

GRADES 1- 5

**MATHEMATICS
CURRICULUM**



Curriculum Aims

The goals of the Primary Mathematics Curriculum are:

- Stimulate interest in the learning of mathematics
- Help students understand and acquire basic mathematical concepts and computational skills
- Help students develop creativity and the ability to think, communicate, and solve problems
- Help students develop number and spatial sense and the ability to appreciate patterns and structures of number and shapes
- Enhance students' lifelong learning abilities through basic mathematical knowledge

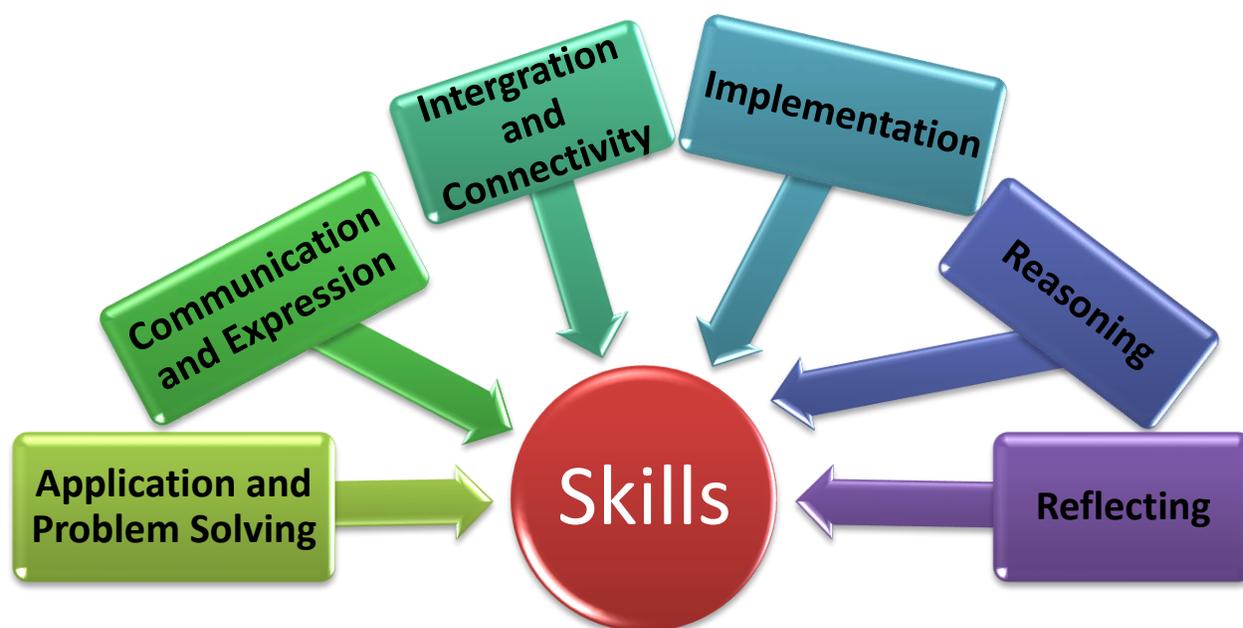
The learning of mathematics through an enquiry based approach provides opportunities for the child to explore the nature of mathematics, to acquire the knowledge, concepts and skills required for everyday living, for use in other subject areas and to develop eco-friendly attitude & behavior.

The Importance of Mathematics

The learning of mathematics results in more than a mastery of basic skills. It equips students with a concise and powerful means of communication. Mathematical structures, operations, processes and language provide students with a framework and tools for reasoning, justifying conclusions and expressing ideas clearly. Through mathematical activities that are practical and relevant to their lives, students develop mathematical understanding, problem-solving skill and related technological skills that they can apply in their daily lives and eventually in the workplace.

Mathematics is a powerful learning tool. As students identify relationships between mathematical concepts and everyday situations and make connections between mathematics and other subjects, they develop the ability to use mathematics to extend and apply their knowledge in other curriculum areas including science, music, art and language.

Key Skills Developed



Application and Problem Solving

Problem solving is central to learning mathematics. By learning to solve problems and by learning *through* problem solving, students are given numerous opportunities to connect mathematical ideas and to develop conceptual understanding. Problem solving forms the basis of effective mathematics programs and should be the mainstay of mathematical instruction.

Communication and Expression

Communication is the process of expressing mathematical ideas and understanding orally, visually, and in writing, using numbers, symbols, pictures, graphs, diagrams, and words. Communication is an essential process in learning mathematics. Through communication, students are able to reflect upon and clarify their ideas, their understanding of mathematical relationships, and their mathematical arguments.

Integration and Connectivity

As students make connections, they begin to see that mathematics is more than a series of isolated skills and concepts, and that they can use their learning in one area of mathematics to understand another. Seeing the relationships among procedures and concepts also helps develop mathematical understanding. In addition, making connections between the mathematics they learn at school and its applications in their everyday lives not only helps students understand mathematics but also allows them to see how useful and relevant it is in the world beyond the classroom.

Implementation

Students need to develop the ability to select the appropriate electronic tools, manipulative, and computational strategies to perform particular mathematical tasks, to investigate mathematical ideas, and to solve problems.

Reasoning

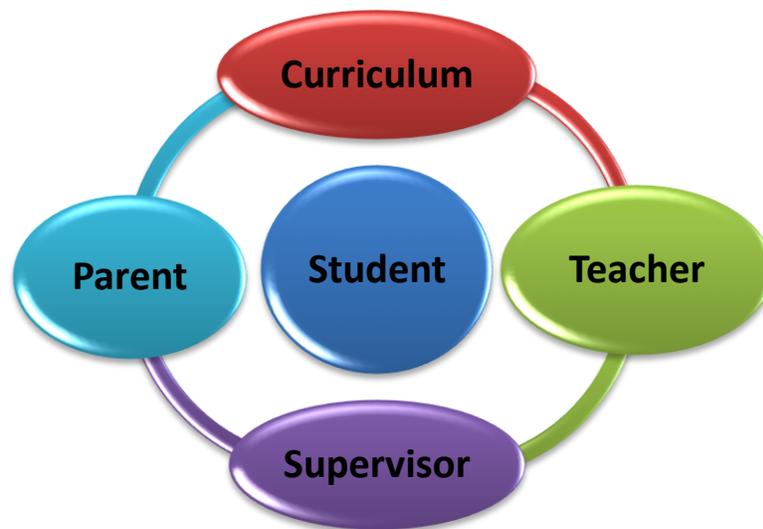
The reasoning process supports a deeper understanding of mathematics by enabling students to make sense of the mathematics they are learning. Students should be encouraged to reason from the evidence they find in their explorations and investigations.

Reflecting

Reflecting on the reasonableness of an answer by considering the original question or problem is another way in which students can improve their ability to make sense of problems. Reflecting on their own

thinking and the thinking of others help students make important connections and internalize a deeper understanding of the mathematical concepts involved.

Roles and Responsibilities in Mathematical Education



Students. Students have many responsibilities with regard to their learning. Students who are willing to make the effort required and who are able to apply themselves will soon discover that there is a direct relationship between this effort and their achievement in mathematics. However, for some students who will find it more difficult to take responsibility for their learning because of special challenges they face the attention, patience, and encouragement of teachers and family can be extremely important factors for success. However, taking responsibility for their own progress and learning is an important part of education for all students. Students are also encouraged to pursue opportunities outside the classroom to extend and enrich their understanding of mathematics

Parents. Parents have an important role to play in supporting student learning. By becoming familiar with the curriculum, parents can find out what is being taught in each grade and what their child is expected to learn. This awareness will enhance parents' ability to discuss schoolwork with their child, to communicate with teachers, and to ask relevant questions about their child's progress. The mathematics curriculum has the potential to stimulate interest in lifelong learning not only for students but also for their parents and all those with an interest in education.

Teachers. Teachers and students have complementary responsibilities. Teachers are responsible for developing appropriate instructional strategies to help students achieve the curriculum expectations, and for developing appropriate methods for assessing and evaluating student learning. Teachers bring enthusiasm and varied teaching and assessment approaches to the classroom, addressing different student needs and ensuring sound learning opportunities for every student.

Recognizing that students need a solid conceptual foundation in mathematics in order to further develop and apply their knowledge effectively, teachers endeavour to create a classroom environment that engages students' interest and helps them arrive at the understanding of mathematics that is critical to further learning. Opportunities to relate knowledge and skills to wider contexts will motivate students to learn and to become lifelong learners.

Supervisor . The supervisor works in partnership with teachers and parents to ensure that each student has access to the best possible educational experience. To support student learning, they should ensure that the curriculum is being properly implemented in all classrooms through the use of a variety of instructional approaches, and that appropriate resources are made available for teachers and students. To enhance teaching and student learning in mathematics, supervisors promote learning teams and work with teachers to facilitate

teacher participation in professional development activities like PEP and CPD.

Differentiation

'Each child is important and each capacity is respected'

Providing a differentiated curriculum is necessary to fulfil the learning needs of all groups of pupils. Appropriate activities are planned to suit the levels of students' ability. Teachers provide support for the low achievers.

Support worksheets are given to those students who need improvement. (Student vault in CRP is used to assign worksheets for students who need extra support. Remedial Classes are given to students who need extra support.)

Extra support is provided in class for students identified with special needs from Grades 1 - 5. Groups are organized in a flexible way to give extra help to some children during the learning activities.

Teachers provide advanced level questions and opportunities for extended learning and research work to G and T within the class rooms. They are provided with extra challenging questions. (Accelerate math)

Ownex, Inter school competitions, are platforms to Gifted and Talented students to show their abilities.

Cross-curricular learning

Math as a core subject can be related to other subjects like Science, Social studies, English, Moral instruction and Art. A large number of scientific formulae are represented in the form of mathematical expressions, for which it is very necessary for the student to have sound mathematical basis. Numerical skills are applied in solving Science problems.

Language is the principal means of communication in every aspect of the learning process In science, students use a range of language skills, they build subject specific vocabulary, interpret diagrams and

charts, and read instructions relating to investigations and procedures.

Real Life Example:

Student learning is linked to daily life situations. Applications of theoretical material in real-life situations make content easier to understand, when it is demonstrated by real-life examples. Hands-on activity is an effective way to learn as students directly observe and learn.

Mental Mathematics:

Mental mathematics is a combination of cognitive strategies that enhance flexible thinking and number sense. It is calculating mentally without the use of external memory aids.

Table test is conducted regularly from Grade 2 to Grade 5 daily

Problem Solving

Learning through problem solving should be the focus of mathematics at all grade levels. Students develop their own problem-solving strategies by listening to, discussing and trying different strategies. A problem-solving activity requires students to determine a way to get from what is known to what is unknown. If students have already been given steps to solve the problem, it is not a problem, but practice. A true problem requires students to use prior learning in new ways and contexts. Problem solving requires and builds depth of conceptual understanding and student engagement. Problem solving is a powerful teaching tool that fosters multiple, creative and innovative solutions. Creating an environment where students openly seek and engage in a variety of strategies for solving problems empowers students to explore alternatives and develops confident, cognitive mathematical risk takers.

