themathworksheet site .com	• Guess and measure the lengths of object.
4. Measure the lengths and heights using standard units (metre, centimetre).	• Measurement involves comparison. • The metre and centimetre are standard units of measure. • The centimeter is smaller than the metre. • Also use customary unit of measurement (feet and inches) • When using the ruler, the left end of the ruler must be aligned with the left end of the object:	• Have students’ measure parts of their bodies in centimeters and inches. • Have students measure various distance in the classroom and around the school in metres.	• Harcourt Math Bk. 1 pg. 333	• Have students measure specified objects in either metre or centimetres or inches.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 1

Sub-Goal 4: Make and measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT				
5. Compare the mass of two objects using terms such as heavy or light as; heavier as or lighter than; more or less than; and same as other objects.	• Heavier than: having more weight. • Lighter than: having less weight.	• Brainstorm for objects that are light such as a cotton ball, balloon, flower, and bubble. Heavy objects such as a concrete block and a filled 5 gallon bottle of water. Go around the circle and have students complete the sentence” A cotton ball is as light as a _____.” Repeat with, A concrete block is as heavy as a _____” • Have students compare a variety of objects and have them tell which of two objects is heavier or lighter.	• Harcourt Math Bk. K pg. 193	• Have students tell which of two objects is lighter than or heavier than a given object.				
6. Identify things that are hot/cold and justify responses	• Hot: having a high temperature. • Cold: having a low temperature.	• Read stories to students and ask them if the temperature in the story is hot or cold depending on the clothes, the people are wearing. • Have students create a class bar graph or pictograph of their favorite hot /cold foods.	• Silver Burdett Ginn Mathematics Level K	• Students Sort appliances into two groups – hot and cold. e.g.<table><tr><th>Hot</th><th>Cold</th></tr><tr><td>Stove microwave</td><td>Refrigerator Air conditioner</td></tr></table>	Hot	Cold	Stove microwave	Refrigerator Air conditioner
Hot	Cold							
Stove microwave	Refrigerator Air conditioner							
7. Compare surface using common objects to determine equality of areas.	• Area is the amount of square units that can cover a figure.	• Have students cover surface with similar shapes of the same size. For example, students’ measure to find out how many matchboxes will cover a desktop. • Have students trace their hands and cover the outline with beans. Have students compare the beans in the hand prints to find out which has more, less or equal.	• Camelot Learning: Number and Number Sense • Tiles	• Have students find areas of shapes by using tiles.				

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 1

Sub-Goal 4: Make and measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
8. Relate events to the appropriate time of the day in which they occur.	• Morning: The early part of the day. For example: When the sun rises. • Evening: When the sun sets. It is dark. • Mid-day: The middle of the day.	• Have students act out something they do in the morning, afternoon, or at night. The rest of the group will guess the time of day. • Have students sing familiar day or night rhymes and songs such as: “Twinkle, twinkle little star!”	• www.harcourtschool.com • Silver Burdett Ginn Mathematics Bk. K • Harcourt Math Bk. K pg. 203	• Have students create a booklet of pictures showing day and night activities.
9. Make associations among months, days, and weeks on the calendar.	• Day: a period of time that is equal to 24 hours. • Week: a period of time that is equal to 7 days. • Month: a period of time that is equal to 28, 29, 30, or 31 days.	• Have students make weekly charts by writing the days of the week on a sheet of construction paper. Then have them write or draw a picture under each day telling or showing what they did or plan to do for that week.	• Harcourt Math Bk. 1 pg. 267	• Create graphic organizer showing relationship among days, weeks, and months of the year.
10. Name the months of the year in order.	• There are twelve months in a year. • January is the first month of the year. • December is the last month of the year. • The months of the year are January, February, March, April, May, June, July, August, September, October, November, and December.	• Sing songs and rhymes that order the months of the year. • Make a set of cards with the months of the year. Let students work in pairs to arrange them in order	• www.harcourtschool.com • Harcourt Math Bk.1 pg. 167	• Recite the months of the year in the correct order.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 1

Sub-Goal 4: Make and measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
11. Tell time to the hour and half-hour on a standard (analog) clock.	• Minute hand: the longer hand on an analog clock that indicates minutes. • Hour hand: the shorter hand on an analog clock that indicates the hour. • O'clock: of or according to the clock. • Minute: a unit of time that is equal to sixty seconds. • Hour: a unit of time equal to sixty minutes. • Half hour: a unit of time that is equal to thirty minutes. • To tell time on the hour, the minute hand is on 12, while the hour hand points to the hour. • For times to the half hour, the minute hand is on 6 and the hour hand is halfway between those hours.	• Have students make clocks out of milk cartons, gift boxes, paper plates or construction paper. • Have students recite nursery rhymes that tell about time such as ‘Hickory Dickory Dock’, ‘Wee Willie Winkie, and “A Dillard, A Dollar”’	• Silver Burdette Ginn Mathematics Bk. K pgs. 259, 261 • Harcourt Math Bk. K pgs. 209 & 210 • Harcourt Math Bk.1 pgs. 257-260 • www.mathslice.com • www.edhelper.com	• Have student tell the times, on the hour or the half, that are on a standard clock.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 1

Sub-Goal 4: Make and measurements of objects quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
12. Identify and count coins up to 25 cents in both Bahamian and US currencies.	Bahamian coins  Count 1¢ coins by ones Count 5¢ coins by fives Count 10¢ coins by tens	Come to the Shop Set up a shop in the classroom of food containers, with price tags up to 25¢. Let a few volunteers act as storekeepers. Have other students purchase items.	- www.schoolhousetech.com - Harcourt Math Bk. K pgs. 167-172 - Silver Burdett Ginn Mathematics Levels K and 1	Have students name both Bahamian and U.S. coins.
13. Find the equivalent of other coins values in pennies.	- Five 1¢ or pennies are equivalent to 5¢ or a nickel.  - Ten 1¢ or pennies are equivalent to 10¢ or a dime	Have partners take turns rolling the amount of number cubes and taking those 1¢ coin/pennies. When a partner accumulates five 1¢ coins, he/she places the pennies in a paper cup bank and exchanges the 1¢ coins for a 5¢ coin. Children can exchange 1¢ coins for 5¢ coins only during their turn. After 5 rolls, each student counts to see who has more five cents.	Harcourt Math Bk. 1 pg. 246	Exchange the correct number of 1¢ coins for a 5¢, 10¢ or 25¢ coin.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 1

Sub-Goal 4: Make and measurements of objectives, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
14. Identify money value through exchange.	• Exchange means to provide and receive goods of approximately equal value in return. • Skip count to determine the value of a group of coins. • Skip count by tens when counting 10¢. • Skip count by fives when counting 5¢ • Count 1¢ by ones	• Obtain several seed packets and put a few seeds in a plastic sandwich bags. Attach price tags to the seeds bags. Let students purchase the seeds with 1¢, 5¢, 10¢ and 25¢ coins. Have students plant the seeds in plastic cups.	• Harcourt Math Bk. 1 pg. 244 • Silver Burdett Ginn Mathematics Bk.1 pgs. 205 & 207	• Have students give the correct value of coins to purchase items from the class shop.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 1

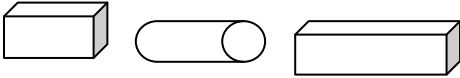
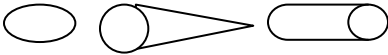
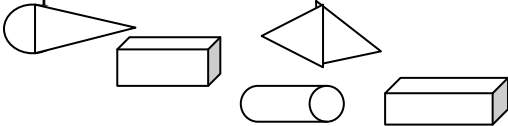
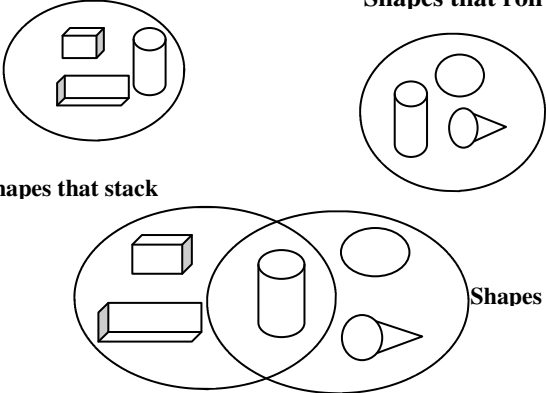
Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes and space.

Essential Questions

1. Where can geometric shapes be found in our surroundings?
2. What is the difference between a square and a triangle?
3. Why are attributes important in identifying geometric shapes and figures?

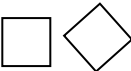
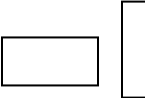
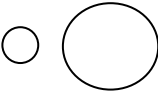
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 1

Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Sort and classify shapes according to attributes with and without the use of a Venn diagram.	Classify: To categorize things in class. - Shapes that can stack  - Shapes that can roll  - Shapes that can slide  - Objects that stack and roll. E.g. Venn Diagram Shapes that stack  Shapes that roll	Game: What am I? - Have students in small groups sort a collection of shapes. - Give each group a solid shape. Have each group identify the attributes the shape has such as rolling, stacking and / or sliding. - Have all groups hide their shapes. A group member calls out the attributes of the shape, and ask classmates to guess the shape. For examples: “It rolls, slides, and stacks. What am I?” A cylinder.	- Harcourt Math Bk. K pg. 117A - Harcourt Math Bk. 1 pg. 289	Use sorting mats and plane shape cut- outs. Have students arrange the shapes into their correct columns.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 1

Sub-Goal 5: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2. Identify by naming, drawing and describing, triangles squares, rectangles and circles in different orientations (Continued).	• Triangles have three sides and three corners.  • Squares have four sides that are all equal.  • Rectangle: Squares and rectangles have four sides and four corners.  • Circles are round and do not have sides and corners. 	GUESS MY SHAPE a. Gather and display flat shapes and pictures of several national flags. b. Ask students to identify the shape of each flag as well as the shapes on the flags.    • In small groups, have students use flat shapes to design their own flags. • Have students create riddles about shapes. For example, “I have no sides and no corner. What am I” (a circle). • Have students make collages using geometric shapes cut from construction paper. • Have each child create a rectangle book by cutting out pictures of rectangular shapes from old magazines and gluing them in the book. Repeat for other shapes.	• Silver Burdett Gin Mathematics Bk.1 pgs. 135 &136 • Harcourt Math Bk. 1 pgs. 119, 295	• Complete activity sheet matching shapes that are alike in different orientations.

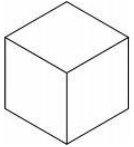
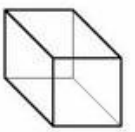
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE 1

Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2. Identify by naming, drawing, and describing, triangles squares, rectangles and circles in different orientations.		- Go on a shape hunt throughout the classroom or playground. - Teacher demonstrates by holding a large triangle and asks, “Is this a triangle?” When all students agree, she turns it around and asks the question again. Continue with this exercise until students understand that orientation does not change the name of the shape. - Hold up a triangle. - Ask students to identify the shape. - Turn shape in another direction and ask its name. - Continue to change direction of shape so students understand that orientation does not change the name of the shape. - Give students toothpicks and clay to form flat shapes.		

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE 1

Sub-Goal 5: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Identify and describe basic solid shapes such as cones, cubes, rectangular prism, spheres, and cylinders	- A cube is a regular solid with six equal faces.  A cube - A rectangular prism is a three dimensional shape which has six faces that are rectangular.  - A cone is solid (3 dimensional) shape that has a circular base and one vertex (a point where two or more straight lines meet; corner)	- Have students match the flat shapes with its name card. - Have students use small boxes, styrofoam balls, cones, paper rolls, drinking straws, pipe cleaners, crayons and glue to make solid shape creatures. Have students create stories about their creatures. - Have students create patterns with solid shapes. - Play shapes in action. Distribute solid shapes to students and discuss their properties. Have students familiarize themselves with the solid shapes through song and dance. Song: Dance Around to “London Bridge” Shapes, shapes, dance around, dance around, dance around. Shapes, shapes, dance around, now settle down. All cylinders dance around, dance around, dance around (repeat) Now settle down. (Use all shapes)	- Harcourt Math Bk. K pg. 115 - Harcourt Math Bk.1 pg. 287 - Silver Burdett Ginn Mathematics Bk. 1 pgs. 131 & 132	Create a scrape book of shapes identifying and describing them.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 1

Sub-Goal 5: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
	 - A cylinder is a solid shape with two identical flat circular ends and one curved side.  A cylinder - A pyramid is a solid shape where the sides are triangular which meet at the top and the base is a polygon.  - A sphere is a solid bounded by a surface consisting of all points at a given distance from a point in its centre. E.g. globe, ball 	Nature walk: Take students into the environment and have them find and draw solid shapes - Make models of solid shapes using clay and toothpicks. “It is in a Bag: Have students work in small groups. Give each group a box with all of the solid shapes. Have students reach into the box, feel a shape, describe it, and match the shape with its name.		

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 1

Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability.

Essential Questions

1. How does a graph give information without many words?
2. Why is it important to know when there is more, less, and equal to in situations?
3. In what real world contexts do we need to find probability?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 1

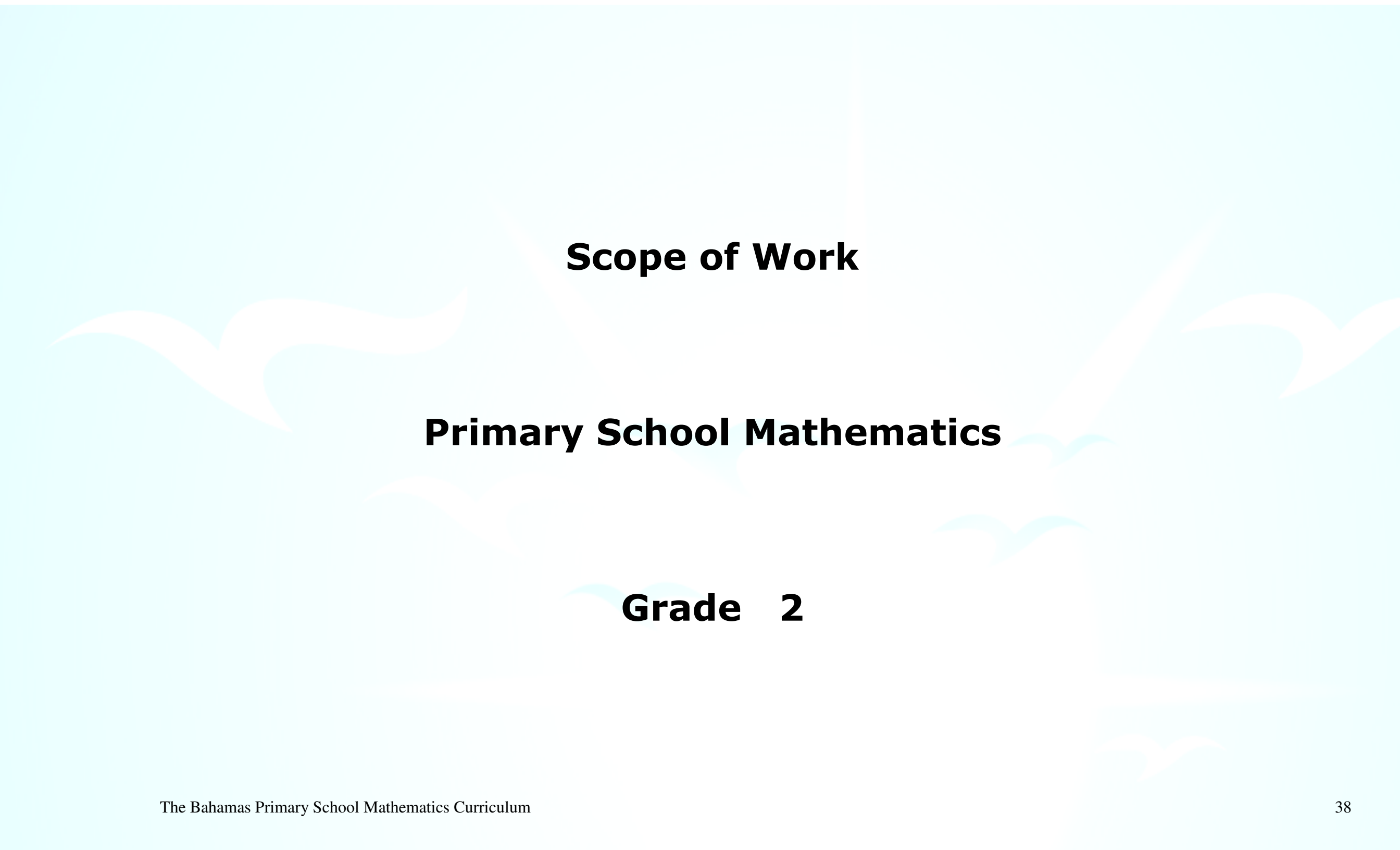
Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Collect, record, and display information on concrete graphs and pictographs.	- All graphs should be titled Pictograph is a way to represent, collect and display data. It is a kind of bar graph that uses pictures to represent the data collected. Bar graph is another way to display data. It uses rectangular bars to show information. Remember: The bars in a bar graph do not touch.	- Have students conduct survey of their classmates to find their favorite pet. Children make a Bar graph of their findings and display it. - Use pictures of the modes of transportation by students to create a pictograph.	- Harcourt Math Bk. 1, pgs. 217-224 - Silver Burdett Ginn Mathematics Bk. 1	Have student complete concrete and pictographs.
2. Interpret information displayed in a graph using the vocabulary more, less, fewer, greater than and less than.	- Bar graphs amounts can be calculated by counting the shaded boxes or using the numbers along the bottom of the graph if it is horizontal. Amounts can easily be compared by lengths of the bars. - On pictographs, information can be quickly found and compared by looking at the pictures. More/greater than: Having a greater quantity. Less/fewer/less than: Having a smaller quantity and justify responses.	- Have students draw his/her favorite toy. Have students sort/group the pictured toys by type. Have them label and title the graph. - Have students use the graph to answer the questions. For example, How many children like dolls? Do more children like cars or video games?	- Harcourt Math Bk.1 pg. 219 - Silver Burdett Ginn Mathematics Bk.1	Have students use graphs to answer questions.
3. Draw conclusions and make predictions, about graphs.	Drawing conclusions mean to use information you already know to figure out a problem. Prediction is a claim that a particular event will occur in the future in more certain terms.	Have students make a Bar graph of their favorite ice-cream flavor and have them make predictions. Questions asked: a. Which ice-cream flavor was most popular? b. Which ice-cream flavor would the tuck shop sell most to our class, why?	Harcourt Math Bk. 1 pgs. 219 & 223	Demonstrate the use of logical reasoning when drawing conclusions or making predictions.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 1

Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Draw conclusions and make predictions, about graphs. (continued)		c. What flavor would the tuck shop sell least to students in our class?		
4. Investigate and describe the results of dropping a two coloured counter or using a multicoloured spinner (Concept of chance).	• Chance is the likelihood of something happening; possibility or probability	• In groups, have students drop multicoloured spinner or counters. Ask questions related to probability such as: a. How many sections are blue? b. How many sections are red? c. How many sections are green? d. How many sections does the spinner have altogether?	• www.thefreedictionary.com	Discussion: • Students discuss results of spinning multicoloured spinner or dropping a two coloured counter.
5. Use and describe terms such as “likely” and “unlikely” to describe events/situations	• Likely means that something will happen. E.g. I will go to grade two next year. • Unlikely means that something will NOT happen. E.g. I will fly, flapping my arms	• Create situations with daily activities or stories and have students make predictions as to whether events are likely on unlikely to happen. • Ensure that students use the math vocabulary “likely and unlikely” and justify responses.	• www.thefreedictionary.com	• Complete a worksheet indicating whether events/situations are likely or unlikely to happen.



Scope of Work

Primary School Mathematics

Grade 2

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE

GRADE: 2

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

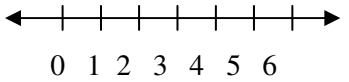
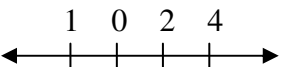
Essential Questions

1. Why are numbers important and how can you use them to solve problems?
2. How do we order two-digit numbers from greatest to least and from least to greatest?
3. How do numbers show parts of a whole or parts of a set?
4. How does the place of a digit in a number determine how much it is worth?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE

GRADE: 2

Sub-Goal 1: : Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Read and write the numbers 0 to 20 on a number line.	Number Line A line that has equally spaced points named by numbers. e.g. 	- Arrange number cards (0 to 20) on a number line in ascending order i.e. 0,1, 2, 3, ... 20 - Have students identify numbers on the number line which matches their age, the number of cookies in their lunch box, the number of windows in the classroom, etc. - Use velcro to attach numbers to the number line. Have some students close their eyes while you remove a number. Point out the secret number to the children whose eyes are opened. Have the children whose eyes were closed tell what number is missing. Do this for several numbers.	- Harcourt Math Bk. 1 Vol. 1 pgs. 171A & 172A - Math Jingles CD	- Fill in missing numbers to complete a number line. - Identify points that are incorrectly labeled on the number line? Example: 
2. Read, write, recite and use number sequences to 999 (forward and backward).	Number Sequence: The order in which numbers are said, or placed when counting. Forward Counting in ascending order. e.g. 0, 1, 2, 3,...100 Backward Counting in a descending order e.g. 100, 99, 98...	- Call and write numbers to 999, using a hundred chart initially, then subsequently by memorization. - Designate a number of the day by randomly selecting a number card from a box, and using the number in a variety of ways. e.g. locating it in text/workbooks. - Arrange a series of numbers in designated order to demonstrate sequence. E.g. 741, 739, 743, 740, 742. -Forward – 139, 140, 141, 142, -Backward – 343, 342, 341, 340, 339.	Harcourt Math Bk. 1 Volume I pgs. 161A & 162A	- Complete a hundred chart by writing the missing numbers. - Name numbers which come before, after, or between other numbers.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE

GRADE: 2

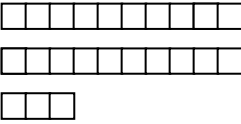
Sub-Goal 1: : Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Arrange numbers in ascending and descending order.	- Numbers are said to be in ascending order when they are arranged from the smallest to the largest number. For example: 5, 9, 13, 17 and 21 are arranged in ascending order. - Numbers are said to be in descending order when they are arranged from the largest to the smallest number. For example 25, 21, 17, 13 and 9 are arranged in descending order.	- Use number cards to tell where numbers come in relation to the position of other numbers. i.e. - before: in front of (<u>27</u>, 28) - after: following in place (632, <u>633</u>) - between: the number between two numbers (541, <u>542</u>, 543) - Place numbers in ascending and descending orders.	Harcourt Math Bk. 1 Volume I pgs. 149A & 150A	
4. Identify the positions first through twentieth using an ordered set of objects (Continued).	Ordinal Numbers - Numbers which describe the position of objects as they are related to others in an ordered group. Examples - 1 = first 1st - 2 = second 2nd - 3 = third 3rd - 4 = fourth 4th - 20 = twentieth 20th	- Identify objects on a line and use ordinal numbers to identify the positions. E.g. This butterfly is fourth on the line  - Match ordinal number words to their symbolic representatives. E.g. seventh – 7th	Harcourt Math Bk. 1 Volume 1 pgs. 159A & 160A	- Color to show the order of objects. Example: Color the second object blue.  - Use ordinal numbers to describe the positions of objects. Example: Where is the hat?  The hat is second.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE

GRADE: 2

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Identify the positions first through twentieth using an ordered set of objects.		- Identify an object that comes first, and use it as a benchmark in locating other objects. e.g.  - Take students to the playground. Have them run races in groups. Have them tell who came first, second, third, etc. Designate students to pin different colour ribbons on students according to the position they came in the race (i.e. first – red ribbon, second, green ribbon, etc.).		Identify the first person/object on a line when they are turned indifferent directions. i.e. facing – left, right, top, or bottom.
5. Describe a two-digit number in terms of tens and ones.	- Two-digit number: A number that is made up of two digits e.g. 27. - The place value of digits is read from right to left. - The first digit to the right is in the ones place. - The second digit to the left is in the tens place.	- Model tens and ones for given numbers, using base-ten blocks or cubes. e.g. 23  - Identify/name digits that represent tens and/or ones in numbers. e.g. 64 6 = 6 tens 4 = 4 ones	- Harcourt Math Bk. 1 Teacher's Edition pgs.126 – 138A - Math Jingle CD	- Tell/write numbers that represent a set number of tens and ones e.g. this number is 4 tens and 5 ones. What is it? 45 - Identify numbers which are either in the tens or ones place e.g. 38. <u>3</u> is in the tens place.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE

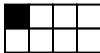
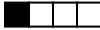
GRADE: 2

Sub-Goal 1: : Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT						
6. Identify the place value of each of a 3-digit number.	- Place Value of 3-digit numbers: The position of the digit determines its value in a number. For example 256 <table><tr><td>Hundreds</td><td>Tens</td><td>Ones</td></tr><tr><td>2</td><td>4</td><td>6</td></tr></table> - The digit 2 is in the hundreds place. The value of the 2 is 2 hundreds.	Hundreds	Tens	Ones	2	4	6	- Read/write Three – digit numbers e.g. 840 - Identify numbers with specific place values e.g. 431 - Which number is in the hundreds place? 4 a. the tens place? 3 b. the ones place? 1	- Harcourt Math Bk. 2 Vol.2 pgs. 313A-316A - Zoo Zillions Annie’s Jingle Trail	Write the place and the value of digits. For example Value <u>24</u> = 20 or 2 tens. <u>place</u> – Tens
Hundreds	Tens	Ones								
2	4	6								
7. Compare whole numbers between 0-999 using the symbols <, >, = (Continued).	Greater Than $\textcircled{>}$: A number that is more than in quantity or amount. e.g. 126 > 124 Less than $\textcircled{<}$: A number that is less than or fewer in quantity or amount. E.g. 412 < 528 Equal to $\textcircled{=}$: Numbers that are the same in quantity or amount. e.g. 52 = 52	- Select the number which is greater or less, in a given pair. e.g. greater 314 <u>412</u> less <u>296</u> 298 - Write/give numbers which are greater or less than, or equal to given numbers. e.g. 145 - greater 216, 728 - less 100, 109 - equal 145	Harcourt Math Bk. 1 Vol. 1 pgs. 143A-154A	- Demonstrate ability in reading numbers between 0-999, then comparing them as it relates to their amounts using symbols. - Identify and distinguish which numbers are greater, less than, or equal to other numbers. - Circle the larger, largest or smaller, smallest number. - Students complete an on line assessment at www.harcourtschool.com						

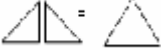
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 2

Sub-Goal 1: : Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
7. Compare whole numbers between 0-999 using the symbols , >, and =.		Use math symbol cards to compare number pairs. e.g. $714 > 322$ 714 is greater than 322 $811 < 951$ 811 is less than 951 $203 = 203$ 203 is equal to 203 and understand the relationship of the numbers to each other.		
8. Identify odd and even numbers.	Even Number: A number which represents an amount of objects that can be grouped into pairs with none left over. E.g. 2, 4, 6, 8 Odd Number: A number that represents an amount of objects that when grouped into pairs one is left over. E.g. 1, 3, 5, 9	- Using connecting cubes, make groups of two for given numbers and observe if one block is left over to distinguish the numbers as either even or odd. e.g. $20 = 0000000000$ 0000000000 20 is even $13 = 000000$ 0000000 13 is odd - Use hundreds board (chest) to shade odd and even numbers and let students discover the pattern.	- Harcourt Math Bk. 1 Vol.1: Teacher's Edition pg. 165A - Mathematics in Motion: A Resource Book for Primary Teachers, pgs. 42, 44	- Demonstrate or explain steps to find out whether a number is even or odd. - Show if a number is even or odd by using varied objects. - Journal writing: Odd and even numbers - Write odd or even numbers next to given numbers. E.g. 25 <u>odd</u>
9. Read, write, and shade in examples of $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{8}$ and $\frac{1}{10}$, $\frac{1}{12}$ as part of a whole (Continued).	Identify the symbolic representations of fractional parts a. $\frac{1}{2}$: One out of two equal parts – half b. $\frac{1}{3}$: One out of three equal parts– third c. $\frac{1}{4}$: One out of four equal parts– fourth	- Divide plane shapes into equal parts then color one part to represent the fraction. Example: $\frac{1}{8}$ one eighth  - Shade in parts to represent a fraction Example $\frac{1}{4}$ one fourth 	Harcourt Math Bk. 1 Vol.2 Teacher's Edition: pgs. 353A, 354, 355, 357	Label fractional parts of figures using symbols.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 2

Sub-Goal 1: : Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
9. Read, write, and shade in examples of $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{8}$ and $\frac{1}{10}$, $\frac{1}{12}$ as part of a whole.	d. $\frac{1}{8}$: One out of eight equal parts– eight e. $\frac{1}{10}$: One out of ten equal parts– tenth f. In each instance, the bottom number represents the total number of pieces to make a whole. The top number represents only one part of the whole.	- Write a fraction to describe figures. Example: $\frac{1}{2}$  - Fold sheets of paper to make equal parts. Example: $\frac{1}{3}$ 		Shade figure(s) for given fraction(s) Example: $\frac{1}{2}$ 
10. Explain that fractional parts of a whole are equally sized pieces.	Fractional Parts - A number of equally sized pieces or parts that when put together make one whole or a complete group. a. one half $\frac{1}{2}$ - one out of two equal parts b. one third $\frac{1}{3}$ - one out of three equal parts c. one fourth $\frac{1}{4}$ - one out of four equal parts	- Identify objects that have fair shares, or equally sized pieces. - Cut play dough ‘pizza’ into fair shares or equal parts to divide among other group members. Example: 4 members in a group, each member will be given one out of the four equal parts. - Find the missing fractional part to complete an object or shape. e.g.    - Describe fractional parts of groups. Example  $\frac{1}{3}$ of the marbles is black.	- Harcourt Math Bk. 1Vol. 2: Teacher’s Edition pgs.352 & 359A - Mathematics Plus Bk. 1 Teacher’s Edition pg. 291& 292	- Divide objects into equal parts for fractions. - Paste pre-cut fractional parts to make a whole 

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, AND ALGEBRA
GRADE: 2

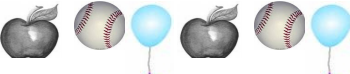
Sub-Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

Essential Questions

1. What is the role of patterns in everyday life?
2. Why is skip counting important in everyday life?
3. How do I find missing values in a number sentence?
4. Why is knowing how to count important?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, AND ALGEBRA
GRADE: 2

Sub-Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Identify, continue, and create pictorial, action and repeated/grouping patterns within 999 (Continued).	• Pattern: A repeated sequence or design E.g.  5, 10, 15, 20, 25, 30... • Pattern Unit: Part of a pattern that repeats. E.g.  • Pictorial Pattern: A pattern made using pictures E.g.  • Action Pattern: Made by performing a specific set of actions. E.g. clap, jump, dance, clap, jump, dance clap, jump, dance	• Identify and continue the pattern in a row of pictures then draw or tell what should come next. E.g.  • Identify the pattern unit in a given pattern. E.g.  ABABAB E.g. blink, sing, smile, blink, sing, smile. • Demonstrate/tell which action should be next in an action pattern. E.g. raise arms up, put arms down, raise arms up, put arms down. • Use pictures in a pattern to make a new pattern. E.g. 	• Harcourt Math Bk. 1 pgs. 313-324 • Connecting Cubes • Harcourt Math Bk. 1-Vol. 2- Teacher's Edition pgs. 317A - 318,319 • Harcourt Math Bk. 1-Vol 2- Teacher's Edition pgs. 319A & 320	• Correctly draw or tell what should come next to continue a given pattern. Use numbers and symbols • Create a pattern using a given set of pictures, or actions • Create new patterns using the same objects, shapes, or numbers given.

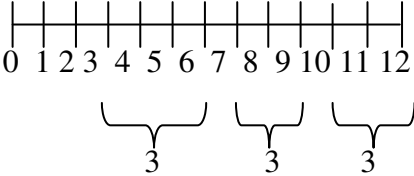
SCOPE OF WORK
PRIMARY SHOOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, AND ALGEBRA
GRADE: 2

Sub-Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Identify, continue, and create pictorial, action and repeated/ grouping patterns within 999	- Number Pattern that repeats or grows: - A pattern that is created is based upon the relationship of its numbers. E.g. 1, 3, 5, 7, 9, 11,___ - To create this pattern the number 2 is always added to the previous number to get the next one. The next number is 13.	- Tell which number should come next in a pattern. E.g. 2, 4, 4, 2, 4, 4, 2, 4, 4, or 10, 20, 30, 40, 50... - Compose numerical patterns. Example 1 2 3 4 1 2 3 4	aaamath.com	Correctly tell what comes next in the number pattern.
2. Identify patterns in their world.	Recognize that there are patterns all-around us and be able to identify different kinds.	- Observe things which have a variety of designs on them, that create patterns, (e.g. animal skins (stripes, spots), clothing (stripes, polka dots, plaids) tiles, windows, etc) then discuss observation. - Participate in a nature walk Observe and discuss the types of patterns seen. _____ lines or leaves _____ lines on tree trunks _____ petals on flowers _____ branches etc.	Harcourt Math Bk. 1 pgs. 313-324	- Name types of patterns (designs) as seen in pictures or on items. - Create own patterns.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, AND ALGEBRA
GRADE: 2

Sub-Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Skip count by 2s, 3s, 5s ,10s, 25s, 50s up to 999.	- Count forwards or backwards by a number other than one. - Use number patterns to count by 2s, 3s, 5s, 10s, 25s, 50s.	- Count using a 100 counting chart. - Use 40 counters and arrange them in groups of 2s, 5s, 10's, and 50s.	- Cuisenaire rods. - Harcourt Math Bk. 1 pgs. 163-167	Have students explain why skip counting is necessary in everyday life.
4. Identify and locate missing numbers on a number line.	E.g. Skip count by 3s: 3, 6, 9 	In cooperative groups, students explain, complete, and share how they arrived at answers on the number line. Groups are not assigned the same problems.	Harcourt Math Bk. 1 pgs. 149 &150	Provide students with an activity sheet where they have to identify the missing numbers on a number line.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, AND ALGEBRA
GRADE: 2

Sub-Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
5. Estimate the amount of objects in a set using 0, 10 and 100 and then determine if the estimation was reasonable.	To estimate is to find a number that is close to the exact answer.	How Many? - Fill a jar with beans or other objects and have students estimate how many beans are in the jar. - Have students fill in given containers to verify their answers. - In the classroom spread several things on the floor (e.g. books, toys, pencils, etc.). Have students estimate the number of items on the floor (1, 100 or 1000). Then have them count as they pick up the items.	www.icoachmath.com - Jar - Manipulatives (Beans, macaroni)	Explain why estimation is important.
6. Solve non- routine problems where finding pattern is an appropriate strategy.	- Non-routine problems stress the use of heuristics and require little or no use of algorithms. - Heuristics are procedures/strategies that do not guarantee a solution to a problem but provide a more highly probable method for discovering the answer. For example, draw a picture	Students solve problems where using a pattern is a strategy.	http://www.mathpentath.org	Use the KWL strategy

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

Essential Questions

1. How can you use addition and subtraction to solve problems?
2. What strategies do I use to find the sum or difference of two whole numbers up to two digits?
3. What are fact families and how do they help us add and subtract?
4. How will understanding the relationship between addition and subtraction help me solve my problems and check my work?
5. How would estimation help in finding sums and differences?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Recall addition and subtraction facts up to twenty ($10 + 10 = 20$)	Addition Facts: The addition of two single-digit addends producing sums to 18. For example: $7 + 9 = 16$s Addend: a number to be added to another. - When zero is added to a second number, the answer is the second number. For example, $0 + 20 = 20$. - Adding one is just like counting by one. - Subtraction facts are facts you should know just by thinking, not counting. Once you know these facts, you can subtract any number easily. - Show the relationship between the addition and subtractions facts. - For example: $15 - 8 = 7$. Ask students to think about what goes with 8 to make 15. The students use a known addition fact $8 + 7 = 15$ to solve the subtraction fact.	- Use flash cards and allow students to identify addition facts in less than 3 seconds. This indicates mastery of the fact. i. Place these cards in the “I know” stack. Review with students the facts that are easily retrieved. The cards that are left become the “I want to know” stack. As cards from this stack are learned they become the “I learned” stack. ii. Make labels for the stack so the student can see a visual model of “K-W-L” chart of his subtraction facts. - Perform the above for subtraction facts.	- enVision Math Bk. 1 pgs. 481 & 515 - Harcourt Math Bk. 1 Vol.2 pgs. 373A-384A a. Reteach, Practice, Problem Solving Challenge Worksheets and Transparency pgs. 26.1-26.6 - Flash cards - Number line	Worksheet on addition and subtract facts. Time students and record their scores. The objective is for all students to gain mastery on the facts. This activity may take several attempts.

**SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2**

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2. Apply basic facts to mental math (Continued).	- Mental math strategies for subtraction facts should be developed separately. Doing addition and subtraction concurrently is not pedagogically wise. - Strategies for Mental math i. Doubles: E.g., for $4 + 6$, think $5 + 5$ ii. Doubles Plus One: E.g., for $4 + 5$, think $4 + 4 + 1$ iii. Doubles Take Away One: E.g., for $4 + 5$, think $5 + 5 - 1$ iv. Doubles Plus Two: E.g., for $4 + 6$, think $4 + 4 + 2$ v. Doubles Take Away Two: E.g., for $4 + 6$, think $6 + 6 - 2$ vi. Making 10: E.g., for $7 + 5$, think $7 + 3 + 2$ vii. Building on a Known Double: E.g., $6 + 6 = 12$, so $6 + 7 = 12 + 1 = 13$	- Perform mental math drills Example: $2 + 8 =$ $7 + 1 =$ $9 - 3 =$	www.eduplace.com/math/mw/models/overview/1_21_2.html - 7k – - Harcourt Math Bk.1 Vol.2 pgs. 258A, 378A, 416A, 430A - Mental Math (Teacher’s Edition) pgs. 246, 258, 378	Written or oral quiz

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2. Apply basic facts to mental math .	viii. Addition to Subtraction: e.g., for $7 - 3$, think $3 + ? = 7$.			
3. Explain strategies used to arrive at sums and differences.	Strategies • Adding 10 to a number: Adding 10 to a number does not require any counting. For example, $10 + 2 =$ $8 + 10 =$ $10 + 5 =$ $7 + 10 =$ $10 + 9 =$ $3 + 10 =$ • Think Addition Strategy: This strategy demonstrates how students can use their knowledge of adding facts to find the answers to subtraction equations. For example For 10-6, students should look at the number and think “6 plus what equals 10?” and determine the missing addend. • The Count Back Strategy: If students have to subtract 1, 2, or even 3 from a number, they could employ a counting back strategy with or without visualizing jumping back on a number line.	• Use file folder games where students match the sums to the equations. • Provide one group of students with addition and subtraction problems. Write them on greeting card size construction paper and hang them around the students’ neck. Give another group the answers to the addition and subtraction facts. Write them on greeting card size construction paper and hang them around their necks. After giving a signal have students ‘find their partners’.	• www.mhschool.com • www.gkastner.com • aaamath.com • www.isbe.net • Harcourt Math Bk. 1 Vol.1 pgs. 65A-74A a. Reteach, Practice Problems Solving Challenge Worksheets and Transparency 5.1-5.5 b. Problem Solving Think Along, pg. 24	• Teacher flashes subtraction and addition fact cards to students. All fact cards should be random addition and subtraction of 1, 2, and 3 (adding 10 to a number, think addition, count back) ii. Students look at cards and verbally count back, add 10, or think addition to determine the solution. iii. Evaluate students’ answers to determine whether they used the correct strategy. iv. Evaluate students’ answers to the sum and differences and keep track of right and wrong answers by sorting them as you flash.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Create and explain fact families using addition and subtraction skills to show the relationship between addition and subtraction.	Fact families: A fact family is a group of related facts using the same numbers. Example $4 + 3 = 7$ $7 - 3 = 4$, $3 + 4 = 7$ $7 - 4 = 3$. - Fact families are a very powerful tool for mastering facts; once you know one fact in a family, you can work out the other facts in the same family. - Fact families are also useful for solving problems with missing addends, such as $4 + \underline{\quad} = 7$	Make a Triangle: - On the points of the triangle write the digits in the fact family: For example: 2, 3, 5. - On the triangle, have the child write the 2 addition and 2 subtraction facts for that family. You could duplicate many triangles, with lines for the facts. Then you can "customize" each triangle!	- enVision Math Bk. 3 pg. 66 - Bright Sparks Bk 2. p. 31 - Harcourt Math Bk. 1 Vol. 1 pgs. 79A-88A, 97A & 98A a. Reteach, Practice, Problem Solving Challenge Worksheets pgs. 105A-116A b. Transparency 7.3	Students search for related addition and subtraction facts for a given number and investigate fact families when one addend or the difference is 0
5. Find the sums of 2 two-digit numbers using a variety of methods (Continued).	Addition of two-digit numbers is developed sequentially, beginning by finding the sums of numbers that are multiples of 10. For example, to add 40 plus 50, a child may think of the basic addition fact, $4 + 5 = 9$, and then affix a zero to the five to get the sum, 90. When children do this, the important point to emphasize is that they are not really adding 4 and 5, but rather 4 tens and 5 tens.	Hundred Board Sums In cooperative group, students cut numbers from the hundred board to create addition problems. Students then find the sums of the problems.	- www.eduplace.com - eliot.needham.k12.ma.us - Harcourt Math Bk. 1 pgs. 413A & 414A, 417A & 418A, 421A & 422A a. Reteach, Practice, Problem Solving Challenge Worksheets and Transparency, 29.1, 29.3, 29.4, 29.5	Use interactive assessment, which is found at In the Rainforest Math, students are challenged to add starting from the ones place and then the tens place. Teachers can check students' scores at the top of the web page.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
5. Find the sums of 2 two-digit numbers using a variety of methods.	- Addition algorithm is based on the base-ten positional numeration system, and so when adding two-digit numbers, place value must be acknowledged. For example of $34 + 52$. - The first digit from the left is in the tens place, and the second digit from the left is in the ones place. $34 + 52$ can be written in the following way: $\begin{array}{r} 34 \quad 30 \quad + \quad 4 \\ + 52 \quad + 50 \quad + \quad 2 \\ \hline 86 \quad 80 \quad + \quad 6 = 86 \end{array}$ - Adding 34 and 52 is equivalent to finding the sum of 3 tens (30) and 5 tens (50), and then adding to this result the sum of 4 ones and 2 ones.	Students will be given copies of the local newspaper. In pairs they will locate ads and create problems (using two-digit numbers) for their classmates to solve.		

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
6. Find the difference of 2 two digit numbers.	- Subtract the ones place first. - Subtract the tens. Example: $\begin{array}{r} 56 \\ -23 \\ \hline 33 \end{array}$	Subtraction Train In groups, subtraction problems are placed on a train. If group members calculate the correct answer, they say “Cho, Cho”.	- Bright Sparks Bk 2. p. 56 - Harcourt Math Bk. 1 pgs. 435-440 a. Reteach, Practice, Problem Solving Challenge Worksheet and Transparency 30.1, 30.3 - www.aaamath.com - Place Value Modules	Use interactive assessment, which is found at www.aaamath.com. Students are challenged to subtract problems. Teachers can check students’ scores and times of completion at the bottom of the web page.
7. Estimate the amount of objects in a set using 0, 10, and 100 as benchmarks and then determine if estimation was reasonable (Continued).	- Use the number line to help with estimation. - Select a number. For example, 43. 43 is closer to 40 than 50.	Guess Imation Time - Activity can be done individually, in pairs or in groups. - Teacher gives a list of questions, which would require students to estimate then find the real answer. - Students compare their answers with their guesstimate and find the differences.	- enVision Math Bk. 2 pgs 347-348 - Harcourt Math Bk. 2 pg. 215 - Math Jingle CD: Primary Problem Solving Think Along TR 124	Students use number line to estimate numbers or objects in a set.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
7. Estimate the amount of objects in a set using 0, 10, and 100 as benchmarks and then determine if estimation was reasonable.		- Questions for investigating can include the following: - How many cars are in the school's parking lot? - How many doors are in the school?		
8. Estimate to find sums and differences (Continued).	- Use the number line to assist students with estimation. - Given a number, find the two numbers that come before and after (counting in tens) that number. E.g. The number is 34. Between which two numbers (counting in tens) does this number fall. Answer: 30 and 40. 34 is closest to which number, 30 or 40? It is closer to 30. Then, 34 is estimated to 30. - Add the numbers. Example: $\begin{array}{r} 45 \\ + 72 \\ \hline 117 \end{array}$ $\begin{array}{r} 50 \\ + 70 \\ \hline 120 \end{array}$ 45 is between the numbers 40 and 50. 45 is closer to 50. Therefore, 45 is estimated to 50.	- Use flash card and allow student to estimate sums and differences using a variety of methods. Estimation Hangman - Students estimate sums and differences to the nearest ten. If the addends or minuends are incorrect, you draw the parts of the hangman. The group or student who completes the hangman first loses the game.	- Harcourt Math Bk. 1 pgs. 137A & 138A - Reteach, Practice, Reading Strategy, Challenge Worksheets and Transparency 9.6 - Math Jingles CD, Primary Problems Solving Thinking Along TR 124	Students create and solve problem estimating sums and differences.

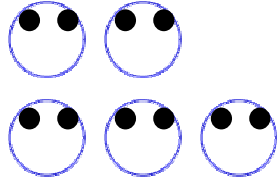
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
8. Estimate to find sums and differences.	b. 72 is between the numbers 70 and 80. 72 is closer to 70. Therefore, 72 is estimated to 70. The estimated sum is 120 For subtraction, the rule remains the same. After estimation, you subtract instead of add.			
9. Explore multiplication as repeated addition.	Multiplication is a fast way of adding a series of numbers. Example: 1 bird has 2 legs 5 birds have $2 + 2 + 2 + 2 + 2 + 2 = 10$ Add 2 (5 times)	In groups using manipulatives, students explore multiplication as repeated addition. Example: Solving Problems around the School Using Repeated Addition Take students on a tour around the school. Have them solve problems like counting the number of desks and chairs in a classroom, computers in the computer lab, number of juice in a box sold by the lunch vendor, etc. Explain to them that if the desks and chairs are set up in rows and columns it is easier to multiply to find the total number, instead of counting each item separately.	- www.multiplication.com - Harcourt Math Bk. 2. Vol.2 pg. 28 - Carnival Countdown CD	Students match prepared repeated addition sentences with multiplication sentences. They walk around to find a partner with coordinating product.
10. Explore division as repeated subtraction (Continued). Note: Objectives 8 and 9 are introductory. Students do not learn multiplication and division facts at this time	- Remember that multiplication is repeated addition. $5 \times 4 = 4 + 4 + 4 + 4 + 4 = 20$. - Division is repeated subtraction.	In groups using manipulatives, students explore division as repeated subtraction. Example: 10 legs - How many birds?	- www.homeschoolmath.net - Manipulatives - Harcourt Math Bk. 2 Vol.2 pgs. 441A-442A	Students create and solve problems with division as repeated subtraction.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 2

Sub-Goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
10. Explore division as repeated subtraction. Note: Objectives 8 and 9 are introductory. Students do not learn multiplication and division facts at this time.	Example: 20 peanut cakes. Make a group of 4. Form another group of 4 until none is left. How many groups do you make?	$10 - 2 = 8$ $8 - 2 = 6$ $6 - 2 = 4$ $4 - 2 = 2$ $2 - 2 = 0$  = 5 birds		
11. Create and solve problems in addition and subtraction using whole numbers, money, and fractions.	- The words “in all” and “altogether” are associated with <u>addition</u>. - The words “left” and “many more” than are associated with <u>subtraction</u>.	- In groups, students solve various problems and justify their answers. - Using the Miami Herald or the local newspaper, collect food store advertisements for items (milk, bread, etc.). - Create various problems for the students to solve where they are given a certain amount of money to purchase some lunch for school. Example: Rachael was given \$5.00 to purchase some food for her lunch. She went to Super Value and brought 2 apples at 50 cents each, 1 potato chip at 75 cents and an apple juice at 85 cents. How much money did she spend? How much change does she have left?	- Harcourt Math Bk. 1 pgs. 7A-248A - Problem Solving Think Along TR 124 - Reteach, Practice, Problem Solving Challenge Sheet pgs. 359A &360A	Students complete activity sheets where they solve problems in addition and subtraction using whole numbers, money, and fractions.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

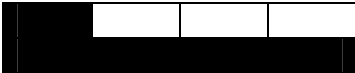
Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

Essential Questions

1. What are the three basic units of measurements?
2. How does what you measure influence how you measure?
3. How does experience help you relate time to when an event actually happen?
4. What information is necessary to solve everyday problems?

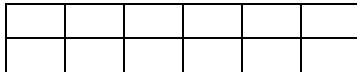
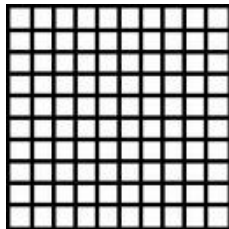
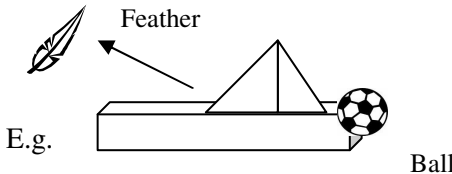
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Estimate and measure objects to the nearest metre, centimetre, or decimetre.	- To give an estimation is to guess as closely as possible the approximate lengths of objects, and then check the accuracy of that guess by using a ruler for a specific unit of measurement. Metre - basic unit of measuring length in the metric system. - Centimetre – 1/100 of a metre or 100 centimetre = 1 metre - Decimetre- 1/10 of a metre or 10 decimetre = 1 metre.	- Give each child/group an object and allow them to make reasonable estimates as to the length of each object based on the unit being used. Have them measure it, and write the length as closely as possible to its actual measurement e.g. which string is about 3cm? (check estimates by measuring) - How many centimetres long is the eraser?  (other objects that could be books, desk, chalkboard, window sill, paper clips, etc) - Tell which object in a group could be a certain length.	- Harcourt Math Bk. 1 Teacher's Edition pgs. 333A & 334A - Harcourt Math Bk. 2 Vol. 2 pgs. 257A-280A - Problem Solving Think Along TR124 - Various objects	- Give reasonable guesses then measure and tell accurate lengths of a specific object. - Choose objects of given lengths by making reasonable guesses.
2. Demonstrate the concept of area using nonstandard units (Continued).	- Area is the surface to be covered. The area is measured in squared units. - Show how to find the amount of spaces an object covers by counting the number of square blocks on grid paper.	Use grid paper to draw/outlines figures that have a given number of square units. Then shade in the area, e.g. 5 units. 	grids	- Write the area of objects using square units (by counting squares). - Correctly draw any figure for a given area and shade it in.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2.Demonstrate the concept of area using nonstandard units.	Count the number of squares inside a specifically outlined area to find its area in square units.  e.g. This area is 11 square units.	Draw figures for given areas and shade them in. 		
3. Compare masses of objects using metric measurements (Continued).	Mass measures by how much something weighs. Weight can change depending on where you are (such as on the moon) while the mass stays the same. - In the metric system, kilograms and grams are measures of mass, but in the U.S. customary system, ounces and pounds are measures of weight Heavier means having more weight than another object. On a balance scale, the heavier object will lower the pan. Light means having less weight than another object.	Place an object on either side of a balance in the pans, then observe to see which is heavier (lower pan) or lighter (higher pan)  E.g. Feather Ball Draw objects on a sheet of paper under the headings. ‘Heavier or lighter’ i.e. Heavier  (ball) Lighter  (feather)	- Harcourt Math Bk. 1, Teacher’s Edition Vol. 2 pgs. 314A & 342A - balance scale - www.mathsisfun.com	Circle objects that are heavier or lighter and justify the responses.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Compare masses of object using metric measurements.	Balance means having the same weight as another object. On a balance scale, the pans will be at the same level.	Play a game called “We balance” where students try to choose objects that are the same weight and place them on a scale to see if they balance or not.		Tell whether pairs of objects on a scale/balance are of equal weight, or heavier or lighter. Justify your responses..
4. Estimate and determine mass of familiar objects using metric measurements (gram, kilograms)	- Gram is the basic unit of measuring mass in the metric system. 1 000 grams = 1 kilogram	Estimating Mass Have students estimate and compare the mass of different items to 1 kilogram. Students then weight the objects to find the actual weight.	Harcourt Math Bk. 1 Vol. 2 pgs. 342A-344A	Have students complete an activity sheet where they estimate and determine mass of objects using metric measurements (gram, kilograms).
5. Estimate, measure and compare temperatures.	A thermometer is used to measure the amount of heat. Objects with a higher temperature are hotter. Lower temperatures are cooler.	- Place frozen or cold potatoes in bags (1 per bag) also place hot/warm potatoes in other bags. First child chooses a bag and tries to guess; by touch, whether the potato is hot or cold. After guessing, other members of the group decide if the potato is hot or cold. If the guess is correct, the first child gets a counter, and the bag is returned to the group and mixed with the other bags. The other children take turns for an allotted time. The child with the most counters wins - Use an outdoor Fahrenheit thermometer to measure the temperature outside; record the morning and afternoon measurements, then compare those on specific days or times with others.	- Mathematics Plus Bk. 1, Teacher’s Edition Vol. 2 pg. 285 - Mathematics Plus Bk. 1 Teacher’s Edition Vol. 2 pg. 286A - Harcourt Math Bk. 2 Vol. 2 pgs. 293A & 294A	- Read and compare temperatures from a thermometer and chart in terms of hotter, colder, warmer, or cooler. - Tell whether the items are hot or cold by touch

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
6. Relate an event to the appropriate part of the day	- A.M. means in the morning and P.M. means in the afternoon on a twelve hour clock. - Times of day are morning, after noon or night. Use hours like 12 o'clock, 3 o'clock and 9 o'clock.	- Draw pictures of 3 activities they do each day, and then write when each one occurs. E.g. eating breakfast playing out-side, going to bed (morning, afternoon, night) or e.g. coming to school, eating lunch, leaving school (9 o'clock, 12 o'clock, 3 o'clock). Afterwards arrange activities in order of first, next, last. - Work cooperatively using a flannel board to sort pictures of activities to correlate with the times of day when they would happen.	- Harcourt Math Bk. 1, Teacher's Edition Vol. 2 pgs. 252, 265 269, 270 - Mathematics Plus Bk.1- Teacher's Edition Vol. 2 pgs.314. - www.allentowns.org	- Give appropriate examples of activities for times of day. - Sort pictures correctly using the different times of the day. - Use interactive game on www.allentowns.org where students identify the time of day for activities. The teacher can identify the time it took the child to finish the activity as well as see the child's overall score.
7. Name the days of the week and months of the year in sequence.	- The days of the week are Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday. - The months of the year are January February, March... December. - Connect days of the week and months of the year with ordinal numbers. For example: Monday-2nd	- Use index cards or a calendar to identify the days of the week and months of the year. - While standing in a circle, students say the names of days or months, in their correct order - First child says Sunday, the next say Monday, and the like. The child who says the incorrect day must face the outside of the circle. The game continues until everyone has had a turn and they have come to Saturday.	- Mathematics Plus Bk. 1 Teacher's Edition Vol. 2 pgs. 325A & 325 - Harcourt Math Bk. 1, Teacher's Edition Vol. 2 pgs. 267 & 268. - Mathematics in Motion: A Resource Book for Primary Teachers, pg. 98	Arrange in order the days of the week and months of the year.