Bar model strategy to be done from grades 1 to 5

Visualization:

The use of visualization in the study of mathematics provides students with opportunities to understand mathematical concepts and make

connections among them. Spatial visualization enable students to describe the relationships among and between 3-D objects and 2-D shapes. Measurement visualization goes beyond the acquisition of specific measurement skills. Measurement sense includes the ability to determine when to measure, when to estimate and which estimation strategies to use.

Concept of visualizing a word problem is introduced from Grade 2 to 5 for students to identify the operation.

Collaborative learning:

Collaborative learning refers to methodologies and environments in which learners engage in a common task in which each individual depends on and is accountable to each other. It involves use of small groups so that all students can maximize their learning and that of their peers. Collaborative learning activities can include collaborative writing, group projects, and other activities.

The benefits of collaborative learning include:

- Development of higher-level thinking, oral communication, self-management, and leadership skills.
- Increase in student retention, self-esteem, and responsibility.

Inquiry Based Learning:

Inquiry-based learning (IBL) can encourages students to discover, solve, explore, collaborate, and communicate. Also, IBL makes class more enjoyable for both teachers and students, and can bring students closer to the real experiences of mathematicians.

Math week/Puzzle of the week:

The puzzle of the week will be conducted every week. The challenging questions will be displayed on the mobile board. During break time, the students will read the question and drop the answers in the box kept near the board. The Students who dropped the correct answer will be called on the stage during assembly.

Math Quiz:

Math quiz will be conducted every year to create an interest among the students and develop logical thinking, abstract thinking, reasoning and higher order thinking skills. Preliminary round will be conducted for all the students. 8 students each from grades 1 to 5 will be selected. It consists of Warm Up round followed by Take Your Pick, Visual Round, Puzzle Round and Rapid Fire round.

Digital learning / Innovative practices

The 21st century learners can be rightly referred as 'digital natives.' They live in a digital age where they have access to a vast amount of information at their fingertips. They are exposed to the knowledge explosion, are probably born with ICT skills. They are digitally literate, which can be tapped in a useful way.

- Innovative approaches such as flipped classroom, Team teaching.
- BYOD.
- Use of digital Apps Gizmos, Nearpod, Microsoft forms, Padlet, Quizizz, Socrative, classkick

New initiative: To enhance the students problem solving, and decision making skills,

- Table test everyday
- Bar model strategy
- Visualizing the word problem
- Accelerate math for the G & T.
- Remedial support for Low achievers.
- Mock test for Asset in every term (June, October, November, December and January)
- Class worksheets with Asset questions will be continued.

Instilling Values and Skills across Curriculum GEMS Core Values

GEMS Core Values form the foundation of the GEMS educational programme. These Core Values are unique to **GEMS**, and are part of the planned curriculum, woven into the very fabric of school life.

- **One Team**
- **Excellence**
- **Always Learning**
- **Care**

Assessments - an integral part of teaching and learning

Assessment is an integral part of the teaching and learning process. It involves gathering information through various assessment techniques to grade students. Assessment provides information to the teacher about students' achievement in relation to the learning objectives. With this information, the teacher makes decisions about what should be done to improve the teaching methods and enhance the learning of the students.

- Assessment provides feedback to **students**, allows them to understand their strengths and weakness. Through assessment, students can monitor their own performance and progress. It also points out to them in the direction they need to improve further.
- Assessment provides feedback to **teachers**, enables them to understand the strengths and weaknesses of their students. It provides information about students' achievement of the learning outcomes as well as the effectiveness of their teaching.
- Assessment provides feedback to **schools**. The information gathered facilitates the promotion of students from one level to the next. It also allows the schools to review the effectiveness of their instructional programme.
- Assessment provides feedback to **parents**, allows them to monitor their children's progress and achievement.

In addition to the written tests, teachers conduct performance based assessment using the following suggested modes:

- Inquiry based learning
- Research based project work
- Hands-on activities
- Group Discussions
- Extended learning
- Power point presentations
- E- portfolio
- Notebook work.

External Examinations

ASSET/CAT4/TIMSS

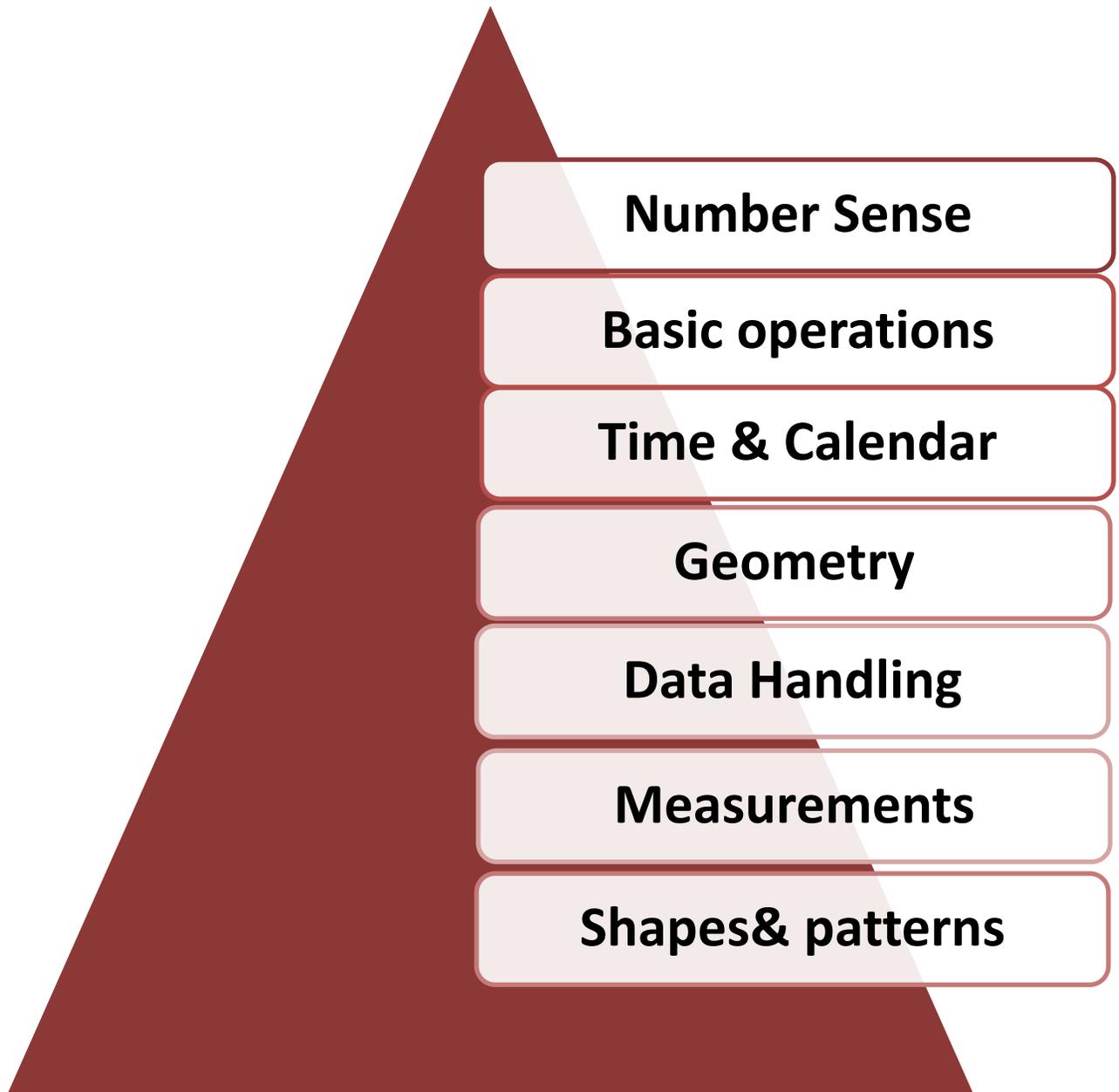
ASSET is an internationally administered program of assessments with tests appropriate for grades 1 to 5. CAT4 – 1, 3, and 5

Asset/TIMSS – In OOS Grade 3, 4 and 5

This test enables to evaluate the students in their reasoning, problem solving, logical and higher order thinking skills.

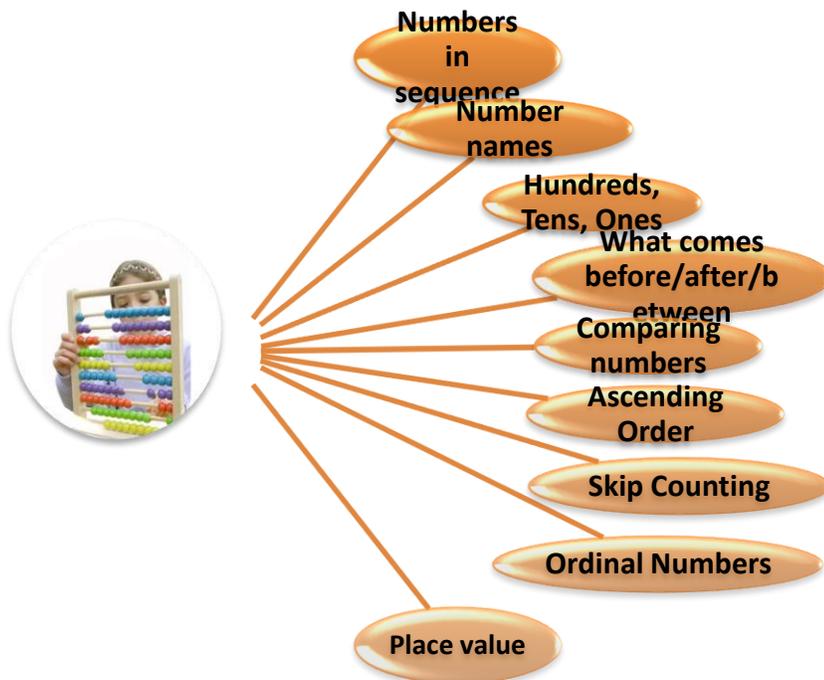
Children are given ample practice for the test. Modification of curriculum are made to fill in the gaps and ensure all topics/skills covered are aligned with TIMSS, CAT4 and ASSET assessments.

Range and Content



Number Sense

GRADE 1



<p>Number in sequence</p> <ul style="list-style-type: none"> ➤ Recognize and write the numbers in sequence till 500 	<p>Number names</p> <ul style="list-style-type: none"> ➤ Recognize and write the number names till 500
<p>Hundreds, Tens, Ones</p> <ul style="list-style-type: none"> ➤ Arrange and write the digits for hundreds, tens and ones ➤ Place and place value ➤ Express the numbers as Hundreds, Tens and Ones. ➤ Standard and expanded form 	<p>What comes before/after/between</p> <ul style="list-style-type: none"> ➤ State the number that comes before ,after, in between till 500
<p>Ascending Order</p> <ul style="list-style-type: none"> ➤ Arrange in ascending order till 500 ➤ Arrange in descending order till 500 	<p>Skip Counting</p> <ul style="list-style-type: none"> ➤ Observe the pattern and skip count by 2's,5's and 10's
<p>Ordinal Numbers</p> <ul style="list-style-type: none"> ➤ Identify the ordinal numbers from 1st to 30th. Write the superscript till 30th. ➤ Apply the ordinal number concept to represent position. 	<p>Comparing numbers</p> <ul style="list-style-type: none"> ➤ Use of symbols to compare two numbers till 500

Cross Curricular link/Real life/National Agenda/Digital

Math linked to English – I am a three letter word. My first letter is the fifth letter of the English alphabet. My second letter is the first letter of colour YELLOW and the third letter is same as my first letter.

Nearpod, Padlet, class kick

SDG Goal :Life below water

Numeration.

Faizan saw 1 less than 279 star fishes, 1 more than 279 octopuses, 279 crabs and 1 more than 280 turtles in the Sharjah Aquarium. Can you help Faizan to count these water animals and arrange them in the correct sequence?

Star fish –

Octopus –

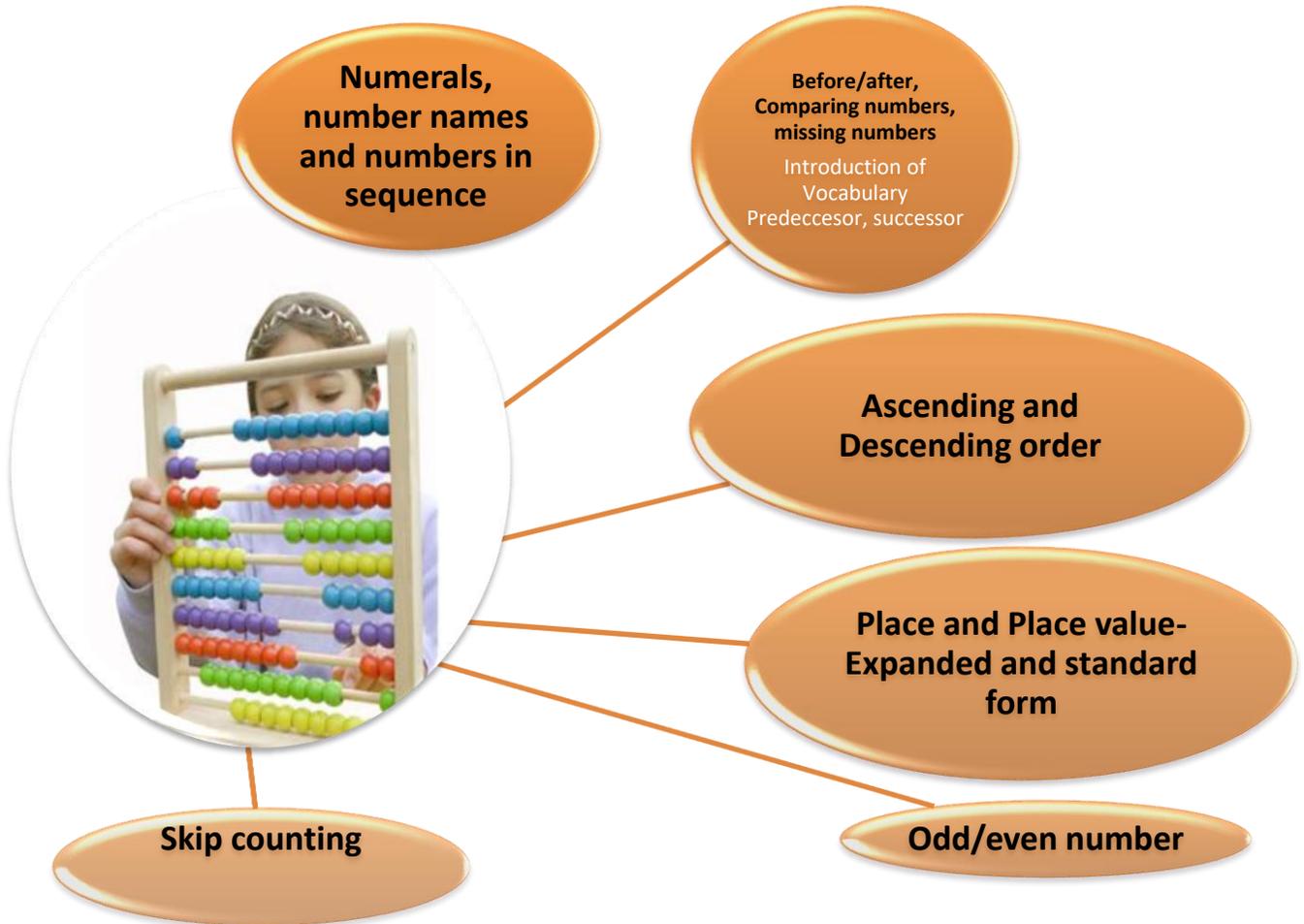
Crab –

Turtles -

H T O

Number Sense (750-9999)

GRADE 2



<p>Numerals , number names and numbers in sequence</p> <ul style="list-style-type: none"> ➤ Write the given numbers in words. ➤ Write the given numbers in figures (750 – 999) ➤ Write the numbers in sequence. 	<p>Before/after, Comparing numbers, missing numbers</p> <ul style="list-style-type: none"> ➤ Write the number that comes after/ in between/before ➤ (Predecessor/Successor) ➤ Identify big/small and equal numbers. ➤ Apply the signs (<,>=) to show relationship between numbers ➤ Compare the 3/4-digit numbers using the signs. ➤ Write the missing numbers.
<p>Ascending and descending order</p> <ul style="list-style-type: none"> ➤ Compare and arrange the numbers in ascending/descending order up to the largest 4 digit number. ➤ Apply the concept in real life situations. 	<p>Place value-Expanded and standard form</p> <ul style="list-style-type: none"> ➤ Write the place and place value of the given 4-digit number. ➤ Compare and state the value of a digit in different places(4-digit only)
<p>Odd/even numbers</p> <ul style="list-style-type: none"> ➤ Determine whether the given number is odd/even. ➤ Write the next odd/even number. ➤ Create odd/even numbers using the given digits (greatest/smallest/2 digit/3 digit). 	<p>Skip counting</p> <ul style="list-style-type: none"> ➤ Arrange the numbers in the order of skip counts by 2's, 3's and 5's. ➤ Identify the pattern of skip counting and complete the sequence.

**Cross curricular link/Real life
Math linked to EVS**

Observe the given table and arrange the plants in the ascending and descending order based on their life span. Compare the life span of Ghaf Tree and tomato plant.

Digital Initiatives: Zoom, MS forms, Nearpod, Padlet, Quizizz, Socrative, testmoz,, Polly.

SDG No. 15- Life on Land :

The number of lights switched off in Teena's neighbourhood during Earth hour is shown below. Help her to read the number.

Emirates Environmental Group has planted 1498 Ghaf trees in the Emirate of Sharjah as part of its afforestation drive. Show the number of Ghaf trees planted in abacus and write the next five numbers in sequence?

Number Sense (1000-9999)

GRADE 3



<p>Number in sequence</p> <ul style="list-style-type: none"> ➤ Write number from 1000 till 9999 in sequential form 	<p>Number names</p> <ul style="list-style-type: none"> ➤ Read and write number names in words and figures till 9999
<p>Place Value</p> <ul style="list-style-type: none"> ➤ Specify the difference between place and place value. ➤ Write the place and place value of a specified number. 	<p>Building and Comparing Numbers</p> <ul style="list-style-type: none"> ➤ Construct the greatest and smallest number using the given digits. ➤ Identify the greatest and smallest in given set of numbers.

	<ul style="list-style-type: none"> ➤ Express whether a number is greater than, equal to or less than another number.
<p>Predecessor and Successor</p> <ul style="list-style-type: none"> ➤ Demonstrate numbers before and after a given number. 	<p>Rounding Numbers</p> <ul style="list-style-type: none"> ➤ Round to the nearest tens
<p>More than/ Less than</p> <ul style="list-style-type: none"> ➤ Identify the number that is 10/100/1000 more than a specified number. ➤ Identify the number that is 10/100/1000 less than a specified number. 	

Cross Curricular link/Real life/National Agenda/Digital

National Agenda- Asset-

Look at the numbers shown below?

89, 80, 91, 77, 87.

Which of these can be said about the given numbers?

- They are all greater than 79
- They are all less than 90
- They are all between 70 and 90
- They are all between 75 and 95.

Digital Initiatives: Zoom, MS Teams, Nearpod, Padlet, Testmoz,

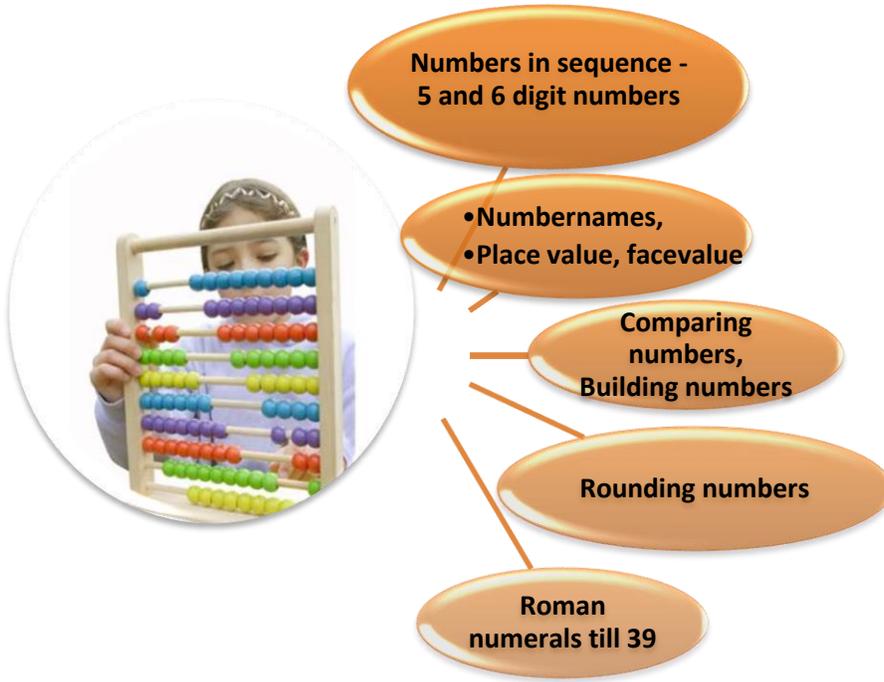
SDG - 12 -Responsible consumption & production

The UAE government always focuses on the utmost care and attention to its environment, as it is an integral part of a country, history and its heritage. The solar panels installed in the construction of sustainable city (Expo 2020) aims to preserve the environment. The 40,000 solar panels were installed till March 2021 and 3750 were required more in competition of the sustainable city.