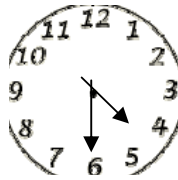
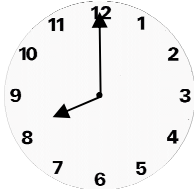
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
8. Read a calendar for the month, year, and date.	A calendar is a system of determining the beginning, length, and divisions of a year and for arranging the year into days, weeks, and months	Give each child a copy of the same calendar page and have them point out the month and say its name, along, with the year. Ask them to find a particular date- E.g. September 1st and have them tell which day was that(Monday)	Harcourt Math Bk. 1, Teacher's Edition Vol. 2 pgs. 267A &268A	Correctly identify and tell the month, year, or date when asked.
9. Make associations between months, days, and weeks on calendar.	- Association is the relationship between two data. For example days and months. - Example of associations Christmas Day: December 25th Independence Day: July 10th Opening of school- September Valentine's Day: February 14th	- Using a calendar, children find and name the month for their birthdays. - At the start of each month, discuss holidays, special occasions, or school events that will occur. Highlight these events on a class calendar using cut-outs, Stickers, etc. E.g. Valentine's Day – Hearts, Thanksgiving- Cornucopia, Birthday- Cake, Candles, Balloons.	Harcourt Math Bk. 1, Teacher's Edition Vol. 2 pgs. 267A & 268A	Use a calendar to make associations between months, days, and weeks
10. Identify equivalent relationships between days, months, years, and hours.	24 hours = 1 day 7 days = 1 week 12 months = 1 year 365 days = 1 year 366 days = 1 leap year	- In cooperative groups students complete the following: a. How many <i>days</i> and/or <i>weeks</i> <i>between</i> two dates Year - <i>Month</i> - Day Counter b. How many years, <i>months</i> and <i>days</i> are there <i>between</i> two calendars ...	Harcourt Math Bk. 1, Teacher's Edition Vol. 2 pgs. 267A & 268A	Students write their own problems dealing with equivalency of days, months, years, and hours. Students also supply the answers for the problems.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
11. Tell time to the hour, half hour, and quarter hour on an analog clock.	- Identify the number of minutes past by counting by 5's E.g. the number (1) one represents 5 minutes, two (2) = 10 minutes, etc. - The highest we can count to is 60 which is at the number 12. This represent one (1) hour. At 6, were halfway around the clock. - There are 15 minutes in a quarter hour. And 60 minutes equals one hour. - Time is determined by observing the positions of the hour and minute hands (short and long hands) i.e. if the minute (longer hand) is on 12, we say o'clock and if it is on 6 we say half past(30 minutes	- Display a flashcard for a specific time. Students fix the minute and hour hands to correspond with the time E.g. 4:30  The long hand is on 6 the short hand is between 4 and 5. - Using paper- plate clocks, students position the long and short hands as directed, and then read the time shown. e.g.  The clock shows 8 o'clock or 8:00. *Students can model times for ½ hours, quarter past, or quarter to, as well.	Harcourt Math Bk. 1 Teacher's Edition Vol. 2. pgs. 253A-262A	Arrange a clock's hands to display given times to the hour, half hour, and quarter hour.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT										
12. Identify and use coins and bills in both Bahamian and U.S. currencies.	- Identify Bahamian and American monetary units and name them. - Names of currencies tell how much each is worth, as well as which have the same value or are worth the same amount. <table><tr><td>Bahamian Coins</td><td>American Coins</td></tr><tr><td>one cent (1 ¢)</td><td>penny</td></tr><tr><td>five cents (5¢)</td><td>nickel</td></tr><tr><td>-</td><td>half dollar</td></tr><tr><td>-</td><td>dollar</td></tr></table> - Bahamian bills: \$1, \$5, \$10, \$20, \$50, \$100 - All coins bear the Bahamian Coat of Arms on one side with the words "Commonwealth of The Bahamas" and the date. The reverse of the coins show objects from Bahamian culture with the value of the coins in words. - The 1 cent has a starfish, the 5-cent a pineapple, the 10 cent two bonefish, the 15 cent a hibiscus, and the 25 cent a native sloop.	Bahamian Coins	American Coins	one cent (1 ¢)	penny	five cents (5¢)	nickel	-	half dollar	-	dollar	- Using laminated, plastic, or real coins (or bills) students explore, name, discuss the characteristics and value of each. - Sort coins into groups to distinguish Bahamian or American by looking for common images. For example, Bahamian (coat of arms) or American (president’s heads)	- www.centralbankbahamas.com - Bahamian play money - Harcourt Math Bk.1 Vol. 2 pgs. 227A-234A	- Tell the name and value of a particular coin (or bill) - Group coins correctly as either Bahamian or American. - Identify the value (s) of coins and pair them correctly.
Bahamian Coins	American Coins													
one cent (1 ¢)	penny													
five cents (5¢)	nickel													
-	half dollar													
-	dollar													

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
13. Count, compare, and make change using a collection of coins (Bahamian and US) of amounts to \$10.00 or less.	- Count groups of coins which are either of the same value or mixed values to a total of \$10.00, or less For example, all pennies or pennies and dimes - Decide whether one group of coins is worth more or less than another. e.g. 1¢ less 1¢ less 1¢ less 5¢ more - Use appropriate strategies to deduce how much money is left when some has been spent and create change. E.g. 14¢ 25¢ Δ 25¢ - 14¢ = 11¢ 10¢ 1¢	- Play a ‘shopping’ game using tagged items to sell. Give customers (students) a specific amount of money. E.g. 50¢. Cashier (student) must give the customer the correct change once he or she has made a ‘purchase’. E.g. costs 26¢ Δ Change = 24¢. - Count a group of coins correctly based upon their value to \$10.00 pennies - 1¢, 2¢, 3¢... nickels - 5¢, 10¢, 15¢,... dimes - 10¢, 20¢, 30¢... quarters - 25¢, 50¢,...* use like or mixed coins - Distinguish the value of coins to make trades. E.g. 1 dime can be traded for 10 pennies or 2 nickels. - Create groups of coins that have a greater, lesser, or equal amount as another	- Harcourt Math Bk. 1 Teacher’s Edition Vol. 2. pgs.233A - 248A - Harcourt Math Bk. 1 Teacher’s Edition Vol. 2 pgs. 228,230,231A,231-232 - Harcourt Math Bk. 1 Teacher’s Edition Vol. 2 pgs. 238A-242 - Harcourt Math Bk. 1 Teacher’s Edition Vol. 2 pgs. 241A-242	- Tell how much change should be given back and show that amount using coins - Choose the appropriate counting styles when counting out coins and give the correct amount. E.g. 5¢ 5¢ 1¢ 6¢ 1¢ 7¢ 1¢ 8¢ = 8¢ - Count to find the amount in one group, and then find an amount equal in value so as to trade. - Choose/use coins to make higher, lower, or equal values. 10 10 10 30¢ (more) 5 5¢ (less) 10 10 5 25¢ (equal)

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 2

Sub-Goals 4: Make and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
14. Use the symbols \$, ¢, and · (decimal point) correctly.	- Read and use math symbols that relate to money. \$ = dollar sign ¢ = cent sign = decimal point that separates dollar and cents values/amounts. E.g. \$5.26 is read as five dollars and twenty-six cents.	- Orally tell the value of written amounts. E.g. \$2.14 = two dollars and fourteen cents. - Write or place symbol cards where they belong to show correct values E.g. 6 0 4 is suppose to be six dollars and four cents △ it should be shown as \$ 6 • 04	- Harcourt Math Bk. 1 Teacher's Edition Vol. 2 pgs. 245A & 246A. - Math Jingle CD	- Tell amounts by reading the written forms. - Put symbols in their appropriate positions.
15. Create and solve story problems using whole numbers and money.	- Steps for solving word problems - Read - List - Define - Choose a strategy (Draw a picture)	In cooperative groups, students create, solve problems, and report findings to the class.	Harcourt Math Bk. 1 Teacher's Edition Vol. 2, pgs. 247A & 248A a. Problem Solving Think Aloud TR 124	Create verbal or written story problems and the answers that involve adding or spending money.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 2

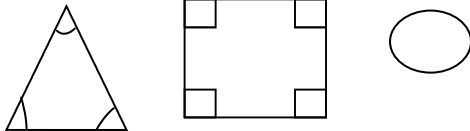
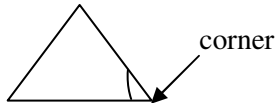
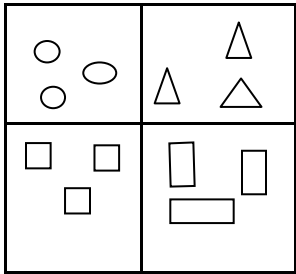
Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.

Essential Questions

1. How can I identify and describe solid figures by describing the faces, edges, and sides?
2. In what ways can I match solid geometric figures to real-life objects?
3. How can I put shapes together and take them apart to form other shapes?

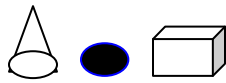
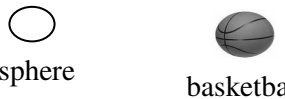
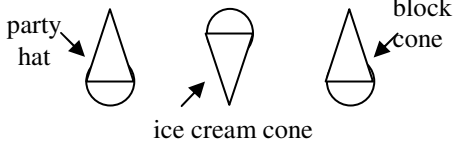
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 2

Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Identify properties of common plane shapes such as number of sides and angles.	- Plane shapes are 2 dimensional figures. - A circle is flat and round in shape. Triangle is a shape that has 3 sides and 3 angles. Rectangle is a plane shape with 4 sides and 4 corners but 2 sides are longer. The opposite sides are the same length. Square is a type of rectangle with 4 equal sides and 4 equal angles. Side is the straight part of a shape. - A corner is the place where two sides meet.	- Point out the sides and corners on plane shapes using cut-outs. - Count to tell which shapes have less or more the same number of sides or corner than others. e.g.  - Find a shape that has the same number of corners as the shapes below. 	- Harcourt Math Bk. 1 Teacher's Edition Vol. 2 pg. 286 - Promethean Board	- Outline sides on drawings of plane shapes. e.g.  - Circle corners on drawings of plane shapes. e.g. 
2. Sort and classify flat shapes.	- Flat shapes are the same as plane shapes. - Plane shapes are two dimensional. - Plane shapes have length and breath/width but no thickness.	- Following oral instructions, students use a Ziploc bag of shapes to make groups of different specifications. For example, sort by number of sides and corners, large small (medium) - Sort by shapes.  - Sort by corners/sides.  0 3 4	- www.mathsisfun.com - Harcourt Math Bk. 1 Vol. 2 pgs. 295A& 296A - Carnival Countdown CD - Pattern blocks	Correctly paste plane shapes into appropriate groups according to their attributes. e.g. 

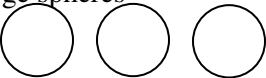
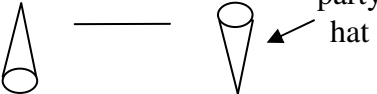
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 2

Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Identify a sphere, cone, cube, and cylinder.	- Identify common 3 dimensional figures by their specific characteristics and relate them to real objects. - Sphere is a round object whose curved surface is the same distance from the center at all points. - Cone is a solid, pointed figure that has a flat round base. - Cube is a solid with 6 square faces. - Cylinder is a solid or hollow figure that is shaped like a can.	- Select/point to solid figures as their names are given. E.g. Find the sphere  - Look for examples of given solid figures in the immediate environment e.g. Find something that is a cube (block, gift box) - Play a game, “What am I?” where one partner describes attributes of a solid figure and the other partner guesses the shape. If it is correct, the students gets a point. E.g. I have 6 faces. What am I?	- Harcourt Math Bk.1 Teacher’s Edition Vol. 2 pg. 286 - Solid Shapes - Harcourt Math Bk.1 Teacher’s Edition Vol. 2 pg. 287A	- Match solid figures to like objects. E.g.  - Select solid figures by clues given about their attributes. - Identify solid shapes. E.g. point to an object that is a sphere. (ball, marble etc)
4. Sort and classify solid shapes according to attributes (Continued).	- Sort and classify mean to separate and group. Three- dimensional figures may be classified by comparing similarities and differences in their attributes. - Types of Movements - Roll: move by turning over - Stack: arrange objects one on top of the other - Slide: move to a new position without turning or flipping. - Flat surfaces- smooth, flat parts of solid figures, also called a face. - Sphere 0 faces - Cone 1 face	- Work in teams to put a bag of shapes into groups, according to their attributes. The team that finishes first wins. - Explore properties of solid figures to compare their movements and then put them into groups according to their similarities. E.g. spheres, cones and cylinders can roll. - Trace the flat surface of solid shapes to see which are similar e.g. cylinders and cones have circular faces.	- Harcourt Math Bk.1 Teacher’s Edition Vol. 2 pgs. 289A- 290. - Solid Shapes	- Create a solid shape booklet by cutting and pasting pictures of objects like spheres, cones, cylinders, and cubes from magazines e.g.  - Discuss movements various solid figures are able to make.

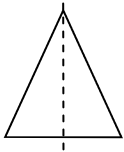
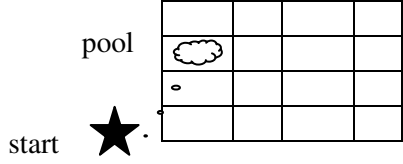
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 2

Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Sort and classify solid shapes according to attributes.	iii. Cube 6 faces iv. Cylinder 2 faces • Physical attributes are visible characteristics that readily distinguish one figure from another e.g. shape, size, or color.	• Identify solid figures that have the same color, shape, or size, then put them into groups e.g. sizes. • Large spheres  • Medium spheres - Students use spheres to make various shapes. E.g. animals.  • Small spheres 		
5. Differentiate between plane and solid shapes using words, pictures, or objects.	• Plane shapes are two- dimensional or flat shapes. For example: circles, triangles, rectangles, squares. • Solid shapes are three dimensional shapes. For example: spheres, cones, cylinders, and cubes. • Flat surface on solid shapes are plane shapes.	• Explore two- and three-dimensional shapes to understand their differences using common objects. e.g. • Circle – face of round clock. • Square – tiles on floor. • Triangle – (musical instrument) triangle • Rectangle – sheet of paper (legal size) • Sphere - basketball • Cone - party hat • Cylinder- soup can • Cube – block • Construct plane and / or solid shapes using a variety of materials - E.g. play dough, toothpicks, blocks, pipe-cleaners, etc, and then compare them.	• Harcourt Math Bk. 1 Teacher’s Edition Vol. 2 pgs 292 A & 293A.	• Match plane shapes to appropriate objects with like shape. E.g.   • Pair plane shapes with solid shapes which have like flat surfaces. E.g.  • Create a model of their community using plane and solid shapes (it is recommended to use recycled materials.)

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 2

Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
6. Identify and draw lines of symmetry.	A line of symmetry is a line that divides a shape into 2 equal parts that are the same shape and size. e.g.  line of symmetry	- Fold pre-cut plane shapes or objects to create 2 equal congruent parts, then trace or draw the line of symmetry.  - Trace common objects and state whether the objects have one, more than one or no lines of symmetry. e.g.  0 1 4	- Harcourt Math Bk.1 Teacher's Edition Vol. 2 pgs.301A, 302A - Harcourt Math Bk.1 Teacher's Edition Vol. 2 pgs. 303A- 304A - Harcourt Math Bk.1 Teacher's Edition Vol. 2 pg. 304A	- Given a set of objects or shapes students identify lines of symmetry. - Draw lines of symmetry on shapes or objects
7. Find and name locations with relationships like near to and far away in a co-ordinate system such as maps (Continued).	- Co-ordinate System an organized method used to locate positions and, or places, on a map. - Identify specific places and or objects by following given directions. Example: 3 spaces above. Above: in a higher place Below: in a lower place	Move through a grid by following directions to get to a specific location/ identify the location. E.g. Point start box. Go up 3 boxes. pool  start	Harcourt Math Bk. 1 Teacher's Edition Vol. 2 pgs. 305A- 306A	- Act out position terms. e.g. up - point up-ward, raise arms - Follow oral/written directions to get to a particular spot on a grided map.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 2

Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
7. Find and name locations with relationships like near to and far way in a co-ordinate system such as maps.	• Behind: at the back of • In front of: further forward of someone or something. • Near to: a short distance away from someone or something • Up: into higher position • Left: on the west of your body when facing north. • Right: on the east of your body when facing north • Down: into lower position.			• Given a set of objects or shapes, students identify lines of symmetry. • Draw lines of symmetry on shapes or objects

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 2

Sub-Goal 6: Collect, organize; and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability

Essential Questions

1. How does a graph give information without using many words?
2. How is predicting better than a wild guess?
3. How can we use range and mode in everyday life?

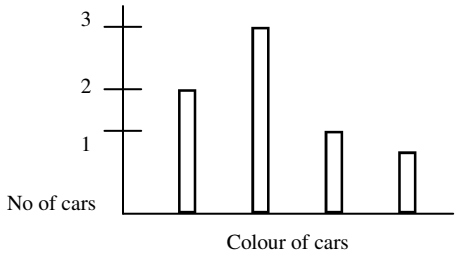
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 2

Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Collect, record, and interpret data on concrete and pictographs.	- Gather information for a particular subject or topic, then sort the data and represent it on a particular type of chart so that it is easily read and understood. Concrete Graph: a graph which displays data using actual objects. Pictograph or pictures graph: a graph that uses pictures or symbols to display information.	- Participate in an in- class survey that uses 10-15 students e.g. choose a favorite fruit from a given group (bananas, apples, oranges, grapes, pears) - Another variation could be a Bahamian list if children have been exposed (plums, mangoes, sapodillas, tamarinds, guineps). Once the data is gathered, record it onto a mounted graph. - Respond logically to questions about the data shown. For example, which fruit did the students love best? How many children's favourite fruit is pear? Name the fruit that was the least favourite of the class.	- Harcourt Math Bk.1 Vol. 2 – Teacher's Edition Pgs. 212, 217-222 a. Reteach ,Practice, Problem Solving Challenge worksheets 15.3	- Record data on one or more kind of graph. - Use a graph to respond to questions relating to the information displayed. - Gather information via family members, neighbors, etc. To create a graph.
2. Collect, record, and interpret data on horizontal and vertical bar graphs (Continued).	Bar Graph: a graph that uses rectangular bars to show data in two ways i.e. vertical bar graph-bars go up from the bottom and horizontal bar graph-bar go from left to right. A Bar graph includes: e. 2 axis with labels f. Scale g. Title	- Cooperatively or independently, conduct surveys on a variety of topics to create graphs. - E.g. - pets e. favorite colors f. things we like to do g. favorite foods.	- Harcourt Math Bk.1 Vol. 2 pgs. 219A-220A - Bar Graph	Students construct a Bar graph of their favourite television shows

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 2

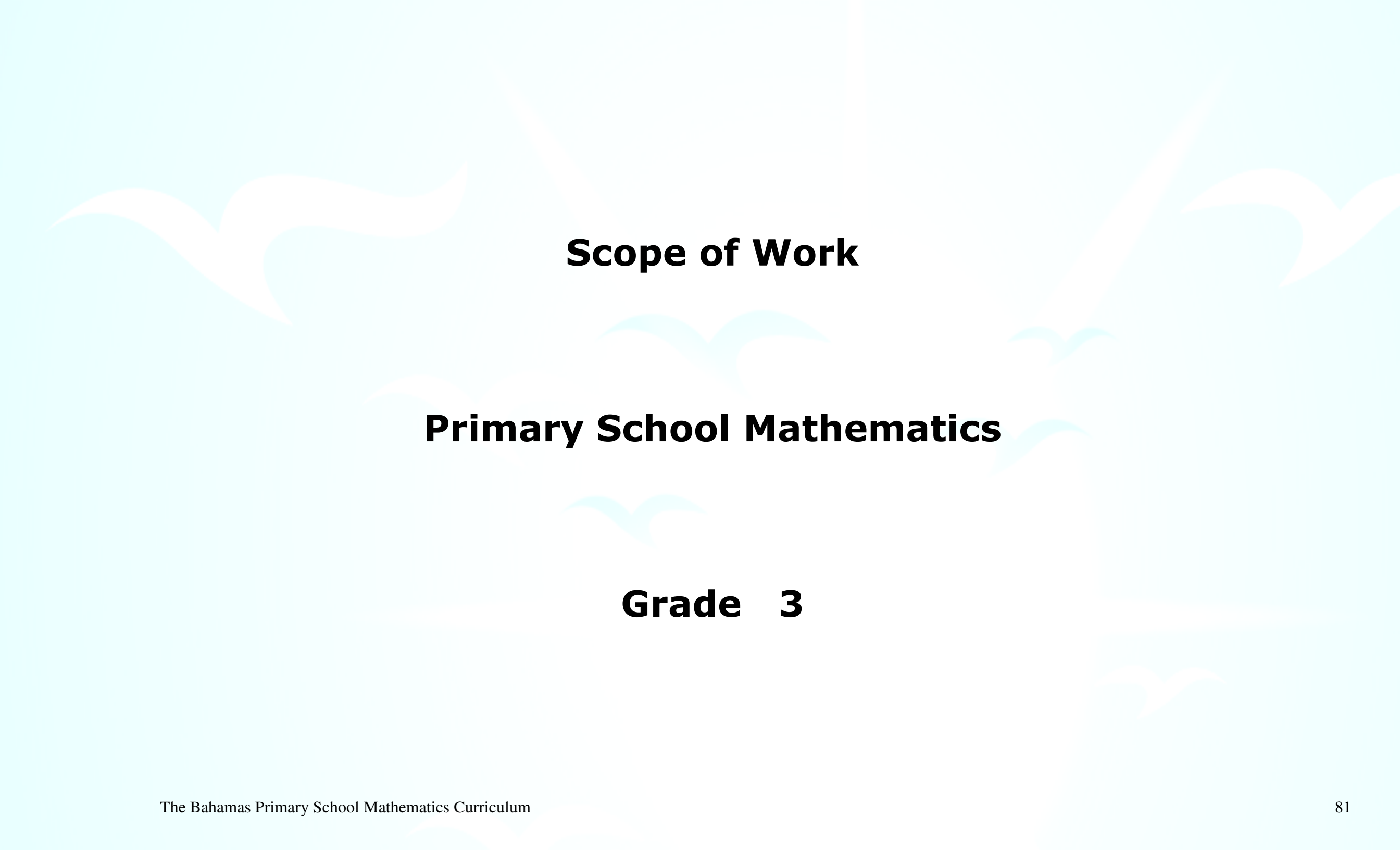
Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2. Collect, record, and interpret data on horizontal and vertical bar groups. (Continued).				
3. Draw conclusions and make predictions from graphs, both concrete and pictographs.	Come to a decision, or guess what an outcome will be based upon information that is shown or given.	- Students try to deduce from a group of toys, which will have the largest and smallest group on a concrete graph. Use an outlined area (tape) on the floor. Each child places his toy into the appropriate area to check outcomes. - Use coloured paper squares where children observe the pattern being formed to predict what will happen next. E.g. 1- red, 2 - yellows, 3- blues, 4 -greens, 5- pinks. - By coloring in the bars, students will note that each new bar/line is one box more than the previous one. *This activity can also be done using a picture graph.	Harcourt Math Bk. 1 Vol.2 pgs. 221A	- Demonstrate the use of logical reasoning when drawing conclusions or making predictions. - Predict and explain what will be and is happening on the graph.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 2

Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Apply terms like “likely” and “unlikely” to everyday situations/events.	- Likely means that an event will happen Example: I will go to grade three next year - Unlikely means that an event will NOT happen. Example: The same principal will be at the school for 35 years.	Spin for a Colour - Students work in pairs. Each pair is given a coloured spinner (red, green, blue, yellow, and purple). - Students read from cards different scenarios. For example, Is it likely to get a green? Is it likely to get a purple? Is it likely to get orange? Is it likely to get pink? - Students justify their responses.	Mathforum.org	Students write in their journals events that are likely and unlikely.
5. Solve questions related to data representation, including the range and mode.	- The range of a set of data is the difference between the highest and lowest values in the set. Example: { 8, 9, 10, 22, 25} Range 25- 8 = 17 - The mode is number that occur most often in the set. Example: { 0, 1, 2, 2, 2, 3, 4} Mode: 2	Use graphs to find the range and mode of activities/events.	Mathforum.org	Create graphs and identify the range and mode.



Scope of Work

Primary School Mathematics

Grade 3

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

Essential Questions

1. What influence does the placement of a digit have on the digit's value?
2. What are the most effective ways for estimating sums and differences using larger numbers?
3. How do I add and subtract numbers including fractions with like and unlike denominators?
4. How are Roman numerals used in everyday life?
5. What is the difference between the numerator and the denominator?
6. What steps are involved in finding equivalent fractions?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Use ordinal numbers to identify positions from first to fiftieth.	Ordinal numbers tell the position of an object or a person. Example of ordinals 1st first 2nd second 3rd third 4th fourth 5th fifth 21st twenty first	- Have students form a line according to height (i.e. tallest or shortest). Then have students count their place on the line (i.e. 1st, 32nd, 3rd, 4th, ...) - Ask the following questions - Who is first on the line? - Who is third, tenth...? - What place is Lisa? - Put students in groups. Have each group run a race on the playing field. Choose some students observing the race to pin ribbons on the competing students according to the order in which they finished the race.	- Harcourt Math Bk. 3 pg. 1 - Mathematics Plus pg. 3	Place five different objects in a row. Have students name or tell the position of each item.
2. Read, write, and recite sequences of numbers through 9 999 forward and backward.	- Sequence numbers from greatest to least or least to greatest. - Sequence numbers up to 9 999 using odd, even, multiples of fives and the like.	- Teacher divides class into two groups. One group will be given number cards. The other group will have the corresponding numbers written on cards in word form. Students will then be allowed to find their matching partner. Students freeze when they have found their partner. - Give students a set of numbers. Have them rearrange each number to make the largest number possible: E.g. 5 903; 2 980; 1600 (rearranged: 9503, 9 820, 6 100). Then have students place the numbers in order from least to greatest: 6 100; 9 503; 9 820.	- Harcourt Math Bk. 3 pgs. 104 & 105 - Mathematics Plus Bk. 3 pg. 15	Teacher checks cards to see if partners match.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT																
3. Identify the place and value of a given digit in a number up to 9 999 (Continued).	- A digit is a symbol used in numeration system: - Ten digits used in our base – ten numeration system are: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. - Numbers are made up of digits. Example: <table><tr><td>Thousands</td><td>Hundreds</td><td>Tens</td><td>Ones</td></tr><tr><td>8</td><td>6</td><td>4</td><td>2</td></tr></table> Place value is the value of the place a digit has in a number. - The last digit in a whole number always goes in the ones place; the second to last digit always goes in the tens place etc. <table><tr><td>Thousands</td><td>Hundreds</td><td>Tens</td><td>Ones</td></tr><tr><td>8</td><td>6</td><td>4</td><td>2</td></tr></table> E.g. The place of the 8 is thousands. - The value of the 8 is 8 thousands or 8000. - The place of the 4 is tens. - The value of the 4 is 4 tens or 40.	Thousands	Hundreds	Tens	Ones	8	6	4	2	Thousands	Hundreds	Tens	Ones	8	6	4	2	- Play “Greatest Number Card Game”. Students work in pairs and put 4 blank lines on a piece of paper. _____ - Teacher shuffles a deck of 10 single digit cards. Teacher randomly selects one card. Students place that digit in one of their 4 blanks keeping in mind they want to create the largest number. This continues 4 times. Teacher asks class for the numbers they wrote. Teacher asks questions like “How do you know you made the largest number?” Note: Play game for the lowest number. The place and value must be emphasized. Place value games Use the Promethean Board, or a chart to create numbers up to 9999. a. On each number, underline a digit and have students identify the place and value. b. If students get the problem correct they receive a point. (*Can be played individually or in groups).	- enVision Math Bk. 3 pg.4 - Promethean Board - Computer - www.abc.teach.com - Promethean Board	- Use the digits 5, 8, and 4 to create the largest number and explain how you know it is the largest number. - Do similar exercises for lowest numbers. Students create 4 digit numbers where they identify the place and the value of selected digits. - Write given numbers into words e.g. 572. (five hundred, seventy-two)
Thousands	Hundreds	Tens	Ones																	
8	6	4	2																	
Thousands	Hundreds	Tens	Ones																	
8	6	4	2																	

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Identify the place and value of a given digit in a number up to 9 999.		Game: I have who has? - Numbers are written in different forms. Students must listen carefully to the clues. Read and figure out what number they have. I have 32, who has 6 tens and 7 ones etc. Memory Game - Numbers can be written on separate cards and written in each form. Students take turns matching each form		
4. Express a four-digit number in expanded form.	- Expanded form is a number written as the sum of the values of its digits. For example: $1\ 350 = 1000 + 300 + 50 + 0$ - Other ways to write a number: a. Standard Form: 8642 b. Expanded Form: $8000 + 600 + 40 + 2$ c. Word Form: eight thousand, six hundred and forty-two	- Students work in teams to play the game “Name that Expanded Form.” a. Flash a card with expanded rotation. Have students give the value. b. Flash card with the value and have students give the expanded form. c. The first group to get the problem correct receives a point. d. Group with the most points is the winner.	enVision Math Bk. 3 pgs. 6 & 7	In journals, create problems related to expanded form.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT												
5. Represent, compare, and order numbers through 9999 using varies forms.	- When you compare two numbers, you find out which number is greater and which is less. E.g. 3 462; 3 486 - Compare the digits starting from left to right <table><tr><th>Thousand</th><th>Hundreds</th><th>Tens</th><th>Ones</th></tr><tr><td>3</td><td>4</td><td>6</td><td>2</td></tr><tr><td>3</td><td>4</td><td>8</td><td>6</td></tr></table> ↑ same ↑ same ↑ different 6 tens < 8 tens Therefore, 3 462 < 3 486 - On the number line, numbers to the right are greater than numbers to the left. Numbers to the left are less than numbers to the right. - You can also use a number line to compare numbers, you write them from greatest to least or from least to greatest. Example: least to greatest. 6 743; 6 930; 6 395 6 395; 6 743; 6 930	Thousand	Hundreds	Tens	Ones	3	4	6	2	3	4	8	6	Grand Winner Students work in pairs. - Give students place value mats. Each person rolls the number cube and puts a chip on their number in one of the placeholders. Once the child selects a place, he/she cannot move the chip/marker. When the 4 places are complete, the students compare the numbers using the correct symbol. - Students order numbers using the numbers from the activity above. - Give students problems to solve. E.g. Which number is halfway between the two numbers given: 1.) 1 and 10 2.) 20 and 40 3.) 50 and 100	- Place Value Chart - Number Line - enVision Math Bk. 3 pg. 12-17 - Destination Math Course MSC 11 Module 1: Number Sense - Number Cube/die	- Compare and organize numbers - Decrease value of given number by 1000, 100 or 10 - Increase the value of a given number by 1000, 100, 10
Thousand	Hundreds	Tens	Ones													
3	4	6	2													
3	4	8	6													

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
6. Read and write Roman numbers to XXV (25).	Roman numbers have been used for hundreds of years. Roman numerals are written with letters. I = 1 VI = 6 XI = 11 II = 2 VII = 7 XII = 12 III = 3 VIII = 8 XIII = 13 IV = 4 IX = 9 XIV = 14 V = 5 X = 10 XV = 15 XVI = 16 XXI = 21 XVII = 17 XXII = 22 XVIII = 18 XXIII = 23 XIX = 19 XXIV = 24 XX = 20 XXV = 25	- Have students answer the following question in roman numerals. a. How old are you? b. How many boys are in your class? c. How many girls are in your class? d. What day of the month is today? e. How many classes of animals are there? - Provide students with standard numbers and have them provide the equivalent Roman number. E.g. 12 (XII), 23 (XXIII), etc.	- Heath Mathematics Level 4 pg. 45 - www.abcteach.com - Mathematics in Motion: A Resource Book for Primary Teachers, pg. 41	Have students write and read roman numerals to XXV.
7. Calculate and convert combinations of Roman numbers to standard numerals and vice versa.	Our system is the decimal system which is based on powers of 10. Roman numerals are based on addition and subtraction. E.g. VI = 5+1 = 6. When the symbol for the smaller number is written to the right of the greater number, add. No more than three symbols for smaller numbers are used this way. IV = 5 – 1 = 4 When the symbol for a smaller number is to the left of the greater number, subtract. No more than one symbol for a smaller number is used this way. Example: XX= 20; VII = 7	Game: Mixed and Match - Students form a circle and are given flash cards with either the Roman numeral or the standard number counterpart. - The teacher says the word mix and then match - Students find the persons with the Roman numeral counterpart and then share their findings with the class.	enVision Math Bk. 3 pg.395	- Match roman numbers with the Arabic equivalents. - Calculate combinations of Roman Numbers to standard numerals. e.g. XXV = 25 XIV = 14

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
8. Identify and use numbers in everyday life.	- Numbers are all around us. We see and use them daily. - Numbers can be found: a. on our homes b. on building c. on license plates d. in and out of classrooms e. on signs (telephone) f. on labels g. in restaurants h. on price tags	- Take students on a school walkabout to find numbers on classroom doors, on cars, buses, trucks, and vans license plates or take them on a short walkabout in the community to see numbers on buildings such as homes or signs. a. Students write the numbers and use them in different ways. For example, they can add, subtract, put them in order from greatest to least or use patterns - Use newspapers for prices of grocery and telephone numbers of businesses.	enVision Math Bk. 3 pgs. 1-38	Have students name places where numbers are used in everyday life (E.g. bank, supermarkets) and write a story or poem about numbers.
9. Identify odd and even numbers and explain the relationship between them in addition and subtraction.	- Even numbers have a 0, 2, 4, 6, or 8 in the ones place - Odd numbers have a 1, 3, 5, 7 or 9 in the ones place. Relationship $\text{Odd} + \text{Odd} = \text{Even}$ $7 + 3 = 10$ $\text{Odd} - \text{Even} = \text{Odd}$ $7 - 2 = 5$	- Have students use a hundred chart where they colour all the odd numbers red and all the even numbers blue. - Challenge students by timing the activity and using a hundred chart from 101 to 200. - Have students count to a certain number alternating claps and snaps. All of the claps are even numbers and all of the snaps are odd numbers. - Have students determine if the date and day of the school is odd or even.	- Harcourt Math Bk. 2 pgs 65 & 66 - Harcourt Math Bk..3 pgs.2 & 3 - Hundred chart - Coloured pencils	Discussion or writing How can you tell odd numbers from even numbers even if you are not skip-counting or using a hundred chart.