- Find the total number of solar panels required.
- Rearrange the number and build a greatest 5 digit number.
3. Represent the same using beads in the abacus

Number Sense (99999 – 999999)

GRADE 4



<p>Numbers in sequence:</p> <ul style="list-style-type: none"> ➤ Read and write the 5 digit and 6 digit numbers. ➤ Express the number in expanded form and standard form. 	<p>Number Names, Place value and Face value:</p> <ul style="list-style-type: none"> ➤ Write the number names for 5 digit and 6 digit numbers ➤ Identify and write the place, place value and face value of the numbers till lakh place.
<p>Comparing numbers, Building numbers:</p> <ul style="list-style-type: none"> ➤ Compare and order the given set of 5 and 6 digit numbers in Ascending and Descending order ➤ Create 5 digit and 6 digit numbers with the given number cards and rewrite the greatest and smallest numbers with and without repeating the digits. 	<p>Rounding Numbers:</p> <ul style="list-style-type: none"> ➤ Estimate the numbers to nearest 100 place.

Roman Numerals

- Represent Hindu-Arabic numerals from 1 to 39 in the Roman numerals and 50,100,500 1000 using pneumonics LCDM(Lucky Cats Drink Milk)

Cross Curricular link/Real life/National Agenda/Digital

Math linked to SST-Compare numbers based on the population of different emirates of UAE. (6 and 7 digit numbers)

Digital : Zoom, MS form, Nearpod, Padlet, Testmoz

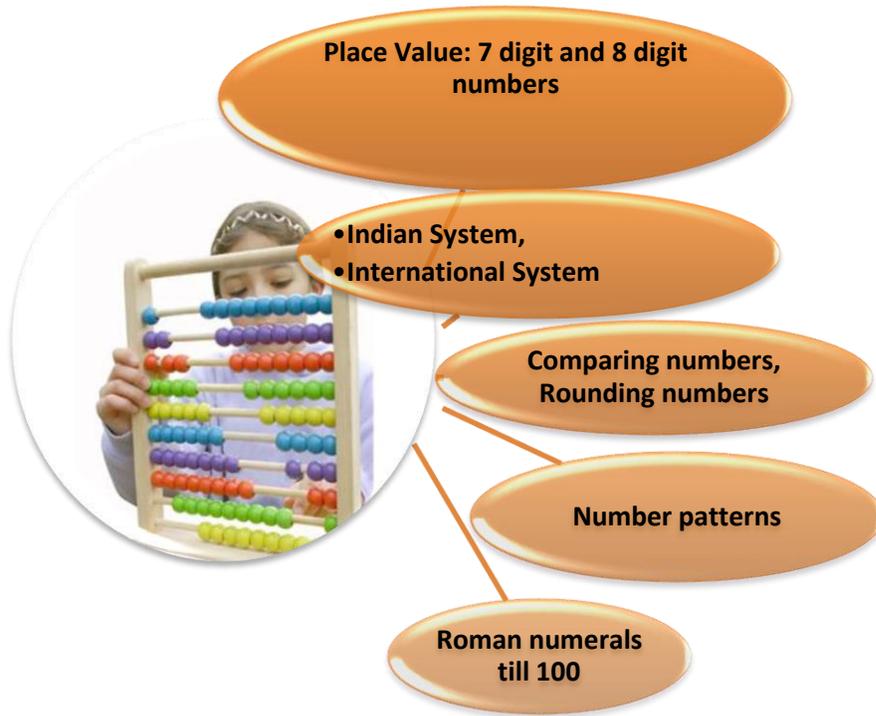
SDG-3- Good Health and Well Being

The Dubai cares is arranging snack packets for "Dubai Run" participants. There are 1,46,045 people. Represent it in a place value chart.

How many snack packets should be ordered rounded to the nearest 100? Can they round down the figure or round up the figure?

Number Sense 7,8 and 9 digits

GRADE 5



<p>Place value: 7 digit and 8 digit numbers:</p> <ul style="list-style-type: none"> ➤ Write the place, place value, face value of 7-digit and 8-digit numbers ➤ Differentiate between place value and face value. 	<p>Indian System and International System</p> <ul style="list-style-type: none"> ➤ Write the number name of 7-digit and 8-digit numbers in Indian and International system. ➤ Write the Expanded Notation
<p>Comparing numbers, Rounding numbers:</p> <ul style="list-style-type: none"> ➤ Compare and order the given set of 7 and 8 digit numbers in Ascending and Descending order <p>Rounding Numbers:</p>	<p>Roman Numerals</p> <ul style="list-style-type: none"> ➤ Convert Hindu-Arabic numerals into Roman numerals and vice-versa till 100.

- Estimate the numbers to nearest 1,000 place
- Determine the Successor and Predecessor of the numbers .

- Represent Hindu-Arabic numerals from 1 to 39 in the Roman numerals and 50,100,500 1000 using pneumonics LCDM(Lucky Cats Drink Milk)

Cross Curricular link:

Math linked to S.st- Find the areas of 7 continents and arrange in order of largest to smallest land area.

Digital Initiative: Zoom, MS Forms, Padlet, Nearpod, Peardeck

SDG goal: 15: Life on Land

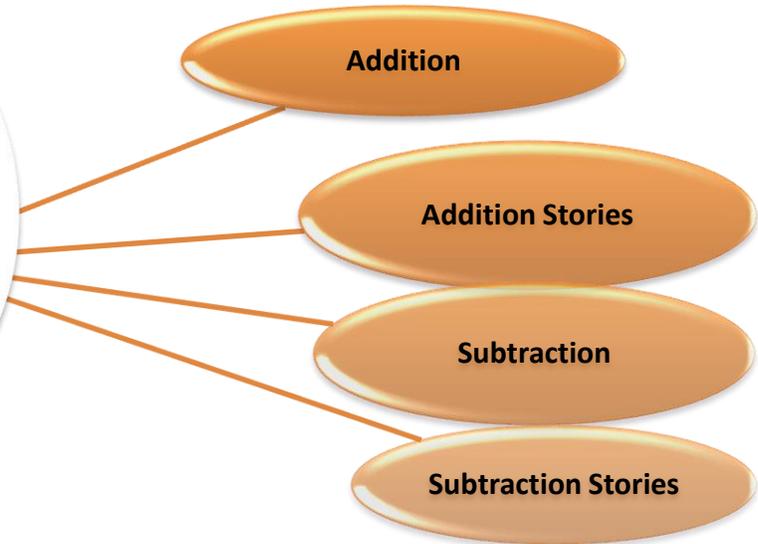
Deforestation causes an increased amount of carbon dioxide emissions and soil erosion as well as the destruction of forest habitat and the loss of biological diversity of both plants and animals. We depend on forests for our survival, from the air we breathe to the wood we use. Besides providing habitats for animals and livelihoods for humans. Conserve trees and forests in your area

Find out the top 5 countries with the worst deforestation rates of primary forest.

1. Construct a table which shows the rate of deforestation in 5 top countries.
2. Raju was rounding the forest area of these countries to the highest place. Which three countries have the forest area around 10 million when he rounded?

BASIC OPERATIONS

GRADE 1



<p>Addition</p> <ul style="list-style-type: none"> ➤ Solve 1,2 and 3 digit addition without regrouping. 	<p>Addition Stories</p> <ul style="list-style-type: none"> ➤ Apply Real life stories in addition and solve (word problems without statements) ➤ Create real life stories in addition. ➤ Decide the operation.
<p>Subtraction</p> <ul style="list-style-type: none"> ➤ Solve 1,2 and 3 digit subtraction without regrouping. 	<p>Subtraction Stories</p> <ul style="list-style-type: none"> ➤ Apply Real life stories in subtraction and solve (word problems without statements) ➤ Create real life stories in subtraction. ➤ Decide the operation.

Cross Curricular link/Real life

Math linked to EVS – There are 47 bee hives, 33 sheds, 16 cages and 4 stables. Find out the total number of houses that can be moved from one place to another.

SDG Goal Good health and well being

On the annual sports day in OOS, Tina completed 100 jumping jacks and her friend Sima completed 87 jumping jacks. Find the total number of jumping jacks they both did altogether.

BASIC OPERATIONS

GRADE 2



Addition

Subtraction

Multiplication

Addition

- Apply the properties of addition.
- Solve addition problems of 2/3 digit numbers without regrouping.
- Apply the concept of regrouping and solve the given sums.
- Arrange the given 2/3 digit numbers and find the sum.
- Frame statements and solve the given addition word problems.
- Create addition word problems (using numbers with regrouping) and solve.

Subtraction

- Apply the properties of subtraction.
- Solve subtraction problems of 2/3 digit numbers without regrouping.
- Apply the concept of borrowing/regrouping and solve the given sums.
- Arrange the given 2/3 digit numbers and find the difference.
- Frame statements and solve the given subtraction word problems.
- Create subtraction word problems (using numbers with regrouping/borrowing) and solve.

Multiplication

- Apply the properties of multiplication.
- Illustrate the order property of multiplication and write the multiplication fact for the same.
- Create groups to show the given multiplication /addition facts.
- Express the addition fact and multiplication fact for the given groups.
- Solve 2/3 digit multiplication problems without regrouping.
- Apply the concept of regrouping and solve the given multiplication problems.
- Frame statements and solve the given multiplication word problems.

Cross curricular link/Real life/National Agenda/Digital

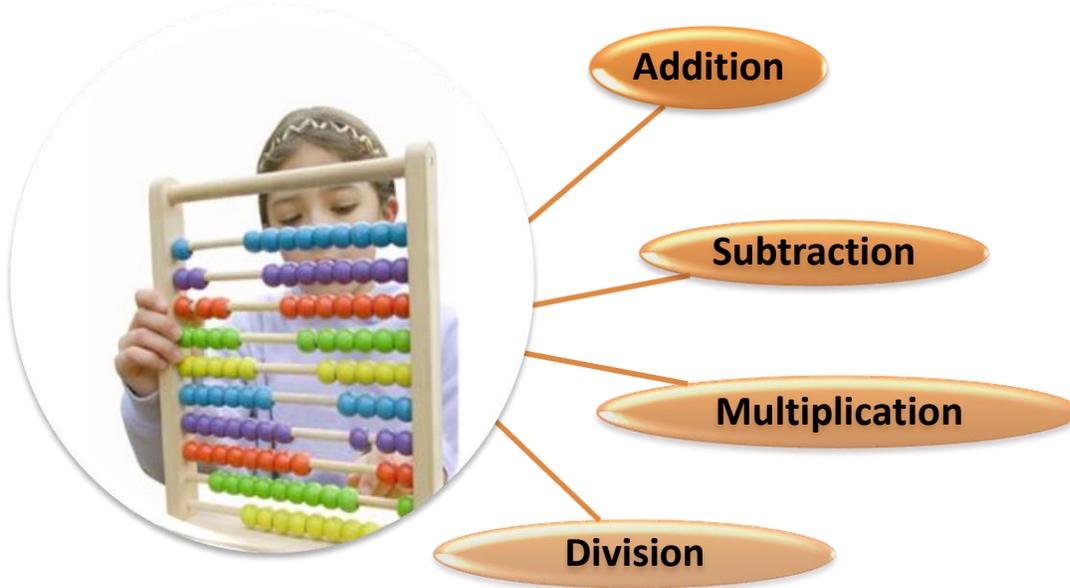
Word problems (addition, subtraction and multiplication) pertaining to different real life situations/cross curricular/ ME will be given in the notebook.

SDG Goal: 15. LIFE ON LAND 3. GOOD HEALTH AND WELL BEING

To conserve the environment UAE Government decided to test vehicles to reduce the emission of toxic gases. In Dubai they tested 246 cars and in Sharjah they tested 323 cars. How many cars did they test in all?

Basic Operations

GRADE 3



<p>Addition</p> <ul style="list-style-type: none"> ➤ Solve 4 digit number addition sums with regrouping including money. ➤ Solve problems on missing addends ➤ Analyze, interpret and solve word problems related to real life application including money. 	<p>Subtraction</p> <ul style="list-style-type: none"> ➤ Subtract 3 and 4 digit numbers with and without regrouping ➤ Frame addition and subtraction sentences based on the given numbers ➤ Analyze, interpret and solve word problems related to real life application including money. ➤ Analyze, interpret and solve mixed word problem
<p>Multiplication</p> <ul style="list-style-type: none"> ➤ Solve 3 digit by 1 digit multiplication sum with regrouping. ➤ Solve 2 digit by 2 digit multiplication sum with and without regrouping. ➤ Solve multiplication sums with 10's and 100's ➤ Analyze, interpret and solve word problems related to real life application including money. ➤ Analyze, interpret and solve mixed word problem 	<p>Division</p> <ul style="list-style-type: none"> ➤ Demonstrate their understanding that division is equal sharing, equal grouping and repeated subtraction. ➤ Divide 2 and 3 digit numbers by 1 digit number and verify your answer. ➤ Express that division is the inverse of multiplication and vice versa. ➤ Analyze, interpret and solve word problems related to real life application.

Cross Curricular link/Real life/National Agenda/Digital

Addition- (Real life application) – The monthly expenditure of Karen’s family is AED.4985 and saving is AED.3870, what is the monthly income of the family?

Subtraction-(Cross curricular Link)-

We get a chance to plant a tree in Sharjah Municipality for every 300 kg of cans we collect as part of **YOUR CAN FOR A TREE** initiative of Eco Club. Grade 3 collected 187 kg cans so far. Find out the quantity of cans we need more to plant two trees.

Multiplication-(National Agenda –Asset)

Which TWO statements can be represented by the expression 9×3 ?

- a. John runs 3 miles each day for 9 days.
- b. There are 9 birds on a branch. Then, 3 birds fly away.
- c. Mohan has 3 friends who equally share 9 sheets of stickers.
- d. The elementary school has 9 third grade classrooms each with 3 computers.

Division - (Cross curricular Link)-

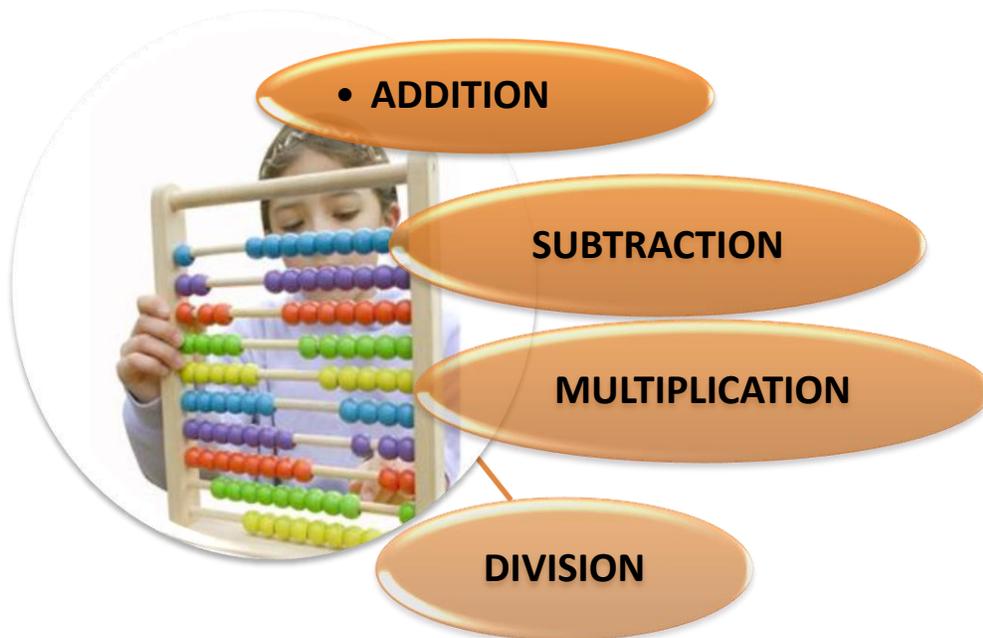
The moon completes 7 orbits around the earth in 196 days. How many days it takes to complete 1 orbit?

SDG 4-QUALITY EDUCATION:

In order to provide quality education to all, OOS conducted a campaign in which 46 underprivileged students were chosen from each emirate. How many students participated in the campaign?

BASIC OPERATIONS

GRADE 4



<ul style="list-style-type: none">➤ Addition:➤ Solve addition of 5 digit and 6 digit numbers➤ Analyse and solve the word problems with the appropriate operation➤ Apply the concept to solve real life application problems	<p>Subtraction:</p> <ul style="list-style-type: none">➤ Solve Subtraction of 5 digit and 6 digit numbers➤ Perform subtraction of 5 and 6 digit numbers with and without borrowing➤ Analyse and solve the word problems➤ Apply the concept to solve real life application problems
<p>Multiplication:</p> <ul style="list-style-type: none">➤ Solve 4 digit number x 1 digit number	<p>Division:</p> <ul style="list-style-type: none">➤ Divide a 3 digit number by 1 digit number and check the answer using the formulae➤ Solve Division of a 3 digit number by a 2-digit number.

- Solve multiplication sums with 3 digit x 2 digit and 3 digit x 3 digit numbers
- Create a multiplication word problem and solve it (using 3 digit and 2 digit numbers)
- Apply the concept of multiplication in real life situations
- Analyse and solve the word problems related to money in all four operations.

- Apply the concept of division in real life situations
- Four Operations:**
- Analyse, Interpret and apply the skill of addition, subtraction, multiplication and division to solve real life situations.

Cross Curricular link/Real life/National Agenda/Digital

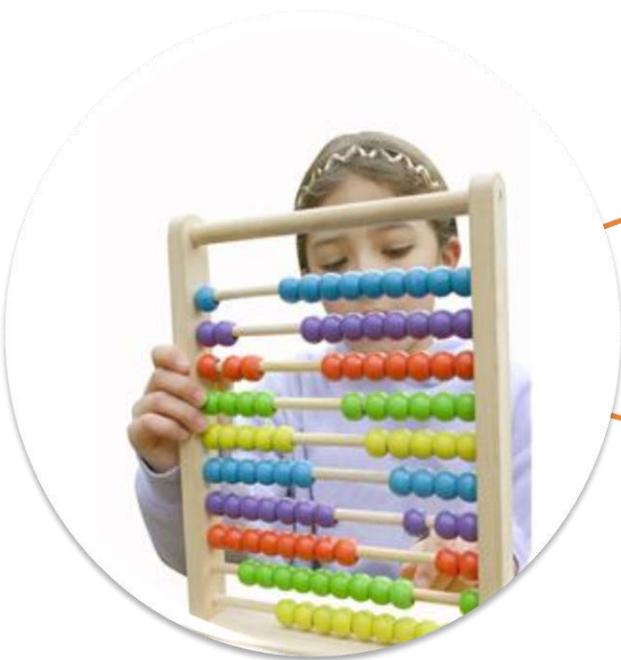
- **Math linked to English:** Marcopolo covered 24000 km within 24 years.If he was covering equal distance every year,how many kilometers did he cover within 1 year?

SDG - 9: Industry, Innovation and Infrastructure

Questions based on The Mohammad bin Rashid Al Maktoum Solar Park. (Paragraph will be given)

BASIC OPERATIONS

GRADE 5



- Addition, Subtraction
- and their applications

**Multiplication, Division
and their applications**

<ul style="list-style-type: none"> ➤ Addition, Subtraction and their applications: ➤ Evaluate addition and subtraction using compensation method ➤ Calculate profit and loss ➤ Analyse and solve the word problems ➤ Apply the concept to solve real life application problems ➤ Calculate average 	<p>Multiplication , Division and their Applications</p> <ul style="list-style-type: none"> ➤ Calculate the product of 4 digit number x 2 digit number, 4 digit number x 3 digit number. ➤ Divide a 4 and 5 digit number by 2 digit number and check the answer using the formulae ➤ Analyse and solve the word problems ➤ Apply the concept of multiplication and division to solve real life application problems
<p>Four Operations:</p> <ul style="list-style-type: none"> ➤ Decide the operation and solve word problems based on addition, subtraction and multiplication and division. 	

DIGITAL APPS: CLASS KICK, NEARPOD, SOCRATIVE

SDG 14 (Life under water) The scientific literature shows clearly that sustainable fishing can help protect turtles, birds, and many species of marine mammals by managing for specific interactions with them. Joan went fishing. On the first cast she hooked a fish 80 feet from the boat. Each time she reeled in 10 feet of line, the fish would take out 5 feet. How many times did she have to reel in to get the fish to the boat?

Shapes and Patterns - 1

GRADE 1



2D Shapes

3D Shapes

Patterns

2D Shapes <ul style="list-style-type: none">➤ Recognize 2D shapes	3D Shapes <ul style="list-style-type: none">➤ Recognize 3D shapes➤ Classify 2D and 3D shapes
Patterns <ul style="list-style-type: none">➤ Create patterns with shapes (frequency 2)	

Cross Curricular link/Real life

Math linked to EVS – Create a pattern using the shapes of the moon. (frequency 2)

SDG Goal:Life below water.

With the help different shapes create three water animals.