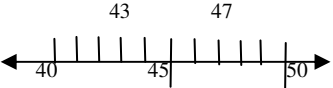
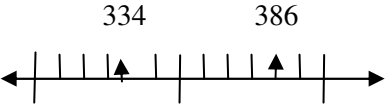
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
10. Skip count to 100 by 2s, 3s, 4's, 5s, 10s and 50s.	Skip count means to skip a number or leave out a number while counting. Example: Counting by 2s: 2, 4, 6, 8, 10, 12 Counting by 3s: 3, 6, 9, 12, 15, 18 Counting by 4s: 4, 8, 12, 16, 20, 24 Counting by 5s: 5, 10, 15, 20, 25, 30 Counting by 10s: 10, 20, 30, 40, 50, 60, 50, 100.	- Have students cover the squares on the hundred charts with beans. Partners take turns removing 2 beans at a time and coloring every second square yellow. - Partners replace the bean on the hundred chart and repeat the process this time removing 3beans at a time and colouring every third square blue. Partners replace the beans on the hundred chart and repeat the process, this time removing 4 beans at a time and colouring every fourth square red. Repeat the process and use different colours for skip counting 5,10, 50 - Have children discuss the patterns that the colored squares make on the chart.	- Harcourt Math Bk. 2 Teacher's Edition pgs. 67 & 68 - Hundred Chart Colour - Coloured pencils	Students create skip counting problems by starting at different points on the number line. For example counting by 50, start at 500 and end at 850.
11. Round numbers to the nearest ten and hundred (Continued).	- Rounding is one way to estimate when you want to know about how many. - A number line can help when rounding. Rules for rounding to the nearest ten - The digit in the ones place helps you to find the closest ten. If the digit in the ones places is 5 or more you round up. If the digit in the ones place is less than 5, the digit in the tens place remains the same. e.g. Round 43 and 47.	10 counters for each pair of student. - Make and use a rounding tape - Make a poster showing the rounding rules - Make a number line to show how to round a number to the nearest ten and hundred. - Write a song/poem regarding the steps to take when rounding a number to the nearest ten or hundred.	- Harcourt Math Bk.3 pgs. 28 & 29, 54, 74 - Mathematics in Motion: A Resource Book for Primary Teachers, pg. 45	Discuss steps to take when round a number to the nearest ten and hundred.

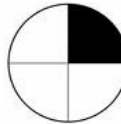
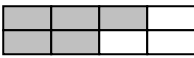
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
11. Round numbers to the nearest ten and hundred.	 43 is closer to 40 and the 3 is less than 5. Therefore, 43 rounds to 40. a. 47 is closer to 50 and 7 is greater than 5. So 47 rounds to 50. Rules for rounding hundreds a. Use the digit in the tens place to help you round. b. If the digit in the tens place is 5 or more round up. If the digit in the tens place is less than 5, the digit in the hundreds place remains the same. Example: Round 334 and 386 to the nearest hundred.  334 is closer to 300 and 34 is less than 50. Therefore, 334 rounds to 300. 386 is closer to 400 and the 86 is more than 50 so 386 rounds to 400.	<u>Making 0</u> - Have students tell whether the number 3 is closer to zero (0) or 10. Then repeat the activity with groups of 4, 5, 6, and 7 counters; - Ask students which groups were closer to zero than to 10. (3,4) - Which groups were closer to 10 than to zero? (6,7) - A plane is flying from Andros to Nassau. The total distance is 100 miles. After the plane flies 60 miles, one engine develops trouble. The pilot must decide whether to fly back to Andros or fly on to Nassau. What should the pilot do? Why? (fly to Nassau, the plane is closer to Nassau). - Accept all reasonable answers and consider other issues that students may wish to raise. Discuss similar situations. Encourage students to share their thinking	- Harcourt Math Bk. 3 Teacher's Edition pgs. 23 & 29 - Mathematics Plus Bk. 3 Teacher's Edition pgs.45 & 46 - Counters	- Discuss what steps or rules you follow when rounding a number to the nearest 10 and 100. - Lesson Quiz: Round to the nearest Hundred and 10 66 = _____ 108 = _____ 684 = _____ 251 = _____ 345 = _____

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
12. Identify and write the fraction represented by drawings or concrete material	- A fraction is a number that names an equal part of a whole or a set. - A fraction is used to name a number that is less than 1  $\frac{1}{4}$ of this circle is shaded a. Read: one fourth or one quarter. b. Write: $\frac{1}{4}$ - The circle represents a whole. 	- Have students work in groups of 3. Give fraction circles, halves, thirds and fourths to each group. Students select a circle and pretend that it is a pizza. The student with the appropriate circle holds it up and responds. - Tanya invites 2 friends for dinner. She divides the pizza so that everyone has an equal slice. How many slices are there? (3 slices) - Let students fold paper and shade to show different fractions. E.g. $\frac{1}{2}$ (cd or one half) of folded paper, thirds and quarters etc.	- Harcourt Math Teachers Edition Book 3 pgs. 412 & 413 - Mathematics Plus Bk. 3 Teachers Edition pgs. 350 – 351 - www.mathforum.com	- Discuss when writing a fraction, how do you know which number to use for the denominator and which for the numerator? - Write a fraction for the shaded part.   $\frac{1}{4}$ $\frac{5}{8}$ $\frac{4}{8}$ or $\frac{1}{2}$
13. a. Explain in words or pictures the relationship between a fractional part and its whole	The concept of a fraction as a part-whole relationship is where one or more equal parts of a whole are compared with the total number of these parts that it takes to make up the whole.	Students solve problems Example: Darryl has a pizza with 5 equal parts. He ate 2 equal parts of it on Monday and saved the rest for the next day. How many parts are left for Tuesday? ($\frac{3}{5}$ parts).	- arb.nzcer.org.nz - Harcourt Math Bk. 2 pgs. 335-341	Write in journal describing the relationship between a fractional part and its whole. Use pictures or drawings to help you.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
b. Explain the role of the numerator and denominator in a fraction using words or pictures	- To understand fractions as part-whole relationships, students need to recognise the relationship between the denominator (total number of equal-sized parts that make up the whole) and the numerator (number of these parts of interest). Example: $\frac{2}{5}$ of the marbles are shaded ● ● ○ ○ ○ Read: Two fifths Write: $\frac{2}{5}$ - The marbles belong in a group. The number tells how many parts are being counted. - The denominator tells how many equal parts are in the whole or group. It is the bottom number of a fraction.	Have volunteers name the fractional parts that each circle represents.	arb.nzcer.org.nz	Write in journal describing the role of the numerator and denominator using pictures for illustration.

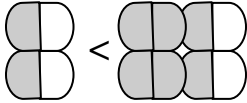
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
14. Compare and order fractions with the same denominator.	- Review the meaning of $>$, $<$, $=$ - Models can help you compare parts of a whole. E.g. $\frac{1}{4}$ and $\frac{3}{4}$  - When comparing fractions with like denominators, look at the numerators. $\frac{1}{4} + \frac{3}{4}$ $1 < 3$ $\therefore \frac{1}{4} < \frac{3}{4}$ - After comparing the fractions, order them from least to greatest or greatest to least.	Fraction Game - Groups are given a deck of fractions flash cards. - Students draw cards and compare them. - Students then order the fractions from least to greatest or greatest to least. Groups report on their findings	Harcourt Math Bk. 3 Teachers Edition pgs. 434-437	Quiz Example: Shade $\frac{4}{5}$ of the following objects  Write fractions for unshaded parts.
15. Compare and order fractions with different denominators (Continued).	- The numerator is the top number in a fraction. It shows how many parts we have. - The denominator tells how many parts are in the whole or group. It is the bottom number of a fraction. E.g. $\frac{1}{4}$ numerator 4 denominator	Order Up - Use a game to practice comparing fractions - Have each player write a fraction with a denominator of 2, 6, 8, 10, or 12 on an index card. - Collect the cards and use them to create a number line on the chalkboard showing the fractions from least to greatest.	- Harcourt Math Bk. 3 Teachers Edition pgs 422 & 423 - Scott Foresman Addison Wesley Math Bk. 3 pg. 418B - Index cards - bow	Write $<$, $>$, or $=$ to fractions. You can use fractions strips to help. Example $\frac{1}{4} \square \frac{3}{4} \qquad \frac{5}{6} \square \frac{4}{6}$ $\frac{1}{2} \square \frac{1}{3} \qquad \frac{1}{3} \square \frac{2}{3}$

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
15. Compare and order fractions with different denominators.	- Fraction bars can help you compare parts of a whole. Example: compare $\frac{1}{3}$ and $\frac{1}{4}$ $\frac{1}{3}$ $\frac{1}{4}$ The bar for $\frac{1}{4}$ is shorter than the bar for $\frac{1}{3}$. So, $\frac{1}{4} < \frac{1}{3}$ or $\frac{1}{3} > \frac{1}{4}$ - You can order three or more fractions from least to greatest or from greatest to least. Example: Order the fraction from least to greatest. $\frac{1}{10}$, $\frac{1}{2}$, $\frac{2}{6}$ Step 1 Compare the fractions $\frac{1}{10}$ and $\frac{1}{2}$ $\frac{1}{10}$ $\frac{1}{2}$ $\frac{1}{10} < \frac{1}{2}$ $\frac{1}{2}$ $\frac{2}{6}$ $\frac{1}{2} > \frac{2}{6}$ Therefore: $\frac{1}{10}$, $\frac{2}{6}$, $\frac{1}{2}$ Order the fraction from least to greatest $\frac{1}{10}$, $\frac{2}{6}$, $\frac{1}{2}$	- Put the cards in the bowl. Pick a card and read the fraction. Then have players take cards and tell if the fractions are greater than or less than the one you selected. Continue until each player has a turn. Then play again with a different benchmark fractions. - Give students models to shade. Let them work in small groups to compare given models  E.g. $\frac{1}{2}$ $\frac{4}{6} = \frac{2}{3}$ - Let students draw from a bag with given fractions to compare. The student with the larger fraction gets a point. The cards are put back in the bag and the process is repeated. The student who scores five points first is the winner.	- Harcourt Math Bk. 3 Teachers Edition pgs 422 & 423 - Scott Foresman Addison Wesley Math Bk. 3 pg. 418B - Index cards - bowl	- Write $<$, $>$, or $=$ to fractions. You can use fractions strips to help. Example $\frac{1}{4}$ $\frac{3}{4}$ $\frac{5}{6}$ $\frac{4}{6}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{3}$ $\frac{2}{3}$ - Give students sets of three fractions. Have them write them in order from least to greatest. E.g. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $=$ $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
16. Find equivalent fractions.	- Review: Numbers that are multiplied by one, equal the same number. Example of one as a fraction. $3/3, 4/4, 2/2$ - Multiply the numerator and denominator by the same number to find the equivalent fraction or divide the numerator and the denominator by the same number. E.g. $3/12 \times 4/4 = 12/48$ $3/12 \div 3/3 = 1/4$ These are equivalent because they represent the same amount ($1/4$).	- Interactive game where students match equivalent fractions. Equivalent Fraction Concentration - Groups are given a deck of equivalent fractions flash cards that are place face down. - Students draw two cards to find equivalent fractions. If the cards match, they keep the set. If the cards do not match, they are placed on the table. - The student with the most matched cards is the winner.	- www.harcourt_school.com - Harcourt Math Bk. 3 pgs. 418-420	Students create and solve equivalent fractions.
17. Find the simplest form of a fraction (Continued).	Simplest Form: A fraction with the numerator and denominator that cannot be divided by the same number except 1. - To simplify fractions, find a common factor that will divide evenly into the numerator and denominator. For example: 6/9	Give groups problems involving different operations of fractions where students have to reduce fractions. Example: David found 12 seashells. Four of them were conch shells. The rest of them were soldier crab's shells. In simplest form, what fraction of the shells were soldier crab shells?	- enVisionMath Bk. 3 pg. 295 - Harcourt Math Bk. 3 pgs. 436-438, 448, 482	Students write sums of fractions in simplest form.

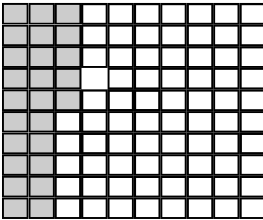
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
17. Find the simplest form of a fraction.	- Find the factors of the numerator and denominator. Factors of 6 = 1, 2, <u>3</u> Factors of 9 = 1, <u>3</u> * The common factor is 3 - To simplify the fraction, divide by 3. $6/9 \div 3/3 = 2/3$			
18. Read, write and draw representation for tenths and hundredths (Continued)	- A decimal is a number that uses place value and a decimal point to show tenths, hundreds and so on. - Decimals can show tenths. For example 0.4 Write: 0.4 Read: four tenths - Hundredths are decimal numbers. They are shown on a decimal square. Count to find the decimal that names the shaded part.	- How many tenths? - Give students 10 by 10 pieces of graph paper. Have them divide the square into 10 equal sections. Challenge students to use the drawing to solve exercises such as these: a. 0.3 b. 0.9 c. 0.7 - Relate a decimal to money by teaching 0.35 is 35¢. - Place students into groups. Give each group some ten cents and one cent pieces	- Harcourt Math Bk.3 Teachers Edition pgs. 454 – 457 - Mathematics Plus Bk. 3 pgs.366 – 369 - Graph paper 1cm	- Draw a decimal model to show the fractions three tenths. - How many equal parts of a hundredths decimal model would you shade to show 0.65? Explain your answer. - Read and write decimals for tenths and hundredths.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: NUMBER AND NUMBER SENSE
GRADE: 3

Sub-Goal 1: Demonstrate and apply knowledge of numbers, including multiple ways of representing numbers, relationships among numbers, and number systems.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
18. Read, write and draw representation for tenths and hundredths.	 Read: Twenty-five hundredths. Write: 0.25 Fraction: 25/100	- Let students explore and find the following: - How many ten cent pieces equal?: i) \$1.00, ii) 1/10 of a \$1.00 and (iii) 0.10 of \$1.00 - How many one cent pieces equal? (a) \$1.00 (b) 10¢ - What part of the \$1.00 is ?(a) 10¢ (b) 1¢ - Record findings in at least three (3) different ways.		

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, & ALGEBRA
GRADE: 3

Sub Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

1. How can I use place value to identify and extend number patterns?
2. How do tables, charts, and/or lists work together to solve problems?
3. What are the different ways to represent the patterns or relationships?
4. How can we compare expressions?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, & ALGEBRA
GRADE: 3

Sub Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Identify, extend and create repeating and growing numerical and symbolic patterns	- A repeating pattern is made up of shapes or numbers that form a part that repeats. E.g. O, Δ, O, Δ, _____ 1, 3, 5, _____ - A growing pattern is a pattern that extends based on the relationship of previous parts. Example: YBB, YBBB, YBBBB	Have students (about 6) make a line around the room. Have the first few students do as you say. For example, stand, sit, stand, sit, and then ask, “What should the next child do?”	- Harcourt Math Bk. 3 Teacher’s Edition pgs. 136 & 137 - Manipulatives	Students create repeated and growing patterns using numbers and symbols.
2. Identify and locate missing numbers on a number line	- You can use a number line to help you find a pattern. - Determine if the order of numbers is ascending (getting larger in value) or descending (becoming smaller in value). Example: Find the missing number: 30, 23, __, 9 - The order of numbers is going down or descending. - The missing number is 16 since it is 7 more than the last number 9.	Place a number line on the floor. Have students fill in the missing numbers on the number line.	- Harcourt Math Bk. 2 Teacher’s Edition pg. 5 www.ictgames.com/missingnumbers.html - Number line - Number cards	Interactive missing number game: Students click and type in the missing number shown with a triangular symbol. www.ictgames.com/missingnumbers.html

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, & ALGEBRA
GRADE: 3

Sub Goal 2: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Solve problems that involve pattern identification to complete patterns.	- A pattern is a strategy that can be used to solve problems. - You can use the order of shapes in a design to identify a pattern to solve a problem. To find patterns you can use the following steps. Step 1- Understand - What are you asked to find? - What information will you use? Step 2 - What strategy can you use to solve the problem? Step 3 - How can you use the strategy to solve the problem? Step 4 - How can you decide if your answer is right?	- Have students work in small groups to find examples of patterns in the classroom. Suggest that they look for patterns in books, magazines, on clothing or on object such as pencil, vases, or artwork that is displayed in the room. - Students solve problems in groups. Example It's time for the Literacy parade. The third grade decides to march in a special formation this year. One student walks in the first row, two students walk in the second row, and three students walk in the third row. This pattern continues. a. If the whole third grade marches in 10 full rows, how many students are in third grade? b. Use numbers, words, tables, and/or pictures to explain how you know your answer is correct.	- Harcourt Math Bk. 3, Teacher's Edition , pgs. 326 & 327 - Magazines http://www.mathwire.com/problemsolving	Lesson Quiz Examples: a. What will the next three shapes in the pattern be? O□►O□►... b. What are the next three numbers in the pattern? 14, 17, 20, 18, - - -

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, & ALGEBRA
GRADE: 3

Sub Goal 2: Use algebraic and analytical methods to identity and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Compare expressions using =, >, and < (Continued).	- An equation is a number sentence that says two expressions are equal. e.g. $5 + 3 = 10 - 2$ $8 = 8$ - Two sides of a number sentence can be equal or unequal. A symbol >, <, or = tells how the sides compare. Example: $3 + 4$ ○ $2 + 7$ $7 < 9$ - The symbol = means “is equal to”. In a number sentence, the symbol = tells that the value on the left is equal to the value on the right. Example a) $9 + \underline{\hspace{1cm}} = 11$ b) $10 = 3 + \underline{\hspace{1cm}}$ c) $17 - \underline{\hspace{1cm}} = 9$	Students complete equation puzzles where they match the equation with the correct response.	- Harcourt Math Bk. 3 pgs. 20-22 - Edhelper.com	Students complete expressions using =, <, and >.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: PATTERNS, FUNCTIONS, & ALGEBRA
GRADE: 3

Sub Goal 2: Use algebraic and analytical methods to identity and describe patterns and relationships in data, solve problems and predict results.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Compare expressions using =, >, and < .	An inequality is a number sentence that uses < or >. An inequality shows that two expressions are not equal. $5 + 6 > 10$ $11 > 10$			

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

1. What strategies can I use to solve addition and subtraction problems?
2. How can I show how to solve a multiplication problem in different ways?
3. How can I use multiplication to help me with division?
4. How can I use division to help me with multiplication?
5. Why is it important to know how to add and subtract compound units?
6. Why do mental models help me remember?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Recall addition and subtraction facts through 20 within a time frame of 3 seconds each.	- Addition means to add 2 or more numbers together to get a result. - Addends are the numbers that are combined or added together. - Sum is the answer to an addition problem. Students are to learn all the addition facts through 20 and be able to recall them within a period of 3 seconds each. - Commutative property of addition e.g. $7 + 2 = 2 + 7$ - Identity Property of Zero e.g. $7 + 0 = 0 + 7$	Beat the Clock - Addition and subtraction facts through 20. - Students are timed as they complete the worksheet to recall addition and subtraction facts. The student with the least time and the most correct is it the winner. (Aim: to complete each fact within the 3 second timeframe).	- Harcourt Math Bk. 2 Teacher's Edition, pgs. 25 & 26 - www.mathfourm.com - www.mathonline.com - www.kidsmath.com - Clock - Timer - Flashcards	- Assign students to complete an online assessment of addition and subtraction facts www.mathfourm.com www.mathonline.com www.kidsmath.com - or - Harcourt Math CD Rom Carnival Countdown -.Snap clowns
2. Estimate sums and differences (Continued).	- There are many estimation strategies. Rounding is a strategy that is useful for addition and subtraction. - Estimating has value in real life situations and is useful when you don't need to find an exact answer. - To round numbers, determine the digit to be rounded. Look at the digit to its right. If it is 0-4, the digit in the rounding place stays the same. If it is 5 or more, the digit in the rounding place increases by 1.	Have students write about a situation in their own lives when it is better to estimate than to find an exact answer. (Students might suggest estimating the amount of school supplies, such as paper and pencils that they will need for the school year.)	- Harcourt Math Bk. 3 Teacher's Edition pgs. 38 & 39; 54 & 55 - Mathematics Plus Bk. 3 Teacher's Edition pgs.70 & 71	- Lesson Quiz - Students think of situations in which they or members of their families have used the words "about ", approximately, or "close to" in giving answer to questions about groups of people, things, or costs of several items in store. Students share their answers.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2. Estimate sums and differences.	E.g. $\begin{array}{r} 88 \rightarrow 90 \\ + 91 \rightarrow + 90 \\ \hline 180 \end{array} \quad = \quad \begin{array}{r} 615 \rightarrow 600 \\ 167 \rightarrow 200 \\ \hline 400 \end{array}$ Remember estimate means to find the approximate value.			
3. Create and solve problems involving the addition and subtraction of money.	- Adding and subtracting money amounts is similar to adding and subtracting whole numbers. You add to find the total price of more than one item. You subtract to find the change you will receive. - When you add and subtract money, put the decimal point and the dollar signs in the correct places. (e.g. \$2.35)	- Have students write word problems with money amounts. - Have them write one problem using addition and another using subtraction of money amounts. - Have students exchange problems with a partner and solve.	Harcourt Math Bk. 3, Teacher's Edition, pgs. 88 & 89	Students find the sums and differences using the activboard. $\begin{array}{r} (1) \$ 1.53 \\ + \$ 2.27 \\ \hline \end{array} \quad \begin{array}{r} \$3.69 \\ - \$ 1.51 \\ \hline \end{array}$
4. Create and solve computational problems in addition using whole numbers up to 9 999 with and without regrouping (Continued).	Addition $\begin{array}{r} 7\,523 \\ + 2\,149 \\ \hline 9\,672 \end{array}$ Step 1: Add the ones. 9 ones + 3 ones = 12 ones Regroup 12 ones = 1 ten 2 ones Step 2: Add the tens 2 tens + 4 tens = 6 tens	- In cooperative groups, students create addition problems using whole numbers up to 9 999. - Problems are passed to other groups to solve. - Students explain how they arrived at the answers.	Harcourt Math Bk. 3 pgs. 40-49	Students create and solve addition problems.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations of addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Create and solve computational problems in addition using whole numbers up to 9999 with and without regrouping.	Step 3: Add the hundreds 5 hundreds + 1 hundreds = 6 hundreds Step 4: Add thousands 7 thousands + 2 thousands = 9 thousands			
5. Create and solve computational problems in subtraction using whole numbers up to 9999 with and without renaming.	Subtraction $\begin{array}{r} 237 \\ - 162 \\ \hline 075 \end{array}$ Step 1: Subtract the ones 7 ones - 2 ones = 5 ones Step 2: Subtract the tens 3 tens - 6 tens cannot be done so we have to regroup 1 hundred = 10 tens - 10 tens + 3 tens = 13 tens 13 tens - 6 tens = 7 tens Step 3: Subtract the hundreds 1 hundred - 1 hundred = 0 hundreds.	- In cooperative groups, students create addition and subtraction problems using whole numbers up to 9 999. - Problems are passed to other groups to solve. - Students explain how they arrived at the answers.	Harcourt Math Bk. 3 pgs. 56-65	Students create and solve addition and subtraction problems.
6. Explain multiplication as repeated addition (Continued).	- Multiplication connects directly to addition only when equal groups are used. - Multiplying is a way to find how many in all when groups have the same number of items.	Snappy Sums Have partners use connecting cubes to show the groups below. For e.g. for 3 twos, the partner makes 3 cube trains, each consisting of 2 cubes. After making the trains, partners tell how many cubes in all and compare their totals.	- Harcourt Math Bk. 3 Teacher's Edition, pgs. 116 & 117 - Mathematics Plus Bk. 3, pgs. 166 & 167 - Connecting Cubes	Students explain using examples how multiplication is seen as repeated addition

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT										
6. Explain multiplication as repeated addition.	e.g. $2 + 2 + 2 = 6$ $3 \times 2 = 6$ (answer) Number of groups Amounts in each group E.g. $\begin{array}{r} 10 \\ \times 2 \\ \hline 20 \end{array}$ When multiplying a 2- digit number by a 1-digit number, think of the 2 digit number in terms of tens and ones.	<table><tr><td>1st partner</td><td>2nd partner</td></tr><tr><td>3 twos</td><td>2 threes</td></tr><tr><td>4 threes</td><td>3 fours</td></tr><tr><td>4 fives</td><td>5 fours</td></tr><tr><td>2 eights</td><td>8 twos</td></tr></table>	1st partner	2nd partner	3 twos	2 threes	4 threes	3 fours	4 fives	5 fours	2 eights	8 twos		
1st partner	2nd partner													
3 twos	2 threes													
4 threes	3 fours													
4 fives	5 fours													
2 eights	8 twos													
7. Model multiplication using arrays.	- An array shows objects in equal rows. e.g. 00000 00000 00000 00000 - The counters show 4 rows of 5. Each row is a group. You can use addition to find the total. - Multiplication can be used to find the total in an array. $\begin{array}{ccccc} 4 & \times & 5 & = & 20 \\ \swarrow & & \searrow & & \\ \text{number of rows} & & \text{number in each row} & & \end{array}$	- Teacher places students in pairs. One child spins for the number of tiles in each row. The other student should spin to show the number of rows. Students arrange the tiles to form a rectangle to show the number of rows and the number of tiles in each row. - Students state the shape they have made. They discover if there is another way to arrange the array. - Teacher asks, “What happens if you turn the array side ways? How is this array like a multiplication fact?”	- www.athens.edu - Spinner with numbers 1-4 16 coloured tiles - Harcourt Math Bk. 3 pgs. 138-141	Students use pegboards to model multiplication using arrays. Students create 4 number sentences from the arrays and explain the commutative property.										

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
8. Identify and use multiplication and division facts through 9 x 9.	- Teacher connects fact families and commutative property to multiplication and division facts. - The NINE multiplication facts is the one less = nine method. Subtract one from the number you are multiplying by. Example 9×5 (One less than 5 is 4).The first number in the answer is 4. The two numbers that make up the answer will equal 9. So $4 + \underline{\quad} = 9$ (5).The last number in the answer is 5. $9 \times 5 = 45$.One less than 5 is 4 (45) The answer adds up to nine. $4 + 5 = 9$	Put students in groups and assign each group a multiplication table. Let the group work together to create a poster that illustrates a viable strategy that can be applied to find solutions to those facts. E.g. doubles.	http://www.multiplication.com - Harcourt Math Bk. 3 pgs. 222 & 518	Journal Writing: Write at least three sentences containing the words double or doubling. Draw picture to represent one of the sentences. Share sentences and pictures.
9. Multiply numbers with at least 2 digits by 1 digits (be certain 0 is in different positions).	Multiply to find the value of ones and then the values of tens. E.g $\begin{array}{r} 70 \\ \times 4 \\ \hline 280 \end{array}$ Step 1: Multiply the ones Step 2: Multiply the tens.	Have students multiply 2 digit numbers. Ask them to solve the following problems. a. If you blink 12 times a minute, how many times do you blink in 8 minutes? b. If your heartbeat 73 times a minute how many time does it beat in 5 minute.	Harcourt Math Bk. 3 Teacher's Edition, pgs. 488 & 489	Activity sheet with multiplication problems.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
9. Multiply numbers with at least 2 digits by 1 digits (be certain 0 is in different positions). (Continued)		c. If for breakfast each day you eat 24 ounces of food, how many ounces of food will you eat for breakfast in a week?		
10. Create and solve multiplication problems	Some vocabulary words for multiplication are times, everyday, and at this rate. Example Daniel reads 25 words per minute. At this rate, how many words does he read in one hour?	- In cooperative groups, students create multiplication problems. - Problems are passed to other groups to solve. - Students explain how they arrived at the answers.	http://www.mathstories.com	Quiz: Problem Solving
11. Explore the meaning of division.	- Division can help you find how many items are in each group and how many equal groups there are. - Division can be modeled with counters. - Division is the operation used to find out how many are in each equal group. - The quotient is the answer to a division problem. e.g. $6 \div 3 = 2$ 6 counters grouped in threes give 2 groups.	- Have students use 12 counters to represent team members. Find the number of players if there are 2 teams, 3 teams and 6 teams. - Have students discover the pattern using the counters and team members.	Harcourt Math Bk. 3, Teacher's Edition pgs. 184-185	Write a poem, jingle or story about the meaning of division.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
12. Explain the relationship between multiplication and division using word, pictures or concrete objects	- To find a quotient, use an array and count the number in each equal row. - Use a related multiplication fact to find a quotient. - Quotient is the answer of a division problem. - Multiplication and division are inverse operations. If $4 \times 3 = 12$ then $12 \div 3 = 4$	- Divide the class into two teams give one team the multiplication cards and the other team the division cards. - Allow each player to find their partner on the other team by finding their inverse operation.	Harcourt Math Bk. 3, Teacher's Edition, pgs. 188 - 193	Have students write the inverse operation for given operations. e.g. $4 \times 8 = 32$ $32 \div 8 = 4$
13. Model division as repeated subtraction.	- Repeated subtraction may be used to solve a division problem. When using repeated subtraction, start with the total and subtract equal groups until you reach 0. - Count the number of times you subtract to find the quotient. When using repeated subtraction to find a quotient, you are skip-counting backward. - Division may be written in two forms with a division house or as a division sentence.	- Have each students use a number line to solve this problem: A bug started at 12 on the number line and made hops of 2 spaces each, until it gets to 0. - How many hops did the bug make? - Have students write 2 insect problems that involve a number line. Pairs of students exchange papers and solved each others problems.	- Harcourt Math Bk. 3, Teacher's Edition, pgs. 186 & 187 - Mathematics Plus Bk. 3 Teacher's Edition pgs. 228 & 229 - Number line	- Have students write in their mathematics journals. - Why is division called repeated subtraction? - Have students show examples in their journals.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
14. Multiply numbers up to 9 999 by a 1-digit number.	$\begin{array}{r} 2\ 605 \\ \times \quad 8 \\ \hline 20\ 840 \end{array}$ Step 1: Multiply the ones. $8 \times 5 \text{ ones} = 40 \text{ ones} - \text{Regroup}$ Step 2: Multiply the tens. $8 \times 0 \text{ tens} = 0 \text{ tens}$ Add the regrouped tens. Step 3: Multiply the hundreds. $8 \times 6 \text{ hundreds} = 48 \text{ hundreds} - \text{Regroup}$ Step 4: Multiply the thousands $2 \times 8 = 16$ Add the regrouped hundreds. Use decimals as well.	Students solve multiplication problems.	- enVisionMath Bk. 3 - Harcourt Math Bk. 3 pgs. 524-533	Answer questions related to the topic. Example: $\begin{array}{r} 4\ 231 \\ \times \quad 4 \\ \hline \end{array} \qquad \begin{array}{r} 1\ 234 \\ \times \quad 3 \\ \hline \end{array}$
15. Divide numbers up to 9999 by a 1-digit number including situations where there is a remainder	- Division is an operation that is used to find how many equal groups or how many are in each group. E.g. $23 \div 5 = 4 \text{ r} 3$ ↙ Total ↓ Number of equal groups ↘ Number in each group → Remainder - The part that is left over when we divide is called the remainder.	Division Homerun Class is divided into two teams. The teacher calls a division problem and the first student on line gives the answer. If he/she is correct, he/she moves to the first base. If answer is incorrect, he/she is knocked out. The game continues until there are three incorrect responses. When this occurs, the next team bats.	- enVisionMath Bk. 3 pg. 190 - Flash cards - Harcourt Math Bk. 3pgs. 304-307, 502-511	Activity sheet with division with and without remainders.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
16. Add and subtract measurements in compound units.	100 cm = 1 m - Addition $\begin{array}{r} \text{m} \quad \text{cm} \\ 2 \quad 70 \\ + 3 \quad 45 \\ \hline 6 \quad 15 \end{array}$ Step 1: Add the cm. $70 + 45 = 115$ $115 \text{ cm} = 1 \text{ m } 15 \text{ cm}$ Step 2: Add m. $2 + 3 + 1 = 6$ - Subtraction $\begin{array}{r} \text{m} \quad \text{cm} \\ 2 \quad 25 \\ - 1 \quad 50 \\ \hline 0 \quad 75 \end{array}$ Step 1: Subtract cm. Need to rename. Change 1 m and add to 25 cm $125 \text{ cm} - 50 \text{ cm} = 75 \text{ cm}$ Step 2: Subtract m $1 - 1 = 0$	In groups have students solve problems using compound units (linear and customary) Example: a. How many centimeters must I cut from a rod 5.2 cm long to have 4.5 left? b. Joseph is 1m 25cm tall. James is 1 m 35 cm. How much taller is James?	- Primary Maths for Caribbean Schools Bk. 3 pg.112 http://www.rwc.uc.edu	Independent practice on solving problems. Example: a. The school garden has rectangular plots each measuring 4m long and 3m wide. How far must you walk to go around one plot?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: COMPUTATION AND ESTIMATION
GRADE: 3

Sub-goal 3: Estimate and understand the meaning, use, and connection between the four (4) basic operations; addition, subtraction, division, and multiplication.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
17. Multiply and divide tens, hundreds, and thousands by a 1-digit number.	- When we multiply by ten, every figure moves one place to the left. Ones become tens, tens become hundreds, and hundreds become thousands. The gap in the ones place is filled by a 0. - When we multiply by 100, every figure moves two places to the left. The gaps in the ones and tens columns are filled by 0. - When you divide a decimal number by 10, you move all the digits one place to the right. The number becomes ten times smaller. E.g. $350 \div 10 = 35$	Students solve problems using multiplication and division strategies.	enVisionMath Bk.3 pg. 444	- Complete problems. Example - For the concert, the 64 members of the Royal Bahamas Police Force Band were divided equally into 4 different groups. How many band members were in each group?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

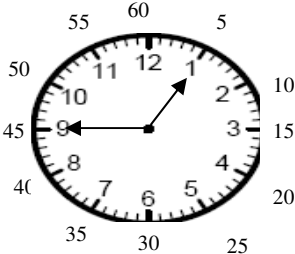
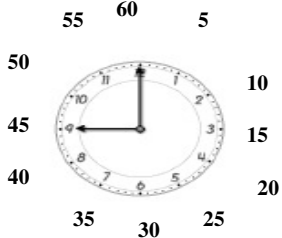
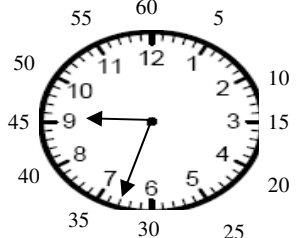
Sub-Goals 4: Make and use measurements of objectives, qualities, and relationships and determine acceptable levels of accuracy.

Essential Questions

1. Why is elapsed time important and how can it be used in everyday life?
2. How can one convert between units of time?
3. What types of problems are solved with measurement?
4. What are tools of measurement and how are they used?
5. How can you make change from a given amount of money?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Tell time to the nearest five minutes (Continued).	- It takes 5 <u>minutes</u> for the <u>minute hand</u> to move from number to number.  - Remember there are 60 minutes in one hour.  - Remember there are 30 minutes in a half hour. 	- Review skip counting by fives. Draw a series of 5 pointed stars on the board or have children flash their fingers as they count aloud to 60: 5, 10, 15, 25, 30, 35, 40, 45, 50, 55, and 60. Explain that there are 60 minutes in one hour. - Direct children's attention to the classroom clock. Then have groups of 12 children form large circles. - Practice going around the circle with each child adding 5 minutes to the time said before. The first child says "5 minutes". The next child says "10 minutes" and so on. The twelfth child says "60 minutes equals 1 hour". Repeat until everyone has had a turn.	Harcourt Math Bk. 2 Teacher's Edition pgs. 125 & 126	- Display 9:35 on the classroom clock. Discuss and write how can you find how many minutes have passed since 9 O' clock? - What time is it if the minute hand now moves to 9?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Tell time to the nearest five minutes.	VOCABULARY Minute- a unit of time equal to 60 seconds. Minute hand – the longest hand on an analog clock; it designates minutes. Hour- a unit of time equal to 60 minutes Half hour- a unit of time equal to 30 minutes.	- In cooperative groups, students create and report scenarios of a.m. and p.m. activities. - Play the game ‘Time for Bingo’. Download the bingo game board, instructions and materials for telling time to the nearest five minutes from. superteacherworksheets.com/time/clock	- enVisionMath Bk 3 pg.392 - superteacherworksheets.com/time/clock.	- Have students decide whether the time is a.m. or p.m. E.g. Would the time the bus arrives at school more likely be 8.30 a.m. or 8.30 p.m. - Would you be more likely to eat lunch at 12.20 am or 12.30 p.m.
2. Identify events taking the same amount of time, more time than, or less time than.	- We tell time in minutes, hours, days, weeks, months, and years. - Some events take the same amount of time, more time than, and less time than.	- Model time relationships. - Create a list of events taking the <i>same amount of time, more time than or less time than</i> other events. Have students draw three columns. Label each the following: <i>same amount of time, more time than, and less time than</i>. Tell them to sort events into three categories.	- Analogue clock - Calendar	Classify events taking the same amount of time, more time than, or less time than
2. Apply vocabulary associated with time using a.m., p.m., noon, or midnight (Continued).	- The hours between noon and midnight are p.m. hours. A. M. stands for ante meridian meaning before noon. P. M. stands post meridian meaning afternoon. A. M. and P. M. start immediately after midday. Midnight and Noon (Midday) respectively.	- Students match word to its meaning. - In groups, draw and write events that occur at specific times. For example, breakfast, lunch, and the like.	tf.nist.gov/general/misc.htm	Journal entry: Write to explain why it is incorrect to use the terms 12:00 a.m. and 12:00 p.m.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Apply vocabulary associated with time using a.m., p.m., noon, or midnight.	• Use 12 noon and 12 midnight for clarity. Do not use the terms 12.00a.m. and 12.00 p.m. It is incorrect. • Noon is neither before or after noon; it is simply noon. Therefore, neither the "a.m." nor the "p.m." designation is correct. On the other hand, midnight is both 12 hours before noon and 12 hours after noon. Therefore, either 12 a.m. or 12 p.m. could work as a designation for midnight, but both would be ambiguous as to the date intended. • Everyday starts precisely at midnight and a.m. start immediately after that point in time. • To avoid ambiguity, airlines, railroads, and insurance companies use 12.01 a.m. for an event beginning the day and 11.59 p.m. for ending it. • The hours of the day between midnight and noon are a.m. hours.			

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Identify equivalent periods of time including relationships among days, months and years and hours, minutes and seconds.	Time Relationships - There are 60 minutes in 1 hour. - There are 24 hours in a day. - There are 7 days in a week. - There are 28, 30 or 31 days in 1 month - There are 12 months in 1 year There are 52 weeks in 1 year	- Name two time periods and have children tell which time period is longer. - Help them see that a time period is made up of a number of time periods and have children tell which time period is shorter. - Have children use their clocks and calendars to model time relationships. How many days are in a week? - Ask children to point to and count each day on the calendar. (7 days) - How many hours does your birthday last? (24 hours) - Have children explain their reasoning. (Because my birthday is one day long.)	www.eduplace.com	- Quiz Example: How many minutes are in 1 hour 1 and a half hours 2. How many months are in 1 year - half a year
5. Use a calendar to identify specific dates (Continued).	- Calendars are tables that show the days, weeks, and months of a year in order. - Remember 7 days = 1 week 12 months = 1 year	- Give a current calendar to each group. Ask each student to find his or her birthday. i. On what day of the week does your birthday fall this year? Write the date including the day.	- www.eduplace.com - calendars	Highlight specific dates on calendars and write the ordinal and cardinal numbers.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
5. Use a calendar to identify specific dates .	The calendar shows the order of dates so, use ordinal numbers to name dates. Write Read June 1 June first March 4 March fourth May 3 May third October 2 October second	Example: a. Thursday, May 24th b. Does your birthday fall on the same day of the week each year? Have a student report to the class who will have the next birthday and who had the most recent birthday.		
6. Calculate elapsed time to the day with calendars and to the hour with a clock.	- Elapsed time is the total amount of time that passes from the starting time to the ending time. - Ensure that students identify the beginning and ending times correctly. - Find the starting time. Count the hours and minutes to find elapsed time after identifying ending time.	- Have students label a calendar month beginning with the first Monday. - Have groups answer questions about the calendar. E.g. what is the date of the second Thursday in March? Suppose you have ball practice on Saturdays. How many practice days do you have in March? - Have students use clocks to find elapsed time. Ask questions. E.g., Sean and Kiara went to the carnival at 3 o'clock in the afternoon. They left at 11 o'clock in the evening. How long did they stay at the carnival?	enVision Math Bk. 3 pg.400	Have students use a schedule to calculate elapsed time.

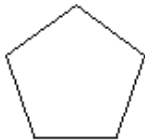
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
7. Convert between Units of time	- To convert weeks to days, multiply the number of weeks by 7. E.g. 4 week = $4 \times 7 = 28$ days - To convert days to hours, multiply the number of days by 24. E.g. 7 days = $7 \times 24 = 168$ hours. - To convert hours to minutes, multiply the number of hours by 60. For example, 6 hours = 144 minutes.	- Riddles Example: I am known as four weeks. a. What is my name? Answer: 28 days b. I am 5 weeks. What is my name in days? - Give students practice converting units of time: E.g. 730 days = ___yrs; 3 yrs. = ___ days.	- www.lxl.com - www.9a9math.com	Explain why 8 weeks is equivalent to 56 days and write how many months are in 8 weeks.
8. Read and record temperatures on a thermometer and interpret the readings.	- A thermometer measures temperature. Degrees (°) of Celsius (C) and Fahrenheit (F) are units of temperature. - Water freezes at 32°F or 0°C. Water boils at 212°F or 100°C. - Room temperature is 68°F or 20°C. - Degrees Fahrenheit is the customary unit of temperature. - Degrees Celsius is the metric units of temperature.	Measuring Temperature: - Estimate the temperature outside the classroom in degrees Celsius and in degrees Fahrenheit. Record your estimates. - Measure the temperature outside the classroom using thermometers. Record the differences between your estimates and the actual measurements.	Celsius and Fahrenheit thermometer.	Use data from a chart where students have measured temperatures at the same time every day for a week in the Celsius and Fahrenheit. Students answer questions from the chart. Examples: a. Which day shows the highest temperature? b. Which day shows the lowest temperature ?

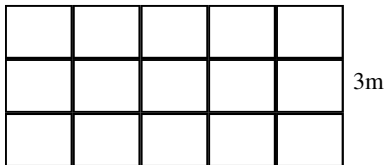
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
9. Estimate and measure length in metres, decimeters, centimetres, and millimetres.	- In the metric system, centimetre (cm), decimetre (dm), meter (m) and millimetres are used to measure length. - A centimetre is about the width of your index finger. - A decimetre is about the width of an adult's hand. - Your armspan is about 1 meter long. - A millimetre is about the thickness of a coin. (penny)	- Have each student make a simple drawing that includes 4 line segments of different lengths (5cm- 15 cm), as well as some curved lines. - Pairs of students measure the line segments, record the lengths, and discuss the results with their partners. - Have students draw lines according to the length provided: E.g. Draw the following lines: 3.9 cm, 8 cm, 4 cm, etc.	- Harcourt Math Bk.3 Teacher's Edition pgs. 330 & 331 - Centimeter rulers	- Discuss: Why would it be better to measure the length of a chalkboard in meters rather than in centimeters? Write: Why is it important to have more than one unit of measure? Lesson Quiz Choose the unit you would use to measure each. Write cm, m or mm. - The length of a basketball court. - The thickness of a nickel. - The length of an eraser - The length of a notebook.
10. Estimate and find the perimeter of polygons using standard and non standard measurements (Continued).	- The distance around a figure is called its perimeter. - To determine the perimeter of a shape by measurement first you need to measure each side of the shape and then add all their measurements together. - A polygon is a closed plane figure whose sides and angles are equal.  To find the perimeter of a regular polygon, measure one side and then multiply the length of the side by the number of sides.	Ten Squares Have students draw as many different shapes as possible that have a perimeter of 10 units. - Teach children the following memory prompt: How about P for perimeter, P for post. Fence posts will go all the way around the perimeter. - Have students point out objects and buildings in the community that resemble polygons. Have them draw some of these objects/buildings, label them and find the perimeter.	- Harcourt Math Bk. 2 Teacher's Edition pgs. 277 & 278 - Mathematics Plus Bk. 3, pgs. 298 & 299 - Graph paper 1cm.	Discuss and write how to find the perimeter of a plane figure. Use diagrams to help you.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
10. Estimate and find the perimeter of polygons using standard and non standard measurements.	Pentagon = 5 equal-sided polygon Perimeter = 5 x length of side			
11. Estimate and find area of shapes using non-standard and standard measurements.	The area of a figure is the number of square units needed to cover its surface. Count the square units  5m 3m The area is 15 square cm.	Building understanding. - Cover a book using counters. - About how many do you think you will need? - How many counters did you need? - Is the book covered completely? - Use square tiles or squares of paper to cover a book with squares. Students answer the following questions. - Estimate the number of squares you will need? - How many squares did you need? - Is the book covered completely?	- Mathematics Plus Bk. 3 Teacher's Edition pgs. 300 & 301 - Trundle Wheel	Ask students to explain how 2 differently shaped figures can have the same area. (The area of 2 differently shaped figures can be the same because the area is just arranged in different ways).
12. Estimate and measure capacity using litres, and milliliters	- Capacity can be measured by using metric units such as the millilitre (ml) and litre (L). - A medicine dropper holds about 1ml. - A water bottle holds about 1L. - A water glass holds about 250ml.	- Challenge students to identify metric measurements of capacity. Have them make a list of containers that might be found in their homes. - Next to each item, students should indicate whether the label on the container would show the measurement in millilitres or litres. Encourage students to share and compare their lists.	Harcourt Math Bk. 3 Teacher's Edition, pgs. 378 & 379	- Discuss: What is the relationship of millilitres to litres? - Choose the unit you would use to measure each. Write L or ml. - A tank of gasoline - A bottle of syrup - A jug of laundry soap.
13. Estimate and measure mass in grams and kilograms (Continued).	The gram (g) and the kilogram (kg) are metric units for measuring mass.	Estimate and measure objects.	Harcourt Math Bk.3 Teacher's Edition, pgs. 380 & 381	Discuss: Brainstorm a list of objects that have a mass of about 1 gram and about 1 kilogram.

SCOPE OF WORK
PRIMARYSCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT									
13. Estimate and measure mass in grams and kilograms.	- A paper clip has a mass of about 1 gram. - A large book has a mass of about 1 kilogram.	Have pairs of students choose five objects; estimate the weights in g or kg and then use the balance scales to determine the actual weights. Students should record their findings on a chart. <table><tr><th>Objects</th><th>Estimated Weight</th><th>Actual Weight</th></tr><tr><td></td><td></td><td></td></tr></table>	Objects	Estimated Weight	Actual Weight				- Mathematics Plus Bk. 3 pgs.336 & 337 - Balances - Scales - Grams and kilogram weights	If a book has a mass of 500 grams, how many books of this size will you need to have a mass of one kilogram? Explain.			
Objects	Estimated Weight	Actual Weight											
14. Convert units within systems using multiplication (Continued)..	- To convert within the metric units, multiply or divide by 10, 100 or 1000. - Multiply to change larger units to smaller units. E.g. 7cm = <u>70 mm</u> 7 x 10 = 4m = <u>400</u> cm 4 x 100 = 400 - Converting within customary units, multiply to change larger units to smaller units. 12 inches = 1 foot 3 feet = 1 yard 4 quarts = 1 gallon 2 pints = 1 quart E.g. 3 quarts = 6pts Each quart equals 2 pints = 3 x 2 = 6	Have students collect objects such as detergent bottles or food boxes. Allow them to use the outlined measurements and convert to other units.	enVisionMath Bk. 3 pgs.338-354	Create a chart to show equivalent measures using different units. <table><tr><th>Item</th><th>Measurement</th><th>Conversion</th></tr><tr><td>Cereal</td><td>5 g</td><td>_____mg</td></tr><tr><td>Cloth</td><td>5 yds.</td><td>_____ft</td></tr></table>	Item	Measurement	Conversion	Cereal	5 g	_____mg	Cloth	5 yds.	_____ft
Item	Measurement	Conversion											
Cereal	5 g	_____mg											
Cloth	5 yds.	_____ft											

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: MEASUREMENT
GRADE: 3

Sub-Goals 4: Make and use measurements of objects, qualities, and relationships and determine acceptable levels of accuracy.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
14. Convert units within systems using multiplication.	How many meters are in 5 kilometers? Think 1km = 1000m 2km = 2000 5km = 5 x 1000 = <u>5000</u>			
15. Make change for purchases \$20.00 or less.	- Change is the difference between the price of an item and the amount you give the clerk. The clerk will give back change. Example: if an item cost .47¢ and you give the clerk .50¢, you will receive .03¢ change. - Counting on is one way to make sure you get the correct amount of change when you buy something.	- Divide the class into 4 or 5 groups. Allow each group to sell different items (e.g. one group sells toys, one group food, one group DVD's or CD's; one group games etc.). Base items on students' interest. - Allow students at different times to go to each group and make a purchase. Make sure items do not cost more than \$5.00. This activity can be extended where students set up booths and have other students from other classes or grades come to make purchases.	- Harcourt Math Bk. 2 Teacher's Edition, pgs. 117 & 118. - Harcourt Math Teacher's Edition Grade 3 pgs. 86 & 87, - www.kidsmath.com	Discuss: - How can the cashier count out the change when you pay with \$5.00 for a \$2.55 item? Write: - Using as few coins as possible, make change from a \$5.00 bill for groceries that cost \$4.77. Explain how you found your answer.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 3

Sub-Goal 5: Use geometric methods to analyze, categorize, and draw conclusion about points, lines, planes, and space.

Essential Questions

1. What are the properties of shapes?
2. How are solid figures different from plane figures?
3. How can I use plane shapes to help me identify different geometric solids?
4. What strategies can be used to verify symmetry?
5. What happens when you change a shapes position and orientation (slides, flips, and turns)?
6. How is the world of geometry connected to the world of numbers?

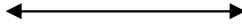
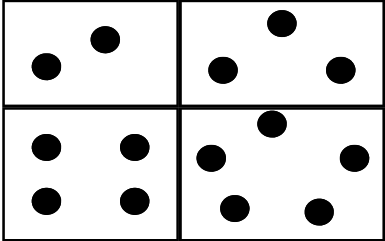
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 3

Sub-Goal 5: Use geometric methods to analyze, categorize and draw conclusion about points, lines, planes and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Classify common shapes (plane and solid) and explain their properties in simple terms (Continued).	• A plane shape is a geometric shape that has no thickness. It lies in one plane. • Solid figures have three dimensions. • Circles, squares, triangles, rectangles and ovals are plane figures. • Sphere is a solid figure whose curved surface is the same distance from the center at all points. • Cone is a solid pointed figure that has a flat, round base. • Cylinder is a solid object with two identical flat circular ends and one curved side. • Cube is a three dimensional figure with 6 congruent square faces • Circle is a flat, round closed plane shape. All points on the circle are the same distance from the center point. • Square is a rectangle with all 4 sides of equal length.	Who am I? • Put out three or more objects (such as a ball, a party hat, and a box). Describe one of them (it is round all over, it is flat on the bottom, it sides are all flat) and have the children guess which object you are describing. How many sides? • This activity uses pattern blocks. If you do not have pattern blocks you can use other shapes or cut shapes with different number of sides from construction paper. Each child needs only one shape for this activity. • Call a number and ask children who have a shape with that number of sides to stand. (Be sure to call numbers such as two and seven, to which no one will stand). Then have a search for all different shapes that have three sides, four sides, five sides, six sides, and zero sides (the circle).	• Harcourt Math Bk. 2, Teacher's Edition, pgs. 255 – 260 • Harcourt Math Bk. 3, Teacher's Edition, pgs.294 – 295 • Helping Children Learn Mathematics, pgs. 222- 230 • Geometric shapes	• Discuss and write Display a solid figure, and have children to draw the plane shapes they could trace from the faces of that solid figure. Students then write the properties of the shapes.

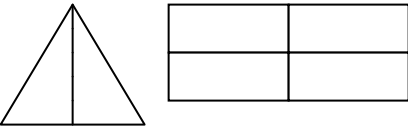
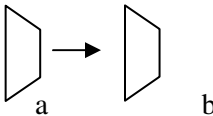
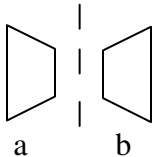
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 3

Sub-Goal 5: Use geometric methods to analyze, categorize and draw conclusion about points, lines, planes and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Classify common shapes (plane and solid) and explain their properties in simple terms.	• Triangle is a closed plane shape with 3 sides and 3 corners. • Rectangle is a closed plane shape with 4 sides and 4 square corners. • Oval is a closed plane shape that looks like a stretch circle. • Side is a straight part of a shape • Corner is the place where 2 or more edges meet.			
2. Identify and draw points, lines, and line segments using rulers and straight edges.	• A point is an exact location or position  A and B are points on a line. • A line is straight. It continues in both directions. It does not end.  • A line segment is straight. It is the part of a line between two points, called end points  • Use a ruler or an object with a straight edge to draw a line.	How many segments? • Have students complete the following by drawing as many line segments as possible between the points in each example.  • Have students draw lines of various length. For example 5 cm, 10 cm, 2 ins, 4 ins.	• Harcourt Math Bk. 3 Teacher's Edition. pg. 300 • Mathematics Plus Bk.3 Teacher's Edition, pg. 288	• Have students explain each term point, line, line segment in their mathematics journals.