SHAPES

GRADE 2



**3D Shapes
Properties of 3D
shapes.**

3D shapes

- List examples for 3D shapes from real life.
-
- Classify the given objects based on the 3D shapes.
- Describe the properties of 3D shapes.

Cross curricular link/Real life/National Agenda/Digital

Relate any 5 objects that you use in daily life to the 3D shapes you have learnt. Write properties for each.

SDG No: 7 - Affordable and clean energy

SHAPES, SPACE AND PATTERN

GRADE 3

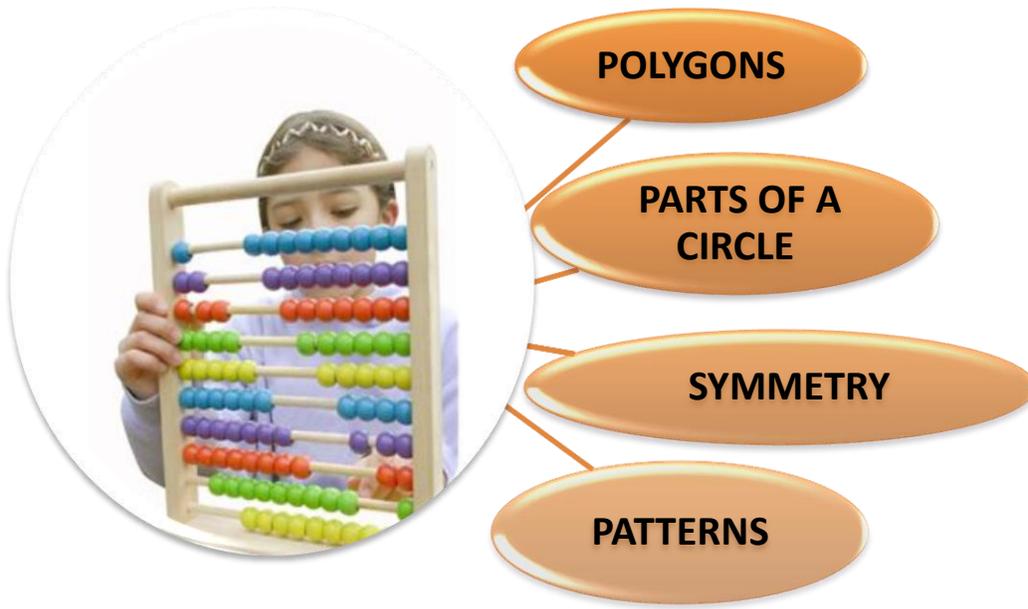


Identify patterns in alphabets, numbers shapes.

Identify patterns in alphabets, numbers, shapes and continue to build on it.
Symmetry(**Asset type of questions**)

SHAPES, SPACE AND PATTERN

GRADE 4



<p>Polygons:</p> <ul style="list-style-type: none">➤ Illustrate different type of Polygons➤ Design your dream home with few polygons	<p>Parts of a circle:</p> <ul style="list-style-type: none">➤ Identify and label the parts of the circle➤ Calculate radius and diameter of a circle <p>Illustrate different type of Polygons</p>
<p>SYMMETRY:</p> <ul style="list-style-type: none">➤ Draw the line of symmetry of the given objects	<p>PATTERNS:</p> <ul style="list-style-type: none">➤ Create the number patterns using different operations

Cross Curricular link/Real life/National Agenda/Digital

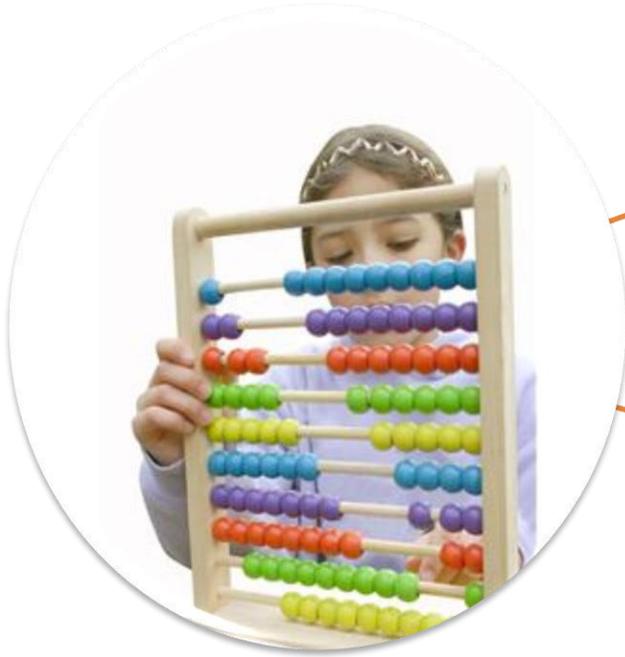
Math linked with Science – Shapes of various things in nature and their symmetry.

SDG-13-Climate Action

A hexagonal shape playing area in the beach front was affected by Tsunami and it was separated into 2 quadrilateral play areas. Illustrate it .

SHAPES, SPACE AND PATTERN

GRADES



LINE OF SYMMETRY

PATTERNS

<p>SYMMETRY:</p> <ul style="list-style-type: none">➤ Create the figure with 0,1,2 lines of symmetry➤ Draw the line of symmetry for polygons and alphabets	<p>PATTERNS:</p> <ul style="list-style-type: none">➤ Design the shape with $\frac{1}{4}$ turn and $\frac{1}{2}$ turn

SDG 3: Good Health and Well Being

Time

GRADE 1



Read the time in both ways (o'clock) digital, analogue

Introduction of a.m. and p.m.

'O' Clock

Time

- Read and write the time in both ways (digital and analogue)
- Introduction of a.m. and p.m.

- Relate everyday activities with time (o'clock)

Cross Curricular link/**Real life/**

Lia went to Burj Khalifa with her parents at 9 O' clock in the morning. They came back after 2 hours. What time did Lia come back? Show the time on the clock and write the time in both ways.

Cross Curricular link/Real life/

Ria went to the Creek park at 7 am. She played 2 hours there. Then she went to her friend house and came back to home after 3hours. At what time she reached home. How many hours she spent outside?

SDG 3. GOOD HEALTH AND WELL BEING

Match the picture of daily activities with the right time :

Pictures of having breakfast, Going to bed, Waking up, Students in classroom etc will be given on one side and different time when the activities need to be done will be given on the other side. The students have to match it correctly.

Time and Calendar

GRADE 2



Time-Half past

Calendar

Real life applications based on time

Time: a.m. and p.m.

Time-Half past

- Read and write the time in half past (both ways)
- Draw the hands of a clock for the given time in half past.
- **Real life application questions based on time (o' clock and half past) – calculation of time**
- **Time: a.m. and p.m.**

Calendar

- List the months and days in a week.
- Write the number of days in each month of year and leap year.
- Analyze the calendar and connect to real life to solve the given questions.

Cross curricular link/Real life/National Agenda/Digital

- **Math linked to EVS- a) Calendar linked to different Seasons and Clothing used in UAE.**

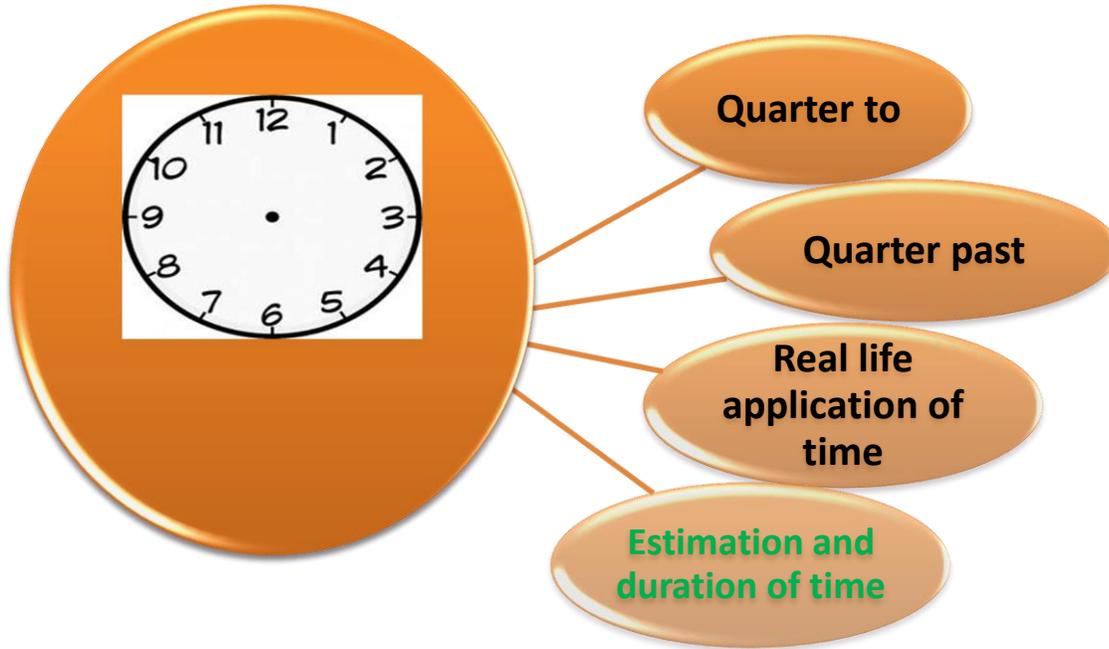
Answer the questions. (Calendar print out will be given)

1. **Shade the summer months of UAE in yellow. Write the type of clothes worn in those months? Give reasons.**
2. **Shade the winter months of UAE in green.**

SDG No: 7 - Affordable and clean energy

Time and Calendar

GRADE 3



Read and demonstrate time to half past	Read and demonstrate time to quarter past
Read and demonstrate time to Quarter to	Apply time to real life situations.
Estimation and duration of time	

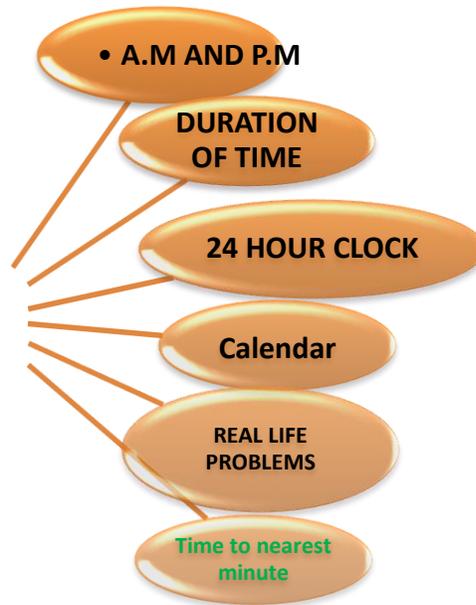
Cross Curricular link/Real life/National Agenda/Digital
Compare time zones of different countries with that of UAE.

SDG No. 7 – Affordable and Clean Energy

A solar panel can produce 320 watt energy in 30 minutes. Calculate the amount of energy it produces in 5 hours.

Time and Calendar

GRADE 4



<p>A.M. and P.M.</p> <ul style="list-style-type: none"> ➤ Express the time in a.m. and p.m. as well as daylight and darkness 	<p>Duration of time:</p> <ul style="list-style-type: none"> ➤ Calculate the duration between the given time
<p>24 hour clock</p> <ul style="list-style-type: none"> ➤ Conversion of time from 12 hour to 24 hour and vice versa 	<p>Real life Application Problems</p> <ul style="list-style-type: none"> ➤ Apply the concept of calendar in real life problems ➤ Analyse and apply the concept of time in real life situation ➤ Time to nearest minute (ASSET)

Cross Curricular link/Real life/National Agenda/Digital

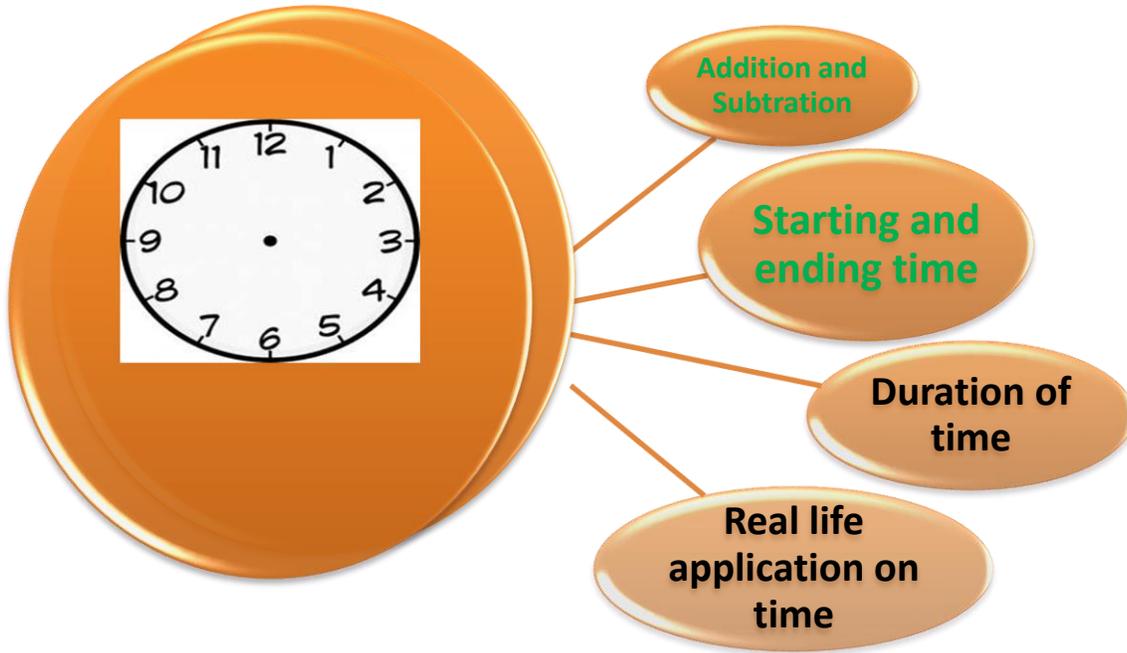
- **Math linked to EVS** – Represent the time egg of butterfly takes to hatch out as larva. Represent it in hours and minutes.

SDG -12: Responsible Consumption and Production

Focusing on sustainable Energy consumption and production Dubai RTA launched trial of two electric buses with opportunity charging technology. Bus No 1 started charging at the at the Al Quoz Bus Depot at 10: 30 pm and finished at 4: 45 am. How long it takes to charge the battery?

Time and Temperature

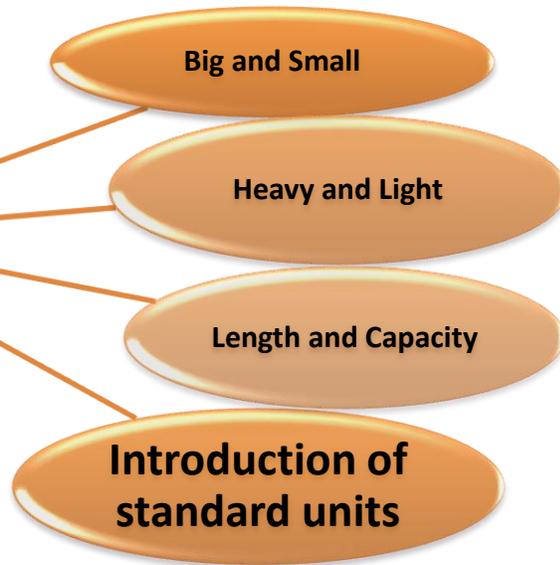
GRADE 5



<ul style="list-style-type: none">➤ Convert one unit of time to another unit of time.	<ul style="list-style-type: none">➤ Addition and subtraction of time.➤ Calculate starting and finishing.
<ul style="list-style-type: none">➤ Decide the operation and solve the word problems on starting time and finishing time.	

Measurement

GRADE 1



<p>Big and small</p> <ul style="list-style-type: none"> ➤ Estimate big and small using non-standard units 	<p>Heavy and Light</p> <ul style="list-style-type: none"> ➤ Estimate heavy and light using non-standard units
<p>Length and Capacity</p> <ul style="list-style-type: none"> ➤ Estimate the length and capacity using non-standard units 	<p>Introduction of standard units</p> <ul style="list-style-type: none"> ➤ Measurement of length, mass and capacity and estimating the same ➤ Addition and subtraction of measurements

Cross Curricular link/Real life/National Agenda/Digital

Math linked to EVS – Will you be able to measure the distance between Sharjah and Dubai using hand span and foot span? Why?

SDG 11- Sustainable cities and communities –

Name any three ECO friendly buildings in the UAE. Write which one is shortest and tallest.

Measurement

GRADE 2



**Measurement
of length**

**Measurement
of mass**

**Measurement
of capacity**

**Real life
application**

Measurement of length

- Estimate the length of the given object and use appropriate standard unit of measurement.

Measurement of mass

- Estimate and state the standard units of mass for measuring lighter and heavier objects.

Measurement of capacity

- Estimate the capacity of the given liquids.
- Use appropriate standard units of measurement.

Standard units of length, mass and capacity

- Estimate units of measurement
- Draw line segments
- **Real life application: addition, subtraction, multiplication**

Cross curricular link/Real life/National Agenda/Digital

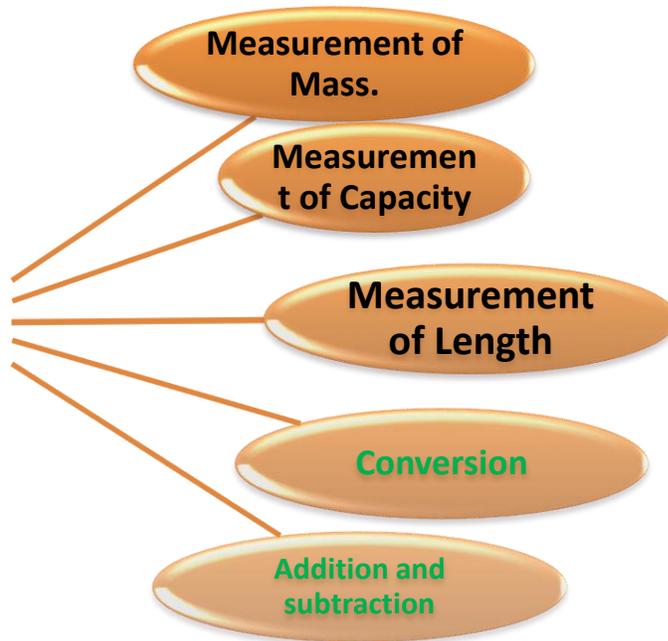
- **Math linked to EVS**– Compare the length of shadows formed at different times of the day.
- **Problem solving questions related to real life and Asset questions will be**

SDG No. 12 – Responsible Consumption and Production

SDG No: 12 - Responsible consumption and production

Measurement

GRADE 3



<p>Measurement of Length</p> <ul style="list-style-type: none"> ➤ Justify the need for standard unit of measurement ➤ Identify appropriate units used to measure length ➤ Convert metre to centimeter. ➤ Analyze, interpret and solve the given word problem. 	<p>Measurement of Mass</p> <ul style="list-style-type: none"> ➤ Identify appropriate units used to measure mass ➤ Convert Kg to g and vice versa. ➤ Calculate and find the different combination of different weights. ➤ Analyze, interpret and solve the given word problem.
<p>Measurement of Capacity</p> <ul style="list-style-type: none"> ➤ Identify appropriate units used to measure capacity ➤ Convert Litre to ml and vice versa. ➤ Calculate and find the different combination of different capacities. ➤ Analyze, interpret and solve the given word problem 	<p>Predict and apply the suitable units of measurement of length, mass and capacity.</p>

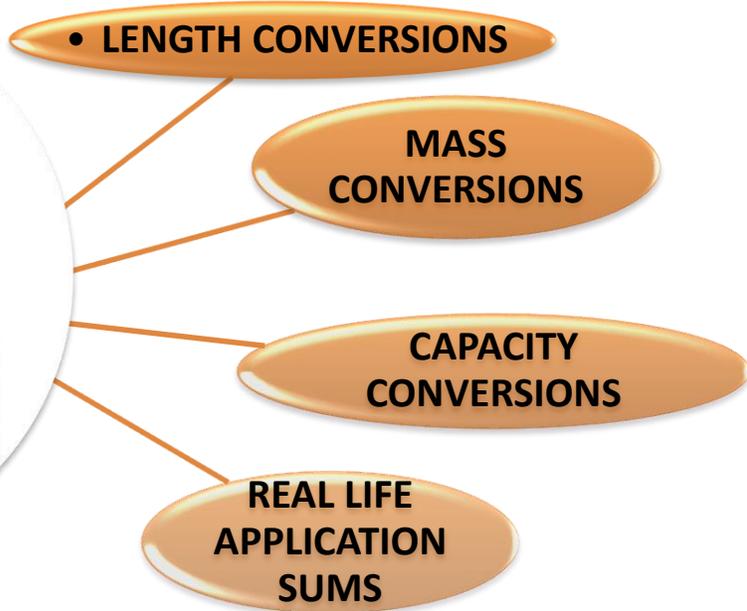
Cross curricular link/Real life/National Agenda/Digital

Due to consumption of junk food Sam's weight is 73 kg 500 g. He lost 6 kg 240 g after eating a balanced diet and regular exercise. What is his present weight ?