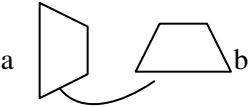
SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 3

Sub-Goal 5: Use geometric methods to analyze, categorize and draw conclusion about points, lines, planes and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
3. Identify lines of symmetry in familiar shapes	- An imaginary line that divides a figure in half is called the line of symmetry. - If you fold a figure along a line of symmetry, both sides match. 	Student folds a sheet of paper in half and make a simple drawing on only one side of the fold. Partners exchange papers and try to complete the drawing on the other side of the paper, using the fold as a line of symmetry.	- Harcourt Math Bk. 2 Teacher's Edition, pgs. 245 – 246 - Harcourt Math Bk. 3 Teacher's Edition, pgs. 334 – 335 - Mathematics Plus Bk. 3, pg. 292 - Mira	Discuss: - Describe lines of symmetry for the figure below.  Write - What strategy could you use to locate the lines of symmetry in a figure?
4. Explore slides, flips, and turns (Continued).	Slide is a movement of a figure to a new position without turning or flipping it. e.g. slide  Flip is a movement that involves flipping a figure across an imaginary line. To flip a shape is to reflect it over a line 	- Students' model the motions slide, flip and turn. - Have students place an index card on the left side of their desks and then slide it to the right side. Ask: What has changed? (the location) - Next tell students to place the card down and turn it over. Ask: What has changed? (Now I can see the reverse or other side)	- Harcourt Math Bk. 3 Teacher's Edition, pgs. 249 - 252 - Harcourt Math Bk. 3 Teacher's Edition, pgs. 338 – 339 - Index cards	Discuss and write - What does it mean to flip, turn, and slide an object? - Have students use pattern blocks or other simple objects to demonstrate slide, flip and turn.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: GEOMETRY
GRADE: 3

Sub-Goal 5: Use geometric methods to analyze, categorize and draw conclusion about points, lines, planes and space.

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Explore slides, flips, and turns.	Turn: A move that involves rotating a figure turn 	c. Have students place the card with the long side running from top to bottom in the middle of the desk and move it so that the long side is going from side to side on the desk. d. Ask: what has changed? Explain. It is pointing in a different direction). Check students work		

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 3

Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability

Essential Questions

1. What kinds of questions can be answered using different data displays?
2. What are the parts of a graph?
3. What predictions can you make based on data given?
4. What is the benefit of charts, tables, and graphs in our daily lives?
5. How is probability used to predict outcomes in problem-solving?

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 3

Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
1. Collect, record and interpret data on horizontal and vertical bar graphs	• Data: Information collected about people or things. • Tally Table: A chart used to summarize the number of time items occur in a set of data. • Frequency Table: A table that uses numbers to record data. • Bar graph: A kind of graph that uses rectangular bars to show information. The bar can be vertical or horizontal. • Horizontal bar graph: A graph with bars going across from left to right. • Vertical bar graph: A graph with bars going up from the bottom. • Scale: The numbers on a bar graph that helps you read the number each bar shows.	• Have students conduct a survey of about 30 people finding out their favorite color, sports or TV channel. a. Allow students to collect this data using a tally sheet. b. Using their tally sheets, have students create a frequency table. • Have students create a bar graph of the birthdays of their classmates. Also, have them write questions pertaining to the graph that the other students or teachers in the school can answer.	• Harcourt Math Bk. 3 Teacher's Edition pgs. 238-255 • Behumane The Bahamas Humane Society Resource Manual	• Discuss how horizontal and vertical bar graphs alike and different? • Complete Survey 2.2.1 (Top Ten Pets) in Behumane The Bahamas Humane Society.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 3

Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
2. Draw graphs to include title, label and a key where needed.	- A graph is a way of organizing and displaying data. - All graphs include a title and labels - Some graphs have a key. - There are different types of graphs. Pictorial graphs uses pictures to stand for numbers and it must always have a key to tell you how much each picture represents. - A bar graph uses bars that are usually horizontal or vertical. The bars are used to show numbers. - The bars in bar graphs do not touch. If bars touch, it is a histogram.	- Have students work in groups of four to make their graphs from a survey they have conducted. - Remind students to include title, labels, and a key where needed. - Give groups of students a bag of M & Ms or Skittles. Tell them to count the number of each color. Have them enter the numbers on a graph. Remind them to include the title and labels.	Harcourt Math Bk. 3 Teacher Edition pgs. 256 & 257	- Discussion What are the important parts of a graph? - Write/Explain how a bar graphs and a pictographs are alike and how they are different.
3. Solve questions related to data representation, including finding the range and mode.	Range: The difference between the highest and lowest values in the set. Example: { 35, 40, 80, 107, 225} Range 225- 35 = 190 Mode: The most frequent number found in a collection of data	- In groups, students list their ages and find the range and mode of the ages. - Find the range and mode of data from graphs.	- homeschool.com - edhelper.com - Harcourt Math Bk. 3 pg. 258	Find the range and mode of given data.

SCOPE OF WORK
PRIMARY SCHOOL MATHEMATICS
STRAND: STATISTICS AND PROBABILITY
GRADE: 3

Sub-Goal 6: Collect, organize; and analyze data using statistical methods: predict results; and interpret uncertainty using concepts of probability

OBJECTIVE	CONTENT	ACTIVITIES	RESOURCES	ASSESSMENT
4. Analyze graphs, draw conclusions, and make predictions.	- To analyze data you can look at the mean, mode, range to make conclusions. - Conclusion is the result or outcome of a development.	Students create graph on their favorite subjects. They analyze, make predictions, and draw conclusions from the data. Example a. Why do you think more students like Social Studies than Science? b. What is the range of the two most favoured subjects?	- www.harcourtschool.com - helpingwithmath.com - Harcourt Math Bk. 3 pgs. 280 & 281	Analyze, draw conclusions, and make predictions based on information displayed on a graph.
5. Apply the terms possible, impossible, always, sometimes, never, and no to everyday situations	Event: Something that happens Certain: Describes an event that will always happen. Possible: Something that has a chance of happening. Impossible: Describes an event that will never happen	Label a two column chart “Possible” and “Impossible”. a. Students describe events that happen everyday which are placed in the “Possible” column b. Then ask students to tell things that could never happen to them. For example “arriving at school in a space ships.”	Harcourt Math Bk. 3 Teacher’s Edition pgs. 270 & 271	Discussion If you use a spinner with three equal parts that are orange, red and yellow, what is a possible (certain) event? An impossible event. Write: Describe two events that are certain to happen in the classroom and two events that are impossible.

Primary School Mathematics

Problems of the Day

Grade 1

PROBLEMS OF THE DAY: GRADE 1

Instructions: The following can be read aloud or written and discussed with students.

Alternatives

▲	1	2	3	4	5	6	7	8	9	10	11	12
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Change instructions.

1. Begin at the ▲. Take 8 hops forward. Take 2 hops back. Take 6 hops forward. Where did you stop?

Answer: 12

2. **Tami’s** birthday is on **February 17th** . February 16th is a Friday this year. On which day of the week is Tami’s birthday? How do you know?

Use students name in your class and actual birth dates

Answer: Saturday reasoning should include: Saturday is after Friday, 17 is one more than 16

3. **Christopher** has 10¢ . What are all the different coins he can have?

Use students name in your class and change money amounts

Answer: (5¢) (5¢) or (5¢) (1¢) (1¢) (1¢) (1¢) (1¢)

4. Asia has 1 five cent and 3 one cent pieces in her bag. She found 2 more one cents. Now how much money does she have?

Use students name in your class and change money amounts

Answer: 10¢

5. Andrew divides an orange in half. Can he give equal parts to three of his friends? Why?

Use other common foods.

Answer: no, accept reasonable answers

6. Shantell has 6 circle stickers and 3 triangle stickers. Show one pattern she could make that would use all her stickers.

Change type of stickers and amount.

Answer: ▲●●●▲●●▲ or ●●▲●●▲●●▲

7. David drew a robot. He used circles, rectangles, squares, and triangles in his drawing. Show how you would draw a robot using these shapes.

Give students precut shapes to create their pictures.

Answer: accept all reasonable pictures.

8. A square table has 1 chair on each side. How many people can sit at the table?

Answer: 4

9. Destiny cuts a square sandwich to make two triangles. Draw a picture to show how she did this.

Use students name and change to rectangles

Answer:  or 

10. A **dozen** is another word for 12. Would a dozen mangoes be enough to give each child in our class 1 each? How many more mangoes would we need?

Answer: No, answers will vary

11. Tamika dropped her set of number cards, which cards did she lose?

Show number cards 0-10 with two cards missing (alternating the numbers)

Answer: numbers will vary based on the two numbers left out

12. It takes 10 points to win a game. Mark has 9 points. If he gets another point, will he win?

Answer: Yes

13. Tamara has five sugar apples. Does she have enough to give one to each to her four friends and keep one for herself?

Exchange fruit and number of children.

Answer: Yes

14. Keith lost three marbles. Isaiah lost two more than Keith. How many marbles has Isaiah lost?

Change the toy and number amounts

Answer: 5 marbles

15. Use only the numbers in the squares. Show all the 2-digit numbers you can make.

Change the digits in the squares

4	3	9
---	---	---

Answer: 43, 49, 34, 39, 94, 93

16. Write the next number in the pattern

- a) 10, 20, 30, _____
- b) 15, 25, 35, _____
- c) 90, 80, 70, _____

Change the number patterns.

Answer: a) 40 b) 45 c) 60

17. I have three coins worth 12¢. What are they? Draw a picture to show your answer.

Change the money amount

Answer:

		
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18. Put these numbers in order from least to greatest.

- a) 17, 56, 21, 38, 71
- b) 45, 53, 28 81, 38

Answer: a) 17, 21, 38, 56, 71 b) 28, 38, 45, 53, 81

19. There are 13 girls with Baby Alive dolls. 24 girls also have Brats dolls. How many girls have dolls altogether?

Answer: 37

20. What number does not belong in each group? Why?

A:

35	38	27	36	34
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B:

46	45	48	69	43	49
----	----	----	----	----	----

Answers: a) 27 b) 69 accept all reasonable answers

21. One side of a square is 2 paper clips long. How many paperclips would you need to go around the whole square? Why?

Answer: 8 paper clips accept all reasonable answers

22. Which figure does not belong? Why?



Answer: cube it's a solid shape

Create varying sets of four numbers.
Instructions can change to ordering from greatest to least.

Change toys with gender and amount of students.

Change numbers

Change object and amount

23. Write the missing signs.

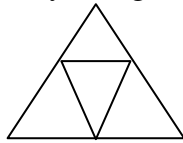
a) $3 \square 7 = 10$ _____

b) $4 \square 3 = 1$ _____

c) $2 \square 6 = 8$ _____

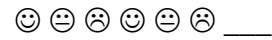
Answer: a) + b) - c) +

24. How many triangles can you count?



Answer: 5

25. Draw the next face in this pattern.



Answer: 😊

26. Which clock does not belong? Why?



A



B



C

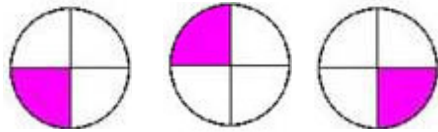


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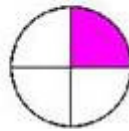
Answer: C accept reasonable answers

Alternate between digital and analog clocks showing different time sets.

27. Draw the next shape for this pattern.

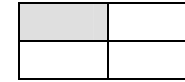


Answer:



Use various shape fraction patterns.

Ex:

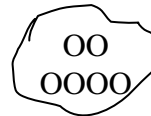


28. Kenva has 6 ju-ju plums. Does she have enough to give one to each of her four friends and keep one for herself?

Answer: Yes

29. Sheena has 6 sea grapes in one bag and 5 sea grapes in another. How many sea grapes does she have in all? Draw a picture to show your answer.

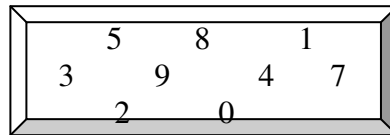
Answer: 11



30. A bookcase has three shelves. There is one toy on each shelf. The kite is on the top shelf, and the doll is under the ball. What is on the middle shelf? Draw a picture to show your answer.

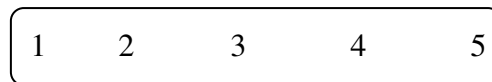
Answer: The ball

31. Which number is missing from the picture?



Answer: 6

32. Which number is the mystery number?



3	4	5	4	5
<u>-0</u>	<u>-3</u>	<u>-0</u>	<u>-1</u>	<u>-1</u>

Solve each problem. The number that is not an answer is the mystery number.

Answer: 2

33. Solve the riddle.

Add me to 3 to get 4.

Subtract me from 5 to get 4 again.

What number am I?

Answer: 1

Use different number sets in tens from 1-100

Change numbers and operation.

Change numbers.

34. Draw a picture story about one of these problems.

$$10 - 3 = \underline{\quad\quad}$$

$$9 - 4 = \underline{\quad\quad}$$

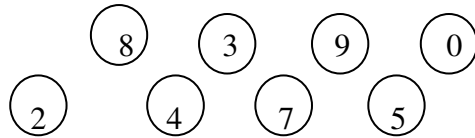
$$\begin{array}{r} 6 \\ -0 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$$

Answers: 7, 5 ; 6, 5, 5 pictures will vary

35. These numbers are lost. Write them where they belong.



10, 9, ____

4, _____, 2

2, 1, _____

9, 8, ____

5, _____, 3

10, _____, 8

7, 6, ____

_____, 1, 0

Answer: 8, 3, 0; 7, 4, 9; 5, 2

36. Acklins is 223 miles south east of New Providence. Crooked Island is 250 miles south east of New Providence. Which island is closer to New Providence.?

Answer: Acklins

Change numbers and operation.

Change numbers and patterns.
Ex: count in fives, twos, tens, in ascending or descending

Change Islands and use local settlements.

37. The Students at Mangrove Bush Primary had a read-a-thon in September. Use the graph to answer the following questions about the amount of books read by the students in this school.

Change picture and number amount.
Change graph representation.

Grade	Number of books read by students in September
Grade 1	☺ ☺ ☺ ☺
Grade 2	☺ ☺
Grade 3	☺
Grade 4	☺ ☺
Grade 5	☺ ☺ ☺
Grade 6	☺ ☺

Key: ☺ =2

- a. How many students read books in grade 5 ?_____
- b. Which grade read the most books?_____
- c. Which three grades read the same amount of books? _____

Answers: 6; 1; grades 2, 4, and 6

38. Cat Island Air made three flights on Friday for the Cat Island rake and Scrape Festival. The first flight was at 12:00, the second flight was at 1:00pm. What time was the third flight? Why?

Use analog clocks to assist with this.

Answer: 2:00 the flights were 1 hour apart

Change island and event along with
airline or mail boat.

39. Think about the Bahamian flag to answer the following questions.

- a. How many colors are in the flag? _____
- b. The color black is in what shape? _____
- c. Is there a pattern in our flag? What is it? _____

Answers: a. 3; b. triangle c. yes, *accept colour identification if stated (blue yellow blue) aquamarine, gold, aquamarine*

40. One side of a square is 10 paper clips long. How many paper clips would you need to go around the whole square?

41. Kyra ate half of a small pizza. Jim also ate half of the same pizza. How Much of the pizza is left?

Answer: Nothing is left; two halves make a whole.

42. On a sheet of paper, draw the figure that does not belong. Tell why?



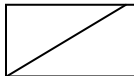
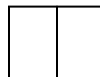
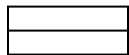
Answer: S; the others are closed figures.

43. Aunt Lucinda has a garden shape like this.



In one half she grows flowers. In the other half she grows vegetables.
Draw a picture of her garden.

Answer: Display pictures. Discuss different ways to show halves.

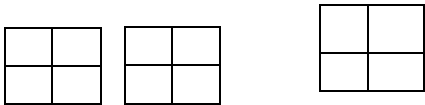


44. Which takes less time? Guess first, then try it with a friend.

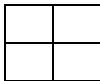
- a. Jump 10 times.
- b. Turn your body around 10 times.

Answer: Probably turn around.

45. Think about the pattern. Draw the picture that comes next.



Answer:



46. Which takes longer? Guess first, then try it with a friend.

- a. Bounce and catch a ball 10 times.
- b. Write your first name 10 times.

Answer: Probably write.

47. Continue these patterns.

25, 35, 45, _____, _____, _____
13, 23, 33, _____, _____, _____
87, 77, 67, _____, _____, _____

Answer: 55, 65, 75; 43, 53, 63; 57, 47, 37.

48. Greta has some coins in her change purse. The value is 8c. What could she have?

Answer: 8 pennies or 1 nickel and 3 pennies

49. You want to buy a jump rope. It cost 16c. Show different ways you could give the clerk 16c.

D						
N						
P						

Answer: D = 1, 1, 0, 0, 0, 0

N = 1, 0, 2, 3, 1, 0

P = 1, 6, 6, 1, 11, 16

50.

SPOONS 5 ¢	FORKS 6¢	CUPS 10¢
------------	----------	----------

Which costs more to buy-2 spoons and a cup or a spoon, a fork, and a cup?

51. Give an addition question for this story. Can you think of more than one question? Answer your question.
Pia had 4 nickels. She earned 3 more nickels drying dishes.

Answer: How much money did she have in all? Or How many nickels did she have in all?

52. Use only the numbers in the squares. Show all the different 2-digit numbers you can make.

4

3

9

53. Write the next number in the pattern.

10, 20, 30, _____

20, 40, 60, _____

15, 25, 35, _____

33, 53, 73, _____

Answer: 40; 60; 45; 93

54. Write the next number in the pattern.

90, 80, 70 _____

90, 70, 50 _____

85, 75, 65 _____

63, 53, 43 _____

Answer: 60; 30,55; 33

55. What number does not belongs in each group?

A. 35; 38; 27; 36; 34

B. 46; 45; 48; 64; 43; 49

C. 64; 84; 24; 74; 45; 34

Answer: Group A: 27 (3 tens); Group B: 64 (4 tens); Group C: 45 (4 ones)

56. 93 71 56 14 38

I am thinking of one of these numbers. It is less than 85. It is greater than 39. The sum of its digit is 11. What is the number?

Answer: 56

57. Help this machine finish its work.

IN OUT
 3 5
What is its rule? Complete.

IN 4; 5; 8; 2; 10
OUT 6

Answer: 7, 10, 4, 12; Rule is “add 2”.

58. There are some hidden fact families in this set Of numbers. Find 3 numbers that make a fact Family. How many different fact families can you find?

1	7	4	9	5	3	2	8
---	---	---	---	---	---	---	---

Answer: The fact families are
1, 2, 3; 1, 3, 4; 2, 3, 5; 3, 5, 8;
4, 5, 9; 2, 7, 9; 1, 7, 8; 1, 8, 9;
3, 4, 7; 1, 4, 5; 2, 5, 7

59. Clancy threw 2 darts and score 9 points. Where did the darts land? Yoko threw 3 darts and scored 13 points. Where did the darts land?

Answer: 8, 1; 8, 3, 2

60. I have 3 coins worth 12¢. What are they?

Answer: 1 dime and 2 pennies

61. These numbers got out of order. Can you put each set back in order from least to greatest?

A. 17, 56, 21, 38, 71

B. 45, 53, 28, 81, 38

C. 50, 22, 75, 54, 95

D. 90, 51, 38, 62, 73

Answer: A: 17, 21, 38, 56, 71 B: 28, 38, 45, 53, 81, C: 22, 50, 54, 75, 95 D: 38, 51, 62, 73, 90

62. I am a number. If you subtract 6 from me, you get a number that is the same as $4+5$. What am I?

Answer: 15

63. Put your own numbers in the problem. Write a question for the problem.

Favorite Sports

Children in the neighborhood like skateboarding. _____ children like swimming best.

Answer: answers will vary

64. Copy the facts. Write the missing signs.

$$3 \square 7 = 10 \quad \square \quad 6 \square 5 = 1 \quad \square$$

$$4 \square 3 = 1 \quad \square \quad 12 \square 5 = \quad \square$$

$$9 \square 2 = 11 \quad \square \quad 2 \square 6 = \quad \square$$

$$9 \square 5 = 4 \quad \square \quad 4 \square 4 = \quad \square$$

Answer: +; -; -; +; +; -; -

65. Joan exercises every day. She runs on the first day, swims on the second day, and walks on the third day. Continue the pattern. What exercise will she do on the seventh day?

Answer: run

66. a. Tomlin threw 2 darts and scored 7 points. Where did the darts land? Then he threw 3 darts and scored 9 points. Where did the darts land.

Answer: 5, 2, or 4, 3; 5, 3, 1, or 4, 3, 2 or 3, 3, 3

	1	2	3	4	5	6	7	8	9	10	11	12
---	---	---	---	---	---	---	---	---	---	----	----	----

Begin on 

b. Take 12 hops forward. Take 7 hops back. Where do you land?

Answer: 5 Make up a counting game for a friend.

67. If today is January 5, what is tomorrow? What would 2 days from now be? What date would it be 5 days from now?

Answer: Jan 6; Jan. 7; Jan. 10

68. Make designs with these shapes to show different ways to make 7.

□ □ □ □ □ □ □
○ ○ ○ ○ ○ ○ ○

Answer: Will Vary. Discuss students’ designs.

69. Use white or coloured chalk. Look at these patterns. Continue them on a sheet of paper.

□ Δ □ Δ □ ? ? ?

○ □ ○ □ ○ □ ? ? ?

Δ ○ Δ ○ Δ ○ ? ? ?

Answer: Δ □ Δ

Answer: ○ □ ○

Answer: Δ ○ Δ

70. Use 3 of these numbers 1, 2, and 3 at a time to write an addition sentence. How many complete sentences can you write?

Answer: 2 sentences: $1 + 2 = 3$; $2 + 1 = 3$

71. Four boats raced in the regatta in Exuma. The blue boat was not first or third. The red boat was last. In what place did the blue boat finish?

Answer: second place

72. **Solve the riddle.**

Add me to 10 to get 14. Subtract me from 7 to get 3. What number am I?

Answer: 4

73. Make up a subtraction story problem for $5 - 1 = ?$.

Answer: 4 Share and Discuss students' stories

74. Use a number only once in each problem. Write as many addition and subtraction facts as you can.

0 1 2 3 4 5

Sample: $5 - 5 = 0$ $5 - 4 = 1$ $5 - 3 = 2$ $5 - 2 = 3$ $5 - 1 = 4$ $5 - 0 = 5$

$4 - 4 = 0$ $4 - 3 = 1$ $4 - 2 = 2$ $4 - 1 = 3$ $4 - 0 = 4$

75. I am more than 3. I am less than 10. When you add one to me, I am halfway to 10.

What number am I?

Answer: 4

76. Use this code to write 5 addition problems. Have a classmate write the answers.

0 1 2 3 4 5 6

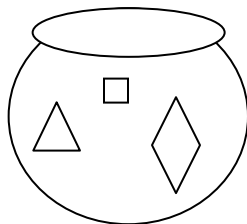
Answer: Example: $0 + 0 = 0$

77. June is carrying 6 balloons. Ivy is carrying more than that. How many more balloons is Ivy carrying? Write an addition sentence.

78. Luis is 4 years old. Nina is 1 year older than Luis. Tony is 2 years younger than Nina. How old is each child?

Answer: Nina is 5 years old. Luis is 4 ears old. Tony is 3 years old.

79. Which shape does not belong in the bowl? Why?

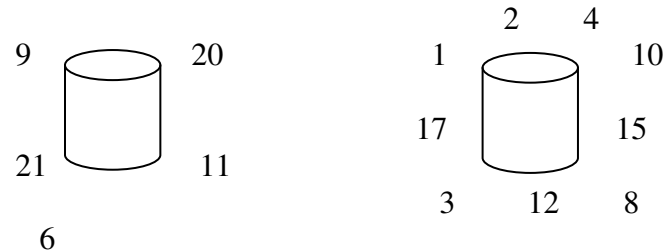


Answer: ▷ has 3 sides, all others have 4 sides.

80 Solve the riddle. I am either a cube, box, sphere, or cylinder. I have fewer than 4 edges. I have a curved face. I have at least 1 flat face. What solid figure am I ?

Answer: cylinder (can)

81. Draw 2 bowls on paper. Sort the numbers by writing them on the Bowl shapes. Can you find more than one way?



Answer: Sort by odd/even, more than ten/less than ten.

82. A bag contains 4 red marbles, 6 green marbles, and 1 black marble. Is it certain, possible, or impossible to pick a blue marble from the bag?

Answer: Impossible

83. Samuel draws a line through a square to make two three-sided figures. Did he draw a line of symmetry? Explain

Answer: He drew a line of symmetry.

84. A square table has 1 chair on each side. How many people can sit at the table?

Answers will vary

85. Nan has a cat and a dog. In what ways are these animals the same?

Answers will vary

86. Think about your nose, mouth, and eyes. Which is on top? Which is in the middle? Which is on the bottom?

Answer: Nose: Middle Mouth: Bottom Eyes: Top

87.

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tens

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ones

What 2- digit numbers could you show using any combination of these tens and ones pieces?

Answer: 10, 11, 12, 13, 20, 21, 22, 23, 30, 31, 32, 33

88. How many numbers are more than 50 and less than 58?

Answer: 7 numbers

89. How many numbers are less than 90 and more than 85?

Answer: 4 numbers

90. Write the number sentence



Answer: 6 + 3 = 9

91. Shirley has 4 dillies and 3 coco plums. She also has 1 quava. How many pieces of fruit does Shirley have altogether?

Answer: 8

92. There are 9 houses on the block. The 5th house is yellow. The last house is green. The rest of the houses are white. How many are white?

Answer: 7 white houses

93. High Rock Primary is having a bean bag toss contest. The person who tosses the most bean bags through the hoop wins. Mary won the contest but made her mom guess how many bean bags she got through the hoop. Here are the clues Mary gave.

There are more than 28.
There are fewer than 32.
It is an even number.

How many bean bags did Mary toss through the hoop? Finish the table, counting by ones, and use the clues to write the number. _____

28

94. Tim has 2 ten cent coins, 3 five cent coins, and 4 pennies. A balloon costs 30¢. Can Tim buy it?

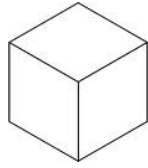
Answer: Yes Tim has 39¢.

95. Terry wrote the addition example below. What mistake did he make? Write the example correctly to fix his mistake.

$$\begin{array}{r} 48¢ \\ + 47¢ \\ \hline 85¢ \end{array}$$

Answer: Terry forgot to regroup. The correct answer is 95¢

96. How many faces does this plane figure have



Answer: 6 faces

97. David picks an odd number from a box. It has 2 tens. It is less than 30. It is greater than 27. What number does David pick?

Answer: 29

98. A drawer contains 4 brown socks, 8 white socks, and 10 black socks. Are you more, less, or equally likely to chose a brown sock than white?

Answer: Equally likely Have students to explain responses

99. There are 15 dogs and cats in a store. 9 of the pets are dogs and 4 of the cats are white. How many cats are there?

Answer: 6 cats

100. Gary can go swimming, to the park, or to the carnival. It is too cold to swim. Gary likes to wing, but he is tired of going to the park. Where does Gary go?

Answer: Carnival

Problems of the Day

Primary School Mathematics

Grade 2

PROBLEM OF THE DAY: GRADE 2

Instructions: The following can be read aloud or written and discussed with students

1. Find the missing number in each problem.

$\square$	$\square$	5	9	7	6
4	6	$\square$	2	$\square$	2
$\begin{array}{r} +1 \\ 9 \end{array}$	$\begin{array}{r} +1 \\ 14 \end{array}$	$\begin{array}{r} +3 \\ 14 \end{array}$	$\begin{array}{r} +\square \\ 13 \end{array}$	$\begin{array}{r} +4 \\ 14 \end{array}$	$\begin{array}{r} +\square \\ 13 \end{array}$

Answers: 4; 7; 6; 2; 3; and 5

2. Mr. Gibson has 10 animals on his farm in Long Island. Some are goats and some are chickens. Altogether there are 26 legs. How many Chickens are there if there are 3 goats?

Answer: 7 chickens

3. Dericka did these problems and the answers are incorrect. Change 1 digit in the addends of each problem to make them correct for Judy.

34	14
$\begin{array}{r} +28 \\ 72 \end{array}$	$\begin{array}{r} +59 \\ 72 \end{array}$

Change 1 digit in the addends of each problem to make them correct for Dericka.

Answer: Accept all reasonable answers.

Alternatives

Create different sets using the various operations.

Example:

$\begin{array}{r} 16 \\ -\square \\ 7 \end{array}$	$\begin{array}{r} \square \\ \times 3 \\ 21 \end{array}$
--	--

Use different animals and objects with two or four legs, wheels etc.

4. Write the next 3 numbers in each pattern.

50, 60, 70, ____, ____, ____
100, 80, 60, ____, ____, ____
94, 84, 74, ____, ____, ____
65, 60, 55, ____, ____, ____
23, 33, 43, ____, ____, ____

Answers: 80, 90, 100; 40, 20, 0; 64, 54, 44; etc

5. Which sum is greatest?

21 11 18 20 22
+13 +31 + 21 +19 +12

Answer: 11 + 31 = 42

6. Which problems have a difference of 23?

A	B	C	D
78	38	87	59
<u>- 55</u>	<u>-15</u>	<u>- 44</u>	<u>- 26</u>

Answer: A and B

7. Jamico had 3 quarters when he went to the shop. He bought a cup and salty sausage for 52 cents. How much money did he have left? What kinds of coins might he have in his pockets?

Answer: \$0. 23 ; accept all reasonable answers

8. Less has 2 pieces of wire. One piece is 24 inches. The other piece is 12 inches. Does he have more or less than 30 inches? How much more or less?

Answer: He has 6 inches more

9. Trudy has 4 more stickers than Melissa. Together they have 10. How many stickers does Melissa have? Guess and then check.

Answer: 3

10. Mike is cutting sandwiches into fourths. He cuts 3 sandwiches. How many equal pieces does he have?

Answer: 12

11. What number does not belong in each group?

A. 35 38 26 36 34

B. 46 48 64 43 49

C. 64 84 74 24 37

Answer: Group A is 27

Group B is 64

Group C is 37

12. I have 3 coins worth 12 ¢. What are they?

Answer: 1 ten cent coin, 2 one cent coins

13. Copy the problems and fill in the missing signs.

Change numbers and operations

a. $12 \square 13 = 25$

c. $45 \square 22 = 67$

b. $22 \square 10 = 12$

d. $71 \square 12 = 83$

Answers: +, -, +, +

14. Use only the numbers in the squares. Show all the different 2-digit numbers you can make.

3 4 9

Answer: 43, 34, 94, 49, 39, 93

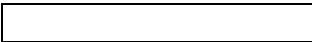
15. Erica got home at 2 o'clock in the afternoon. She ate dinner 4 hours later , what time did she eat?

Answer: 6 o'clock in the evening

16. You want to buy an apple. It costs 17c.Show different ways you could give the clerk 17c.

Answer: accept all valid money amounts

17. Aunt Lucinda has a garden shaped like this:



In one half she grows flowers.
In the other half she grows
vegetables. Draw a picture of her garden.

Answer: accept all reasonable answers

18. Joan exercise every day. She runs on the first day, swims on the second day, and walks on the third day. Continue the pattern. What exercise will she do in the Seventh day?

Answer: run

19. Jerome drinks 6 glasses of water everyday. How many glasses of water does he drink in 10 days?

Answer: 60 glasses

Change shape and purpose.

Change pattern for example; fruit brought for lunch or leisure activity.

20. Each student chose a number

16	29	2	89	72
----	----	---	----	----

Alicia chose 29
Beverly did not choose 16
She chose the smallest number.
Dolores chose 72
What numbers could Edward choose?

Answer: 16 or 89

21. How many rectangles can you find?



Answer: 3

22. Cedric is taller than Mark, and Devin is the tallest of the three. Who is the shortest?

Answer: Mark is the shortest

17 99 76 56 15 37

23. I am thinking of one of these numbers. It is less than 85. It is greater than 39. The sum of its digits is 11. What is the number?

Answer: 56

24. Latoya has 5 coins in her pocket worth 42¢. 3 of them are less than a dime. One coin is a dime. Another coin is greater than a dime. Draw a picture to show what her coins are.

Answer:     

Use different numbers and different skill, for example odd numbers etc.

Change money value and amounts of coins present.

SPOONS 5 ¢ FORKS 6¢ CUPS 10¢

25. Which costs more to buy –2 spoons and a cup or a spoon, a fork, and a cup?

Answer: Spoon, fork, and cup cost 21¢

26. One side of a square is 10 paper clips long. How many paper clips would you need to go around the whole square?

Answer: 40 paper clips; a square has 4 sides all the same length.

27. Add:

the number of sides in a triangle
the number of corners in a square
+ the number of sides in a circle

Answer: 3 + 4 + 0 =7

28. The Bahamas National Trust was 50 years old in 2009. What year was it started?

Answer: 1959

29. Mr. Johnson brought his catch from Bimini to Nassau to sell. He sold everything in one day. Use this chart to find out how much money he made.

Product	Cost	Amount sold
Crawfish	\$ 9. 00	2
Grunts	\$ 4. 00	5
Snapper	\$ 7. 00	3

Answer: \$59.00

Use items local to the area also have persons purchase things from Nassau.

30. There are 10 000 flamingoes in the rookery in Inagua. 2 467 are females. How many males are there?

Answer: 7 533

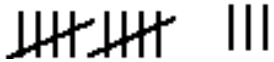
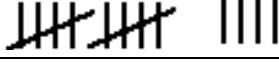
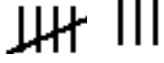
Change island and animas **indigenous** to that island.

31. Mama Rose used silver top to plait 234 yards of straw. She will sell it for \$5.00 a yard to a vendor in Nassau.

Use various local names and items sold from any island.

Answer: \$1 170.00

32. Use the table below to answer questions about various items sold at the Conch Fest in...

Conch Salad	
Conch Fritter	
Crack Conch	
Scorched Conch	

- Questions:
- a. What food item did most persons buy?_____
 - b. How many persons bought Scorched Conch?_____
 - c. How many persons bought conch Salad and Conch Fritters?_____

Answers : Conch Fritters; 8; 33

33. At the Exuma Cays Land and Sea Park, a record is kept to help keep count of the various living creatures. Use the pictograph below to answer questions about various animals in the park.

Animals	Amount	Number
Osprey	<i>O O O O O</i>	
Sea Turtles	<i>O O O</i>	
Iguanas	<i>O O O O O O</i>	
Hutias	<i>O O O O</i>	

Key: *O* = 20

Questions:

- a. Write the animals in order from least to greatest. _____
- b. Which animal is 40 less than the Iguanas? _____
- c. How many Sea Turtles and Hutias are there in the park? _____

Answers: Iguanas, Osprey, Hutias, Sea turtles; Hutias; 140

34. The 2009 Boxing Day Junkanoo parade started at 2:30 a.m. , it lasted for eight hours. At what time did the parade end?

Change event and times.

Answer: 10:30 a.m.

35. The Rolle Family has a family reunion every five years. If their last reunion was held in 2007, when will the next reunion be held?

Answer: 2012

36. Thirty members of the _____ church cleaned up the community park on Saturday. They divided the work equally into six groups. How many persons where in each group?

Change organization and community project.

Answer: 5

37. I am thinking of a number. It is less than 85 and greater than 39. The sum of its digit is 11.What is the number?

Answer: 56

38. Ogden has a dime. Loren has 2 dimes more than Ogden. Elsa has 1 more dime than Loren. Lonnie has 2 dimes more than Loren. How much money does Loren have?

Answer: 50 cents

39. Trudy has 4 more stickers than Melissa. Together they have 10. How many stickers does Melissa have? Guess and then check.

40. Give a subtraction question for this story. Write a subtraction sentence to answer your question. Paul had a piece of string 10cm long. He used a piece That was 7cm long.

41. Use the Calendar below to answer the following questions about the Long Island Regatta.

June 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2 Committee Meeting	3	4 Opening Ceremony & B Class Race	5 A & C Class Race
6 Church Service	7 Awards Ceremony	8	9	10	11	12
13	14	15	16	17 Committee Meeting	18	19
20	21	22	23	24	25	26
27	28	29	30			

Questions:

- a. How many days was the regatta held?_____
- b. Which day of the week has no activity? _____
- c. Which week has the most activities? _____
- d. On which days will the committee meet? _____

Answers: 4 days; Tuesday; week of 1st – 5th ; Wednesday the second and Thursday the seventeenth

42. Copy the problems and fill in the missing signs.

12□ 13 = 28

45□ 22 = 67

22□ 10 = 12

71□ 12 = 83

51□ 27 = 78

86□ 75 = 11

43. Help this machine finish its work. What is its rule? Complete.

IN	4	5	8	2	10
OUT	6	7	10	4	12

Answer: Rule is + 2.

44. Can you write an addition question for this story? Can you think of more than one question?

Pia had 4 nickels. She earned 3 more nickels drying dishes.

45. Which one does not belong?

2 nickels	1 nickel	5 pennies	5 pennies	10 pennies
2 dimes	1 quarter	5 nickels	3 dimes	2 dimes

Answer: All amounts are 30¢ except 5 pennies and 3 dimes

46. Provide a large sheet of newsprint. Draw a picture of 3 things you do during a day.
Put them in order.

First

next

last

47. Joan exercises every day. She runs on the first day, swims on the second day, and walks on the third day. Continue the pattern. What exercise will she do in the Seventh day?

Answer: Run

48. Jerome drinks 6 glasses of water everyday. How many glasses of water does he drink in 10 days.

Answer: 60 glasses

49. Write as many fact families as possible using only these numbers. Do not use a number more than once in any facts.

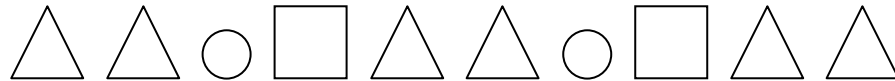
7 2 10 8 5 3

Students can write 4 facts for each of these families:

2, 3, 5: 3, 5, 8; 2, 5, 7; 3, 7, 10; and 2, 8, 10.

50. Rico has 6 triangles, 3 circle, and 3 squares. Draw a pattern that Rico can make. Check student drawings.

Example:



51. How many numbers are less than 90 and more than 85?

Answer: 4 numbers

52. Using the digits 2, 5, 3, 8, Which two numbers should you group in order to make a ten?

Answer: 8, 2

53. What date is 3 days after December 9th ?

Answer: December 12th

54. Is the value of 53 pennies closer to the value of 5 dimes or 6 dimes?

55. Write the number for each number word. twenty-two; ninety; fifty-four

56. What addition sentence comes next in the pattern?

$2 + 4 = 6$
 $3 + 4 = 7$
 $4 + 4 = 8$
 $5 + 4 = 9$

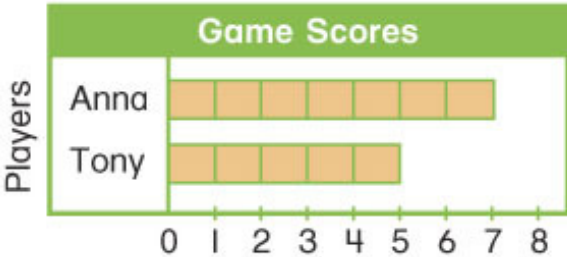
57. Which subtraction facts have a difference of 4?

$12 - 6 = ?$ $11 - 7 = ?$ $13 - 9 = ?$

58. Danny thinks of a number. It has an 8 in the ones place. It has the same number of tens as ones. What is Danny’s number?

59. What number doubled is 14?

60. How many more points did Anna score than Tony?



61. List all even numbers between 20 and 30.
62. Judy plays two games of chess. Her first game lasts 23 minutes. Her second game lasts 31 minutes. For how many minutes does Judy play altogether?
63. Marie has 15 marbles. Harry has twice as many marbles as Marie. How many marbles do they have altogether?
64. In May and June, a total of 52 people visited Adastra Gardens. The number of people who visit the gardens in May is 32. How many people visited Adastra Gardens in June?
65. Seventeen people visit the penguin house at the zoo. Then 9 people leave. 23 more people come in. How many are in the penguin house now?
66. Five 😊 on a pictograph stand for a total of 20 children. How much does 1 😊 stand for?
67. Daniel decorates 35 boxes. Simeon decorates 26 boxes. Jewel decorates 5 more boxes than Simeon. Who decorates more boxes? Daniel, Simeon, or Jewel?

Answer: Daniel

68. Olivia makes 25 bracelets. For 8 of them she uses green thread. For the others she uses red thread. How many bracelets does Olivia make with red thread?
69. Michele earns \$13 on Saturday. On Sunday she earns twice as much. On Monday she earns \$8. What is the total amount Michele earns?
70. Sixteen children are on the park. Then twice as many children arrive. How many children in all are on the park?
71. Draw the figure that is most likely to come next in the pattern.



72. There are 64 blank pages in Darnel’s mathematics journal. If she fills in 18 pages the first week and 23 pages the second week, how many blank pages are left?

Answer: 23 pages

73. The sum is 15. One addend is 3 more than the other. What are the two addends?

74. Write the missing number in the pattern. 1, 2, 2, 3, 3, 3, 4, 4, 4, ____
75. Lunch begins at 11:30. It lasts 45 minutes. What time does lunch end?
76. Sarah was born on the third day of the first month. What is Sarah's date of birth?
77. Numbers 40 through 50 are in a hat. I pick 44, 40, 49, 41, and 45. What numbers are left in the hat?
78. Keisha puts 2 quarters in her bank each day. How many days will it take her to save \$3.00?
79. Stephen Dillet's Blue Marlin and Freeport Primary Conquerors are playing basketball. So far this season, the Marlins have 100 points more than last year's final score of 385. The Conquerors have 10 more points than the Blue Marlins have. How many points does each team have so far this year?
80. Ten groupers were swimming in one direction. Half of them swam in another direction. How many groupers were left swimming on the original direction?
81. Draw the next picture in the pattern.



82. Paul sets the table with 8 plates. What is the fraction that tells about 1 plate on the table?
83. Lady Pindling reads 5 pages of her book each day. On which day will Lady Pindling finish reading 25 pages?
- Answers will vary depending when Lady Pindling starts reading her book.
84. Darnell has 3 eggs. She buys a dozen more. Then she uses a half dozen. How many eggs does Darnell have left?

85. Is it more likely, less likely, or equally likely for the spinner to land on white than grey?



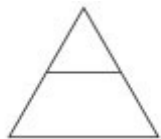
86. If September 25 is on a Thursday, how many Saturdays are left in that month?

87. If a crayon is longer than a paper clip, will it take more or fewer paper clips than crayons to measure a book?

88. Patsy has 35 stamps. Rickiera has a dozen more stamps than Patsy. How many stamps do they have altogether?

89. A fence has 5 posts from its beginning to its end. The poles are 10 feet apart. How long is the fence?

90. Draw 2 lines to make 4 equal parts.



91. It is winter and snow is falling. Is it more likely to be 25°F , 70°F , or 110°F ?

92. Does a book weigh about 1 pound, about 1 inch, or about 1 cup?

93. I am thinking of two numbers. Their sum is 21. One number is 9 more than the other. What are the two numbers?

94. Ben is thinking of a number that is between 24 and 30. When the tens digit of the number is subtracted from the ones digit, the difference is 6. What number is Ben thinking of?

95. Rickiera's first test takes her 34 minutes to complete. Her second test takes her 25 minutes to complete. About how long does it take Rickiera to complete both tests?

96. Rashad puts 4 crayons into each box. How many crayons will be in 7 boxes?

Answer: 28

97. Angela has 27 pictures. She wants to put 3 pictures in each booklet. How many booklets does she need?

Answer: 9 booklets

98. Eric has 23 CDs. He puts 4 CDs on each page of an album. How many pages can he fill? How many CDs are left over?

99. Write a 2-digit number. The digit in the ones place should be greater than the tens digit.

Answer: Will vary

100. Your friends just gave you 12 sparkle markers. Now you have 19 markers. How many markers did you have before your friends gave you 12 more?

Problems of the Day

Primary School Mathematics

Grade 3

PROBLEM OF THE DAY: GRADE 3

Instructions: The following can be read aloud or written and discussed with students.

1. What two numbers sum is 15 and whose difference is 3?

Answer: 6 and 9

Alternatives

Sum is 11 and difference 3

Answer: 4 and 7

Sum is 13 and difference 3

Answer: 5 and 8

2. Andrew bought half- dozen eggs. On the way home he dropped them, and four eggs broke. So Andrew went back to the store and bought another half dozen eggs. How many eggs does he have now?

Answer: 8

3. How many different ways can you write a number sentence with a sum of 13 using two numbers from 1 through 9?

Answer: $9 + 4$; $8 + 5$; $7 + 6$

Alternative sums; 15 ,12, 9

Sum 15: $9+6$; $8+7$;

Sum 12: $9+3$; $8+4$; $7+5$; $6+6$

Sum 9: $8+1$; $7+2$; $6+3$; $5+4$

4. David, William and Dexter all attend Carmichael Primary School. David lives 2 miles from the school. William lives 3 more miles away from the school than David. Dexter lives 4 miles from the school. How many more miles does William live from the school than Dexter?

Answer: 1 mile

5. Jeffrey has 3 bags of marbles with 100 marbles in each bag. He also has 9 single marbles. How many marbles does he have in all?

Answer: 309 marbles

6. Stickers come in squares of 100, in strips of 10, and singly. How many stickers would you have if you had 2 squares, 12 strips, and 3 single stickers?

Answer: 323 stickers

7. Computer paper comes in packages of 100 sheets and in boxes of 10. (Vice Principals name) has 2 boxes and 14 packages of computer paper in (his/her) office. How many sheets of computer paper does (he/she) have? Change supplies to pencils, stickers, sharpeners etc and quantity amount.
- Answer: 3 400 sheets**
8. The Taylors lived in Hope Town Abaco, with a population of 109 099. They now live in Murphy Town Abaco with 1 000 more people. What is the population of the town in which they now live? Change settlements to match various islands.
- Answer: 110 099**
9. Henry bought a book and gave the cashier 2 one-dollar bill, 1 quarter, and dimes. The cashier asked Henry for 1 more dime. How much did the book cost? Alternate money amounts and currency [Bahamian and American]
- Answer: \$2.55**
10. Paris buys a pencil that cost \$1.59. She pays with a five-dollar bill. How much change will Paris receive? Change to other school supplies and vary the cost.
- Answer: \$3.41**
11. Phillip has 1,034 stickers. Cedric has 1 304. Who has more stickers? How do you know? Alternate product and amount.
- Answer: Cedric , 1 304 is greater than 1 034**
12. Which is greater? 3 256 rounded to the nearest hundred or 3 256 round to the nearest ten? How can you tell?
- Answer: 3 256 rounded to the nearest hundred, accept all reasonable answers.**
13. Dwight is 8 years old. His grandmother was visiting when he was born. Since then his grandmother has visited every other year. How many times has Dwight's grandmother visited?
- Answer: 5**
14. In August crawfish tails were sold for \$7.00 a pound. Mrs. Kemp bought crawfish to cook for Sunday Dinner. She paid \$28.00. How many pounds of crawfish did she purchase?
- Answer: 4**

15. The table below shows the number of books read by third and fourth grade students of Garvin Tynes Primary School.

- a) In which month were the fewest books read?
- b) In which month, were the greatest number of books read?
- c) Which grade read the most books?

Books Read in School Read-A Thon		
Month	Grade 3	Grade 4
January	120	145
February	146	123
March	112	112

Answers: a) March b) February c) Grade 4

16. Ashley and Kendra each had pizza for dinner. Ashley’s pizza was cut into 6 equal slices and Kendra’s pizza was cut into 12 equal slices. Ashley ate 5 slices and Kendra ate 5 slices of her pizza. Who ate more of their pizza?

Answer: Ashley

17. Samantha has two more pencils than DeAngelo. What happens when she gives him one of her pencils?

Answer: They will both have the same amount of pencils.

18. Ricardo’s mother baked coconut tarts for dessert. She told him that he and his friends could have some for an afternoon snack, as long as they ate only half of what she baked. If Ricardo has five friends, how many coconut tarts must there be in all for each to have 1?

Change dessert and amount of friends.

Answer: 12

19. Raymond is working to earn money to buy an Xbox. His uncle wants to help him. He told him that if he earns 1/5 of the cost, he will pay the rest. Raymond earned \$20. How much money does his uncle need to give him? How much does the Xbox cost?

Change purchase item, cost and fraction to be earned.

Answer: \$80.00, the Xbox cost \$100.00

20. Aunt Cybil sells sweet treats on the weekends. Sami has \$3.00 to spend. Use the table below to answer the questions.

Aunt Cybil’s Sweet Treats	
cake	cost
Bennie cake	\$1.15
Coconut cake	\$1.45
Almond cake	\$1. 27

- a) Can he buy two coconut cakes?
- b) How much does an almond cake and a bennie cake cost? Would Sami get any change? If yes, How much?

Answer: a) yes b) \$2.42, yes, \$ 0.58

21. At the Andros crab Fest 362 crabs were used to prepare crab dishes. 124 crabs were used for crab and rice. 116 crabs were used for crab and dough, and the rest was used for crab soup. How many crabs were used to make crab soup?

Answer: 122

Change event change food item.
Example: coconut at the Coconut
Festival In Andros
Pineapples at Pineapple Fest

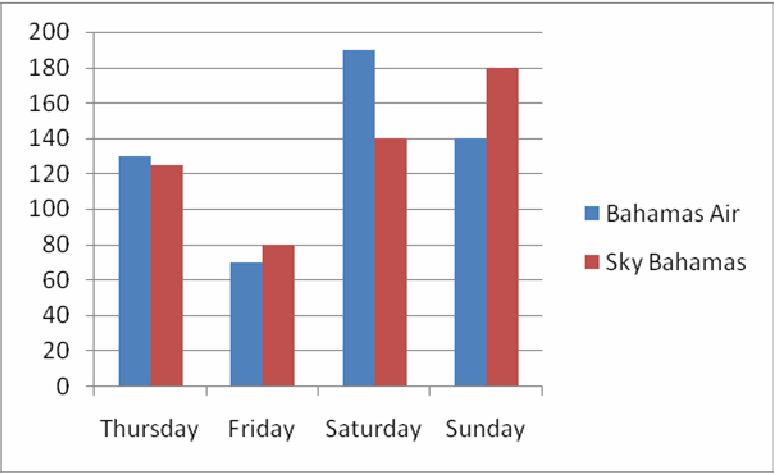
22. James thought that he could trick his brother and get a bigger piece of carrot cake. He asked, “do you want 1/3, 2/6 , or 4/12 of the carrot cake?” his brother said, “since you are being so nice, you keep 4/12 and I’ll take what is left over. Is James happy? Explain your answer?

Answer: no explanations will vary.

23. Janice cut a loaf of banana bread into 8 slices. She gave three of her friends a slice. She wrapped two slices for her grandparents. She ate a slice. Write a fraction and an equivalent fraction to show how many slices of bread Janice has left.

Answer: 2/8 and ¼

24. For the Exuma Regatta, Bahamas Air and Sky Bahamas made several flights. Use the graph to answer the questions.



- a) How many passengers did Bahamas Air carry on Saturday?
- b) Which aircraft carried more passengers? How many more passengers did they carry?
- c) Which day did they carry the least amount of people? How many passengers did they carry on that day?

Answers: a) 190 b) Bahamas Air 5 c) Friday 150

25. There are 30 minutes in half hour. How many groups of 5 minutes are in a half hour?

Answer: 6

26. Jade has 12 green grapes and 6 red grapes. She wants to share all of the grapes equally among herself and her two friends. How many grapes of each color will they get?

Answer: 2 red grapes, 4 green grapes.

27. In a pictograph to show people’s favorite day of the week, the symbol ☺ stands for 6 people. How many ☺ would be in the pictograph to show that 24 people picked Friday as their favorite day?

Answer: 4

28. Try filling in the missing numbers in the magic square below. Use numbers 1 through 9. Make all rows, columns, and diagonals add up to 15.

8		
	5	
		2

Answer:

8	1	6
3	5	7
4	9	2

29. James has 56 tomatoes divided equally among 7 crates. Joseph has 54 tomatoes divided equally among 6 crates. Who has more tomatoes in each crate? How can you tell?

Answer: Joseph

30. Andrewnique’s birthday is 6 days after Valentine’s Day. What is the date of Andrewnique’s birthday? What information do you need to find the answer?

Answer: February 20th you need to know which day is Valentine’s Day

31. The table below shows the amount of miles traveled by various Mail Boats.
Read the chart then answer the questions that follow.

Mail Boat	January	February	March
Captain Moxey	647	445	499
Lady Mathilda	467	623	649
Emmitt and Cephas	632	752	478

- a) Which boat traveled the least amount of miles?_____
- b) Write the names of the mail boats in order from greatest to least to show the amount of miles they traveled._____
- _____
- c) How many more miles did the Lady Mathilda travel than the Captain Moxey?_____

Answer: a) Captain Moxey b) Emmitt and Cephas Lady Mathilda Captain Moxey c) 148 mile

32. In the 2009 Carifta Games, The Bahamas won 8 bronze medals. The won 5 less gold medals than bronze. They won 9 more silver medals than bronze. How many medals did The Bahamas won in all?

Answer: 28 medals

33. There are 36 passengers on Pineapple Air. There are 77 passengers on Cat Island Air. Bahamas air has the sum of the first and second airplanes. How many passengers are on Bahamas Air?

Answer: 113

34. Sir Milo Butler was born in 1906. Sir Lynden Pindling was born 24 years later. When was Sir Lynden born?

Answer: 1930

35. Chris Brown ran 54 miles on Monday, 46 miles on Tuesday, and 30 miles on Wednesday. Avard Muncur ran 149 miles the week before. Who ran the greater distance?

Answer: Avard Moncur

36. Marcus had a doctor's appointment at 2:15. He was one hour late. What time did he arrive at the doctor's office? Give your answer in two ways.

Change times and place or events.

Answer: 3:15 or 15 minutes past 3

37. Mrs. Forbes asked her first grader to tell her the time. The student said "the big hand is on the 2 and the little hand is on the 4." What time is it?

Answer: 4:10

38. It took Arianna Vanderpool-Wallace 22 minutes to swim 1 500 metres. If she finished the 1500 metres at 2:00pm, what time did she begin?

Answer: 1:38 p.m.

39. There are 4 boxes of yogurt in a case. Each box contains 2 cups. A case contains 6 boxes. How many cups of yogurt are there in a case?

Answer: 48 cups

40. A birthday cake was cut into 8 equal slices. Rhonda ate 2 slices and her sister ate 3 slices. What fraction of the pizza was not eaten?

Answer: $\frac{3}{8}$

41. There are 827 people at the concert. A reporter wants to round that number to the nearest hundred. What number should the reporter use?

42. How many numbers between 500 and 1000 have both 7 ones and 5 tens?

43. Lonice placed 3 hundred flats, 7 tens rods, and 8 ones units on the table. Jason added another hundreds flat. Deborah took away 2 tens rods. What number is Lonice modeling now?

44. Write the missing number in this pattern. 100, 300, 500, ____, 900

45. Write the missing digits.

$$\begin{array}{r} 4 \square 6 \\ - 5 \square \\ \hline \square 3 3 \end{array}$$

46. Andy has only nickels and dimes. He has 9 coins. He has 75?. How many of each coin does he have?

47. What number pattern is shown here?

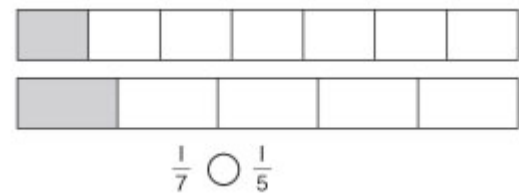
726, 626, 526

Answer: Decreasing by 100

48. Predict which part the spinner would land on the most. Explain your reasoning.



49. Compare the fractions. Write $<$, $=$, or $>$.



50. A movie runs for 180 minutes. How many hours is that?
51. The sides of a triangle measure 3 cm, 4 cm, and 5 cm. Find the perimeter.

Answer: 12 cm

52. How many cubes does it take to make these steps? Each step is 2 cubes wide.



53. Complete: 3 x 2 is to 2 x 3 as 4 x 5 is to ____.

54. Which solid figure has more edges?



55. How can you show 93¢ using the fewest coins possible?

56. Which numbers between 400 and 800 have both an 8 in the tens place and a 3 in the ones place?

57. What are the next two numbers? 5, 8, 6, 9, 7, 10, 8, . . .

58. Ralphry gives 17 dillies to Amber and 4 of her friends. How many dillies does each person get and how many are left over?

59. Sam is going to use the letters in his name as a password. How many different passwords can he make using each letter only once?

- a. 1 b. 3 c. 6 d. 9

60. Mrs. Brown asks James, Timothy, and Samuel to line up. How many different ways can they line up?

- a. 6 b. 4 c. 3 d. 2

Answer: 3

61. All the letters in the alphabet are placed in a bag. How likely is it that you will pull out a vowel?

Answer: a. $\frac{5}{26}$ b. $\frac{21}{26}$ c. $\frac{7}{20}$ d. $\frac{5}{7}$

62. There are twenty Spelling words on a test. Eight of the words begin with the letter S, four begin with the letter T, and the rest of the words begin with the letter M. Based on this information, which sentence is true?

- a. The first word on the Spelling test is more likely to start with a T than an S.
- b. The first word on the Spelling test is equally likely to start with an M than an S.
- c. The first word on the Spelling test is less likely to start with an S than an M.
- d. The first word on the Spelling test is less likely to start with an M than a T.

63. Ruth has twice as many coins as Dorothy. When Ruth gives Dorothy 2 coins, they each have the same number. How many coins do they each have?

64. Bill is twice as old as Curtis. The sum of their ages three years ago was 45 years. How old are they now?

Answer: Bill = 34; Curtis = 17

65. Mary looked out of her window in Inagua and saw a group of pigeons and donkeys passing by. She counted all the legs of the pigeons and donkeys and found that the total number of legs add up to 66. How many of each kind of animals (pigeons and donkeys) passed by her window if the total number of animals is 24?

Answer: 15 pigeons and 9 donkeys

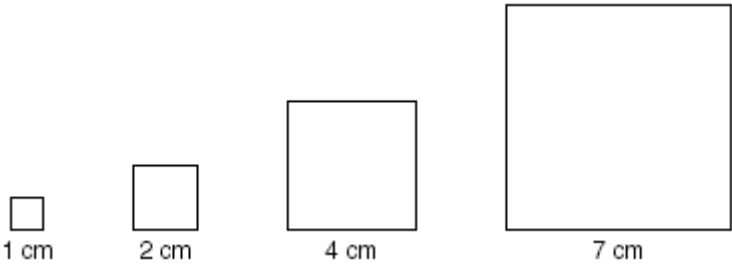
66. An Island has no currency; it instead has the following exchange rate:

50 bananas = 20 coconuts
30 coconuts = 12 fish
100 fish = 1 bed.

How many bananas equal 1 hammock?

Answer: 1 bed = 625 bananas

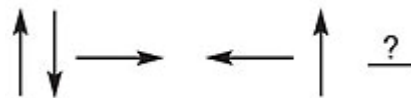
67. The squares below increase in size from left to right. If the pattern continues, how long will each side of the next square be?



- a. 8 b. 9 c. 10 d. 11

68. How many times are nine ones used in writing all the numbers between 1 and 100?

69. What figure comes next in the following sequence?



70. Mary has the following in her cash box: pennies, nickels, dimes, and quarters. If she has to return 25¢ change to a customer, how many different ways can she make change?

71. There are four dozen pamphlets on fire safety being delivered to a third-grade classroom of thirty-six students. Will there be enough for each person? How many pamphlets will be left over?

72. Every day last week Robert got a nickel from his mom and also found a penny. How much money was that?

Answer: 36¢

73. Harris read 53 pages in a storybook. She skipped 14 pages of pictures. How many more pages does Nan have left to read?

74. Sean is twice as old as his brother. In 5 years, Sean will be 11. How old is his brother now?

75. Use each of these digits only once to find the addends: 0, 6, 7, 8, 9.

$$\begin{array}{r} \square\square\square \\ + \square\square \\ \hline 804 \end{array}$$

76. Delores and Troy are playing an arcade game. Delores scores 25 points in each of her 3 turns. Troy scores 40, 30, and 10 points. Who has the higher score?

77. Who am I?

I am 17 more than 397.

I am 3 hundred more than 776.

I am twice as large as 209.

I am the greatest 3-digit number.

78. In Mr. Stewart's garden there are 5 heads of lettuce in each row. If Mr. Stewart planted 3 rows of lettuce, how many heads of lettuce will he be able to harvest?

79. How many whole numbers between 1 and 200 have the digit 7 in them?

80. Carlos has a blue shirt and a green shirt. He has white pants and brown pants. How many combinations of shirts and pants can he choose?

81. Dan lives 1 mile from Marathon Mall. Henry lives 8 more miles away from the mall than Dan. Phyllis lives 6 miles from the mall. How many more miles does Henry live from the mall than Phyllis?

82. Janice is in a basketball league. There are 5 teams in the league. If each team has 6 players, how many players are there in the league?

Answer: 30

83. Some months have 30 days and some have 31. How many months have at least 28 days?

84. The first jitney of the group has 28 people in it. The second jitney has twice that many. The third bus has the sum of people from the first and second jitneys. How many people are in these three buses?

85. I am thinking of two numbers whose sum is 14 and whose difference is 6. What are they?
86. In a ring toss game the points that can be scored are 4, 2, 3, and 9. How can Foster get a score of 15 with 3 tosses?
87. Glenda is thinking of a 3-digit number. The ones digit of the number is 4. The hundreds digit of the number is two times the ones digit. The tens digit is 2 less than the hundreds digit. What is Glenda's number?
- Answer: 864**
88. Fill in the missing numbers in the magic square. Each number from 1 to 9 will appear once. When the magic square is complete, the sum of the three numbers in any row, column, or diagonal will be 15.

8	?	6
?	5	7
4	?	?

89. Put the numbers in order from least to greatest:

23,454 23,445 24,354
 22,345 23,123 22,534

90. Look at the pattern below. What comes next?



91. Tom and Eric have \$7 between them. Tom has \$3.70. Which one has more money?

92. Kenny is trying to save money. The first week he puts 25¢ into his piggy bank. The next week he puts 30¢ in the bank. If he keeps adding 5¢ to the amount he puts in his bank each week, how much money will he have after 8 weeks of saving?
93. A box can hold 6 books. There are 7 boxes of books, but one box has only 3 books in it. If all the other boxes are full, how many books are there in total?
- Answer: 39 books**
94. A 3-digit number has the sum of 17. The second digit is 4. If none of the digits are the same, what is the greatest number that fits this description?
95. Emily makes jewelry. She earns 50¢ for each piece of jewelry she sells. If Emily earned \$18.00 last week, how many pieces of jewelry did she sell?
96. Use these digits to complete each sentence below. Use each digit only once in a given number.

9	3
6	5
1	7

The smallest 3-digit number is ____.

The largest 3-digit number is ____.

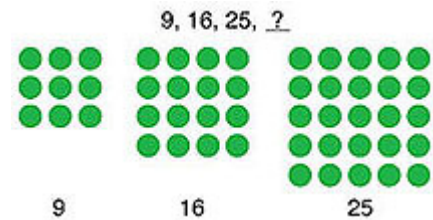
The 3-digit number nearest 600 is ____.

97. Jeff and George surveyed 75 people, asking if they like dogs or cats better. They made a pictograph to show the results. In their pictograph 🐱 stands for 5 people who like cats better. How many 🐱 would be in the pictograph to show that 30 people like cats better? If 🐶 stands for 5 people who like dogs better, how many 🐶 would be in the pictograph to show that 45 people like dogs better?

98. I have 2 digits. My tens digit is half my ones digit. I am an even number. The sum of my digits is 12. What number am I?

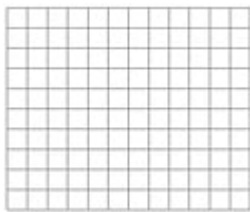
Answer: 48

99. Use the illustration below to find the number that comes next.

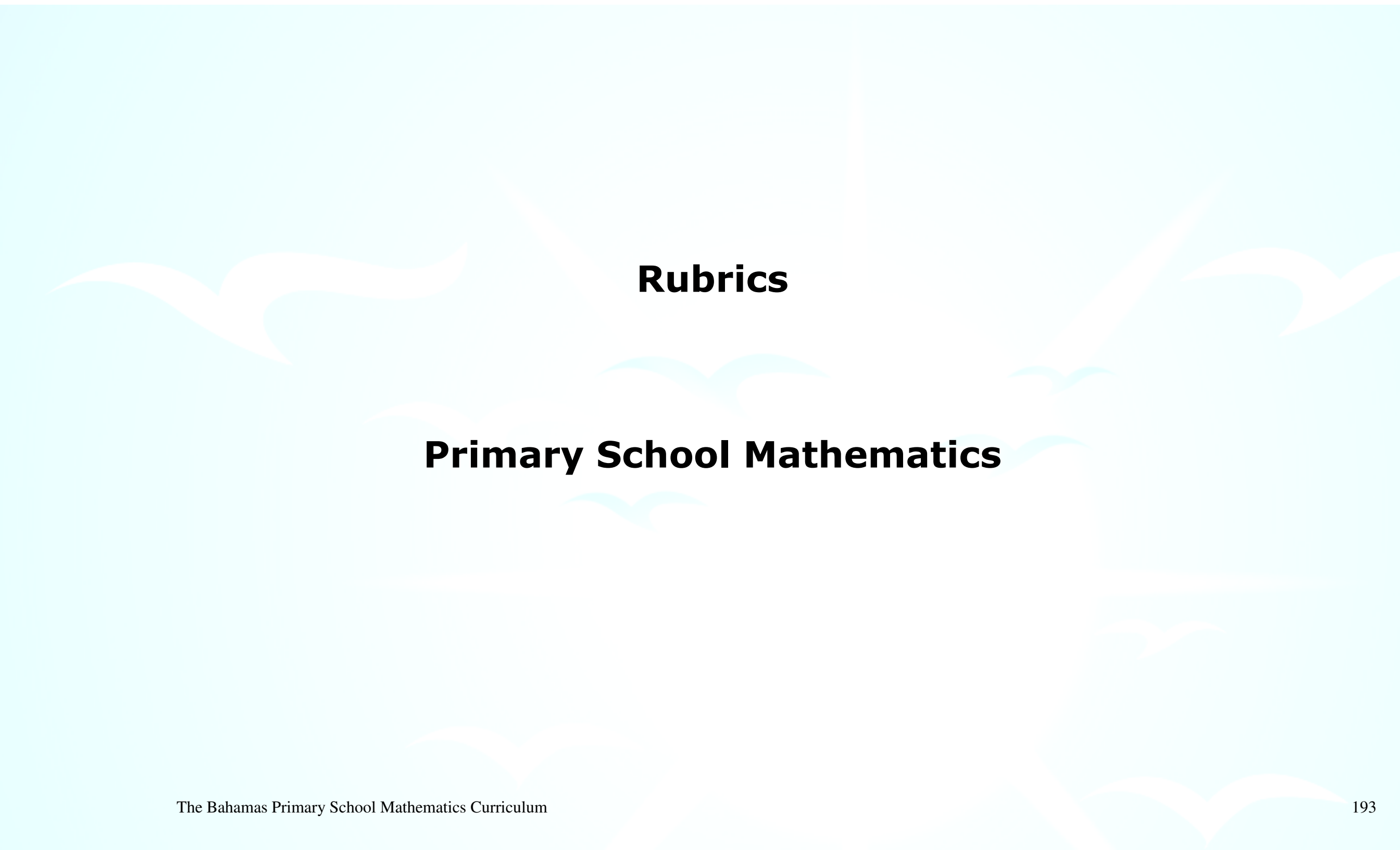


100. Lynn has 57 oatmeal cookies. She divides them equally into 3 cookie jars. Will there be more than or fewer than 20 cookies in each cookie jar?

101. The 6 girls are going to sleep in sleeping bags in the basement. The basement floor is tiled and it measures 10 tiles by 8 tiles. Each sleeping bag covers 6 tiles by 2 tiles. Will all the sleeping bags fit? How many tiles will not be covered?



102. Every 12 minutes two airplanes take off from the Lynden Pindling Airport. How many planes take off in 3 hours?



Rubrics

Primary School Mathematics

REPORT RUBRIC

	Beginning 1	Developing 2	Accomplished 3	Exemplary 4	Score
Topic	Totally unrelated	Remotely related	Somewhat relevant	Directly relevant	
Organization	Not organized, events make no sense	Some organization, events jump around, start and end are unclear	Organized, events are somewhat jumpy	Good organization, events are logically ordered, sharp sense of beginning and end	
Quality of Information	Unable to find specific details	Details are somewhat sketchy	Some details are non-supporting to the subject	supporting details specific to subject	
Grammar & Spelling	Very frequent grammar and/or spelling errors	More than two errors	Only one or two errors	All grammar and spelling are correct	
Interest Level	Needs descriptive words	Vocabulary is constant, details lack "color"	Vocabulary is varied, supporting details need work	Vocabulary varied, supporting details vivid	
Neatness	Illegible writing, loose pages	Legible writing, some ill-formed letters, print too small or too large, papers stapled together	Legible writing, well-formed characters, clean and neatly bound in a report cover, illustrations provided	Word processed or typed, clean and neatly bound in a report cover, illustrations provided	
Timeliness	Report handed in more than one week late	Up to one week late	Up to two days late	Report handed in on time	
				Total	

ARTbeat@school

<http://www.sdcoe.k12.ca.us/score/actbank/reportrub.html>

GROUP DISCUSSION SCORING GUIDE

Teacher Name: _____

Student Name: _____

CATEGORY	4	3	2	1
Contributions	Routinely provides useful ideas when participating in the group and in the group discussion. A definite leader who contributes a lot of effort.	Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard!	Sometimes provide useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required.	Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate.
Attitude	Never is publicly critical of others. Always has a positive attitude about the task (s).	Rarely is publicly critical others. Often has a positive attitude about the task (s).	Occasionally is publicly critical of others. Usually has a positive attitude about the task (s).	Often is publicly critical of the project or others. Often has a negative attitude about the task (s).
Working with Others	Almost always listen to, shares with, and supports the efforts of others.	Usually listens to, shares with, and supports the efforts of others.	Often listens to, shares with and supports the efforts of others.	Rarely listens to, shares with, and supports the efforts of others.
Effort	Participation reflects student’s best efforts.	Participation reflects a strong effort from this student.	Participation reflects some effort from this student.	Participation reflects very little effort on the part of this student.
CATEGORY	4	3	2	1
Contributions	Routinely provides useful ideas when participating in the group and in classroom discussion. A definite leader who contributes a lot of effort.	Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard!	Sometimes provide useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required.	Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate.

Rubric Made Using: RubiStar (<http://rubistar.4teachers.org>)

COOPERATIVE LEARNING RUBRIC

	1	2	3	4
Contribution to group goals	Works toward group goals only when prompted	Works toward group goals with occasional prompting	Works toward group goals without occasional prompting; accepts and fulfills individual role within group	Consistently and actively works toward group goals; willingly accepts and fulfills individual role within group
Consideration of others	Needs occasional reminders to be sensitive to the feelings of others	Shows sensitivity to the feeling of others	Shows and expresses sensitivity to the feelings of others; encourages the participation of others	Shows sensitivity to the feelings and learning needs of others; values the knowledge, opinion, and skills of all group members and encourages their contribution
Contribution of knowledge	Contributes information to the group only when prompted	Contributes information to the group with occasional prompting or reminding	Contributes knowledge, opinions, and skills without prompting or reminding	Consistently and actively contributes knowledge, opinions, and skills without prompting or reminding
Working and sharing with others	Participates in needed changes when prompted and encouraged; always or often relies on others to do the work	Participates in needed changes with occasional prompting; often needs reminding to do the assigned work	Willingly participates in needed changes; usually does the assigned work and rarely needs reminding	Helps the group identify necessary changes and encourages group action for change; always does the assigned work without having to be reminded

Signatures and comments:

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CLASS DEBATE RUBRIC

Category	Excellent	Good	Satisfactory	Needs Improvement
Information	All information was accurate and clear	Most information was accurate and clear	Most information was accurate and clear, but not usually thorough	Information had several inaccuracies or was usually unclear
Rebuttal	All counter-arguments were accurate, relevant, and strong	Most counter-arguments were accurate, relevant and strong	Most counter-arguments were accurate, and relevant, but several were weak	Counter-arguments were not accurate or relevant
Organization	All arguments were logical and clearly followed a premise	Most arguments were logical and clearly followed a premise	Arguments were logical, but did not always follow a premise	Arguments were illogical and did not follow a premise
Understanding of Topic	The team clearly understood the topic fully and presented convincingly	The team clearly understood the topic and presented with ease	The team understood the main points of the topic and presented those well	The team did not exhibit an adequate understanding of the topic
Respect for Other Team	Showed high respect for other team in language, responses, and body language	Showed good respect for other team in language, responses, and body language	Showed moderate respect for other team in language, responses, and body language	Language, responses, and body language were consistently disrespectful

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JOURNAL RESPONSE AND COMPREHENSION RUBRIC

Use this rubric to assess students’ abilities to complete the journal activities assigned for this lesson. Share this assessment with students prior to completing the journal-writing lesson so they will understand how they will be assessed. You can also use the rubric as a basis for discussion and feedback with each student.

Student name: _____ Date: _____

1. The student writes journal responses in complete sentences. _____
2. The student writes three or more sentences to answer questions. _____
3. The student responds to questions by self-questioning, retelling, predicting, _____
4. The student’s experiences and opinions are clear. _____
5. The student works with a peer to share journal responses and to develop a combined response when requested. _____

Scale:

Excellent 4	Very Good 3	Fair 2	Poor 1
The student completes the task with no major errors.	The student completes the task with only a few major errors and some minor errors.	The student fails to complete the task with some major errors and many minor errors.	The student fails to complete the task.
The student demonstrates a full understanding of the concepts.	The student demonstrates a strong understanding of the concepts.	The student has difficulty understanding the concepts.	The student does not understand the concepts.

Include anecdotal notes in the space below:
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Children's Literature

Primary School Mathematics

CHILDREN'S LITERATURE FOR MATHEMATICS

TITLE	AUTHOR	ISBN NUMBER
Two of Everything	Lilly Toy Hong	0-8075-8157-7
The Crayon Counting Book	Pam Munoz Ryan and Jerry Palotta	8-88106-953-1
The M& Ms Counting Book	Barbara Barbieri McGarth	0-88106-853-5
Seven Little Hippos	Mike Thaler	0-671-89907-4
Five Little Ducks	Pamela Papacone	1-55858-473-0
Nine O'Clock Lullaby	Marilyn Singer	0-06-443319-6
The Go-Around Dollar	Barbara Johnston Adams	0-02-700031-1
The Very Hungry Caterpillar	Eric Carle	0-399-20853-4
Ten Black Dots	Donald Carews	0-688-13574-9
What Comes in 2's, 3's and 4's?	Suzanne Aker	0-671-79247-4
The King's Chessboard	David Birch	0-14-054880-7
Sea Squares	Joy Hulme	1-56282-520-8
Frog Counts To Ten	John Lieber	1-56294-698-6
Clocks and More Cocks	Pat Hutchins	0-689-71769-5
Monster Money Book	Lareen Leedy	0-8234-0922-8
2x2= Boo	Lareen Leedy	0-8234-1190-7
The Greedy Triangle	Marilyn Burns	0-590-48991-7
GrandfatherTang's Story	Ann Tompert	0-517-57487-X
A Quarter From The Tooth Fairy	Caren Holtzman	0-590-26598-9
Bat Jamboree	Kathi Appelt	0-688-13883-7
Anno's Counting Book	Mitsumasa Anno	0-06-443123-1
Counting on Frank	Roger Clement	0-8368-0358-2
Seven Blind Mice	Ed Young	0-590-46971-1
Counting by Kangaroos	Joy N. Hulme	0-7167-6602-7
Sea Sums	Joy N. Hulme	0-7868-0170-0
Mother Goose Math	Emily Boland	0-670-87569-4
So Many Circles, So Many Squares	Tana Hoban	0-688-15165-5 TR
Spaghetti and Meatballs for All	Marilyn Burns	0-590-94459-2

CHILDREN'S LITERATURE FOR MATHEMATICS

TITLE	AUTHOR	ISBN NUMBER
In The Next Three Seconds	Rowland Morgan	0-525-67551-5
The Shape of Things	Dayle Ann Dobbs	1-56402-698-1
Anno's Counting House	Mitsumasa Anno	0-399-20896-8
Math Counts Length	Henry Pluckrose	0-516-45453-6
Five Little Monkeys Jumping On a Bed	Eileen Christlow	0-395-55701-1
Five Little Monkeys Sitting in a Tree	Eileen Christlow	0-395-66413-6
A Remainder of One	Elinor J. Pinczes	0-395-69455-8
Notorious Numbers	Paul Giganti, Jr.	1-56785-006-5
10 For Dinner	JoEllen Bogart	0-590-73173-4
Each Orange Had 8 Slices	Paul Giganti, Jr.	0-688-13116-6
How Big Is a Foot	Rolf Myller	0-440-40495-9
Math Counts Weight	Henry Pluckrose	0-516-45460-9
Math Counts Pattern	Henry Pluckrose	0-516-45455-2
Math Counts Sorting	Henry Pluckrose	0-516-45458-7
Even Steven and Odd Todd	Kathryn Cristaldi	0-590-22715-7
Harriet's Halloween Candy	Nancy Carlson	0-87614-850-X
The Button Box	Margarette S. Reid	0-14-055495-5
From One to One Hundred	Teri Sloat	0-14-055643-5
A Grain of Rice	Helena Claire Pittman	0-553-15986-0
How The Second Grade Got \$8,205.50 to Visit the Statue Of Liberty	Nathen Zimelman	0-8075-3431-5
Neighborhood Soup	JoAnne Nelson	0-8136-4266-3
Ten Sly Piranhas	Victoria Chess	0-8037-1200-6
Sadako and the Thousand Paper Cranes	Eleanor Coerr	0-440-47465-5
The Paper Crane	Molly Bang	0-688-07333-6
Anno's Mysterious Multiplying Jar	Masaichiro & Mitsumasa Anno	0-399-20951-4
More Than One	Miriam Schlein	0-688-14103-XLE
One Hundred Hungry Ants	Elinor Pinczes	0-395-63116-5
A Giraffe And A Half	Shel Silverstein	0-06-025655-9

CHILDREN'S LITERATURE FOR MATHEMATICS

TITLE	AUTHOR	ISBN NUMBER
17 Kings and 42 Elephants	Margaret Mahy	0-8037-0458-5
How Much Is A Million?	David M. Schwartz	0-590-43614-7
If You Made A Million	David M. Schwartz	0-688-07017-5
Somebody and the Three Blairs	Marilyn Tolhurst	0-531-05876-6
Sadako	Eleanor Coerr, Ed Young	0-399-21771-1
The King's Commissioners	Aileen Freedman	0-590-48987-9
Half and Half	JoAnne Nelson	0-8136-4311-2
The Great Graph Contest	Loreen Leedy	0-8234-2029-9
How Do You Know What Time it is?	Robert E. Wells	0-8075-7940-8
Fraction Fun	David A. Adler	0-8234-1259-8
Anno's Mysterious Multiplying Jar	Masaichiro and Mitsumasa Anno	0-6981-1753-0
Remainder of One	Elinor J.Pinczes	1-6182-5077-8
Pigs Will Be Pigs: Fun with Math and Money	Amy Axelrod	0-6898-1219-1
Sir Cumference and the Great Knight of Angleland: A Math Adventure	Cindy Neucshwander	1-5709-1166-5
Fraction Action	Loreen Leedy	9-7808-2341-109-2
The Math Chef	Joan D'Amico and Karen EichDrummond	0-4711-3813-4
The Amazing Impossible Erie Canal	Cheryl Harness	9-7806-8982-584-2
Piece = Part = Portion: Fractions = Decimals = Percents	Scott Gifford	1-58246-102-3
Sir Cumference and the Sword in the Cone: A Math Adventure	Cindy Neuschwandwander	5-709-1601-2
Fair is Fair	Jennifer Dussling	13: 9-7806-1379-279-0
Measuring Penny	Loreen Leedy	0-6702-4133-4
Grandfather Tang's Story: A Tale Told with Tangrams	Ann Tompert	0-5178-8558-1
The Grape of Math	Greg Tang	0-4392-1042-9
Keep Your Distance!	Gail Herman	9-7806-1339-333-1
One is a Snail: Ten is a Crab	April Pulley Sayre	9-7807-6362-631-0
Go Fractions!	Judith Bauer Stamper	9-780-4484-3113-0
Hottest, Coldest, Highest, Deepest	Steve Jenkins	0-6184-9488-X

Materials List

Primary School Mathematics

Grades 1-3

**PRIMARY SCHOOL MATHEMATICS
MATERIALS LIST
GRADE 1**

The following is a list of materials that every grade 1 classroom teacher should have access to. Ultimately, we should strive to have each grade 1 classroom equipped with these materials.

QUANTITY	MATERIALS	QUANTITY	MATERIALS
1 000	Snap blocks, linking cubes, or Unifix cubes		Judy clocks (teacher demonstration clock and 15 mini clocks)
4	Buckets of 2-colour counters (200 per bucket)	3	Sets of solid shape
	Number charts (100,99,1-20 with quantity)*	15*	Sets of attribute block
	Base ten models		Classroom set of 4-function calculators
15	Sets of pattern blocks		Scissors
5	Balance scales		Play money (Bahamian and United States)
	A selection of Math-related children's literature (see appendix)	*	Height charts
*	A set of counters per student	1	Giant set of attribute blocks
15	Thermometers	15	Geoboards with rubber bands
*15	Sets of tangrams	1	Overhead geoboard
1	Overhead set of tangrams	1	Overhead projector
15	Sets of dice *	1	Set of transparent counters for overhead (2 colours)
15	Sets of number cubes	*	Bag of items that can be sorted such as buttons, shells, nuts & bolts, beans
	Metric measuring tapes		1-Inch cubes (500)
	An assortment of Math games	*	Addition
	Dominoes	*	

* These items can be made, collected or obtained inexpensively.

**PRIMARY SCHOOL MATHEMATICS
MATERIALS LIST
GRADE 1**

The following consumables should be in every first grade class every year.

QUANTITY	MATERIALS	QUANTITY	MATERIALS
	Straws, calendars		
	Chart paper		
	Construction paper		
15	Sets of markers	*	
	Crayons, pencils	*	
	Yarn, rope		

* These items can be made, collected or obtained inexpensively.

**PRIMARY SCHOOL MATHEMATICS
MATERIALS LIST
GRADE 2**

The following is a list of materials that every grade 2 classroom teacher should have access to. Ultimately, we should strive to have each grade 2 classroom equipped with these materials.

QUANTITY	MATERIALS	QUANTITY	MATERIALS
1,000	Snap blocks		Judy clocks (teacher demonstration clock and 15 mini clocks)
4	Buckets of 2-colour counters (200 per bucket)	3	Sets of solid shape
	Number charts (100,99,1-20 with quantity)*	15	Sets of attribute block
	Base ten models		Classroom set of 4-function calculators
15	Sets of pattern blocks		Scissors
5	Balance scales		Play money (Bahamian and United States)
	A selection of Math-related children's literature (see appendix)		Height charts
*	A set of counters per student	1	Giant set of attribute blocks
15	Thermometers	15	Geoboards with rubber bands
*15	Sets of tangrams	1	Overhead geoboard
1	Overhead set of tangrams	1	Overhead projector
15	Sets of dice /decks of card	1	Set of transparent counters for overhead (2 colours)
15	Sets of number cubes	*	Bag of items that can be sorted such as buttons, shells, nuts & bolts, beans
	Metric measuring tapes		A Classroom calendar
	An assortment of Math games	*	Addition and subtraction flash cars

**PRIMARY SCHOOL MATHEMATICS
MATERIALS LIST
GRADE 2**

The following consumables should be in every second grade class every year.

QUANTITY	MATERIALS	QUANTITY	MATERIALS
	Straws		Molding clay
	Chart paper		Dried beans
	Construction paper		Paper cups for sorting
15	Sets of markers	*	Old magazines for cut ups
	Crayons, pencils	*	Old catalogues for cut ups
	Yarn, rope		Paper clips

**PRIMARY SCHOOL MATHEMATICS
MATERIALS LIST
GRADE 3**

The following is a list of materials that every grade 3 classroom teacher should have access to. Ultimately, we should strive to have each grade 3 classroom equipped with these materials.

QUANTITY	MATERIALS	QUANTITY	MATERIALS
1,000	Linking cubes, snap blocks or unifix cubes		A classroom calendar
	Play money (Bahamian and United States)	5	Stop watches
*	Fraction circles – one set per student	10	Meter sticks
	Overhead fraction circle set	*15	Geoboards with rubber bands
1	Buckets of 2 colour counters (200 per bucket)	1	Overhead geoboard
4	2-Colour counters for the overhead	1	Overhead calculator (4-function)
	Tangrams- set per student	15	Sets of Cuisenaire rods
*	Set of tangrams for overhead		Base ten blocks
10 of each	Spinners of different types		Class size hundreds chart
	Models of solids		Multiplication chart
*	Judy clocks – 15 individual	*	Numeral cards, word name cards
	Classroom set of 4- function calculators		A selection of children’s literature (see appendix)
1	Overhead projector	*50	Individual counters per student
15	Metric measuring tapes	15	Pairs of dice
3	Balance scales	500	Colour tiles
	An assortment of Math games	*	Addition and subtraction flash cards

**PRIMARY SCHOOL MATHEMATICS
MATERIALS LIST
GRADE 3**

The following consumables should be in every grade 3 classroom.

QUANTITY	MATERIALS	QUANTITY	MATERIALS
*	Empty containers'/ shoe boxes/egg cartons	*	Yarn, string
*	Old calendars/ paper plates	*	Square paper
*	Old catalogues and magazines		Paper clips/paper fasteners

*** These items can be made, collected or obtained inexpensively.**

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