SDG 3 – Good Health and Well Being

MEASUREMENT

GRADE 4



<p>Length Conversions:</p> <ul style="list-style-type: none"> ➤ Convert measurement of Length from one unit to another ➤ m to cm, cm to m, km to m, m to km 	<p>Mass Conversions:</p> <ul style="list-style-type: none"> ➤ Convert one unit to another ➤ G to kg, kg to g
<p>➤ Capacity Conversions:</p> <ul style="list-style-type: none"> ➤ Convert one unit of unit to another ➤ L to ml and ml to L 	<p>Real life application sums</p> <ul style="list-style-type: none"> ➤ Apply the concept of Measurements in real life application ➤ Solve the word problems
<p>Fractions:</p> <ul style="list-style-type: none"> ➤ Distinguish like and unlike fractions ➤ Solve to find the fraction of a set 	<ul style="list-style-type: none"> ➤ Conversion of improper to mixed and vice versa ➤ Analyse and solve the word problems related to fractions

Cross Curricular link/Real life/National Agenda/Digital

- Math linked to Science- The moon is 3,84,400 km away from the planet Earth. Convert the distance of the moon from the earth in metres.

Cross Curricular link/Real life/National Agenda/Digital

Cross Curricular link-EVS

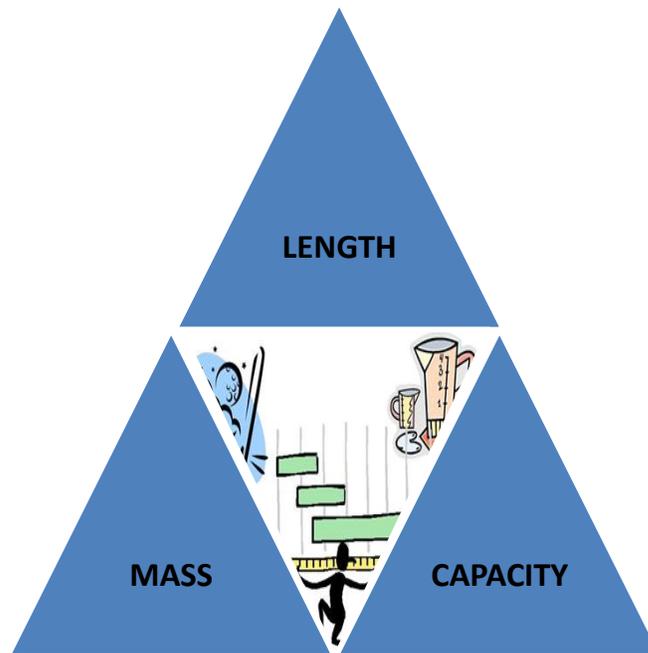
Mr. Mac weighs 60 kgs on earth. He weighs $\frac{1}{6}$ of his weight on the moon. What is his weight on the moon?

SDG 1-No Poverty

A shopkeeper had 400 m suit length in his shop. He sent 24580 cm to Somalia to help the drought affected people. How much suit length was left in the shop?

MEASUREMENT

GRADE 5



MEASUREMENT

- Convert one unit of length to another.
- Convert one unit of mass to another.
- Convert one unit of capacity to another.
- Addition and subtraction of measurement of Length, Mass and Capacity.
- Estimate the measures of length, weight and capacity.
- Decide the operations and solve word problems related to measurement.

FRACTIONS:

- Reduce fractions to lowest form.
- Find the missing terms of equivalent fractions.
- Compare and order unlike fractions.
- Addition and Subtraction of unlike fractions.
- Multiplication of fractions by whole numbers using cancellation method.
- Decide the operations and solve word problems related to real application using unlike fractions.

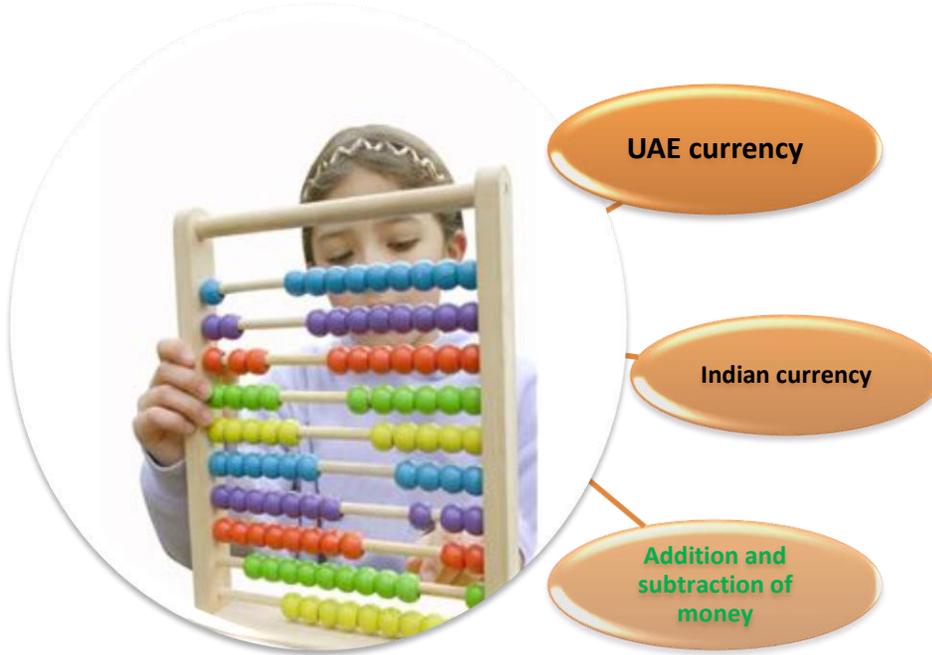
Cross curricular link:

Math linked to Science - Find out the daily requirement of calcium, sodium and potassium required for an adult.

SDG 3 – Good health and wellbeing

Money

GRADE 1



UAE currency ➤ Identification and recognition of UAE currency.	Indian currency ➤ Identification and recognition of Indian currency.
Addition and Subtraction of money	

Cross Curricular link/Real life/National Agenda/Digital

Math linked to EVS - Fathima purchased 2 bundles of spinach and 2 bundles of coriander. Each bundle costs 1 AED. How much did Fatimah spend in all?

Cross Curricular link/Real life/National Agenda/Digital

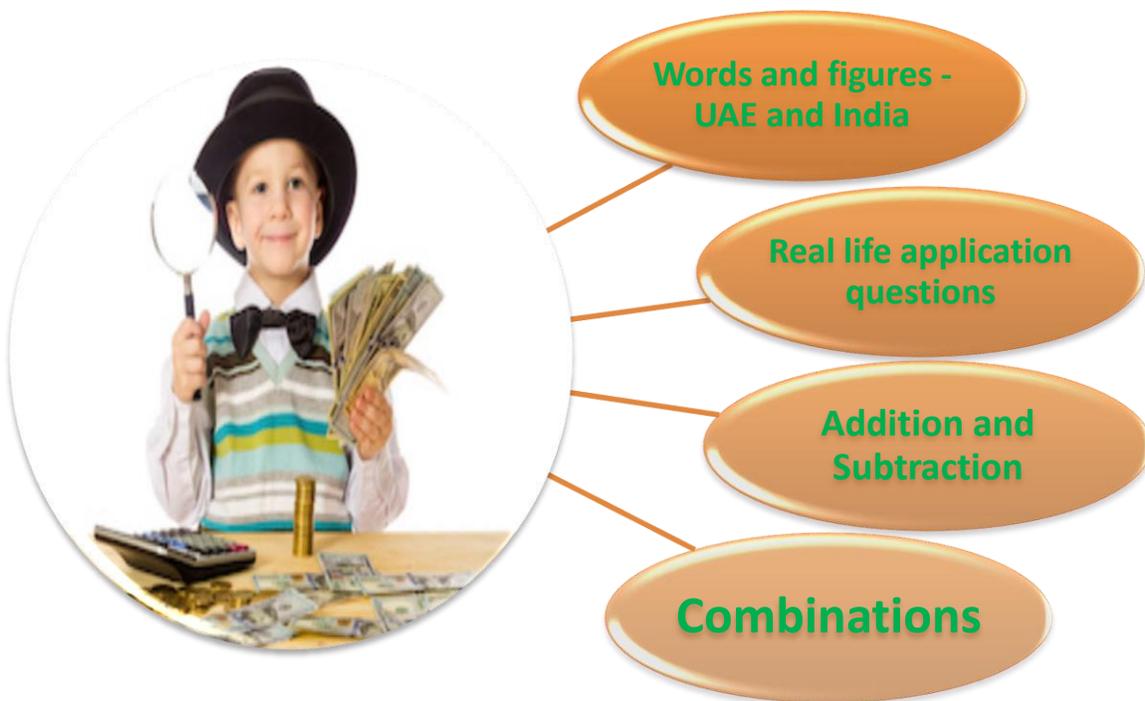
Fatima has AED 125. She gave AED 25 to Noor charitable society and the remaining amount to Dubai cares. How much amount did she give to Dubai cares?

SDG 7-Affordable and clean energy –

Farmers decided to use Solar energy in producing crops. the first farmer saved AED 150, the second farmer saved AED 378 and the third farmer saved AED 268. Who saved more money?

Money

GRADE 2



Money

- Express the given amount in words and figures.
- Form different combinations of coins for AED 1.
- Form different combinations of notes and coins that add up to AED 50.

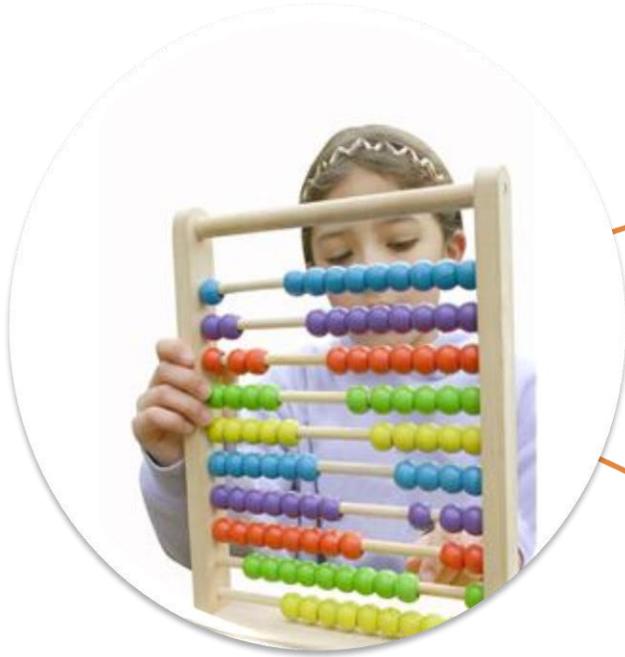
Cross curricular link/Real life/National Agenda/Digital

- Math linked to S.St- List any five traditional Emirati food items that you see in Global village and find out the price for each.
- Real life application questions will be given in the notebook.

SDG Goal: 1. NO POVERTY

Data Handling

GRADE 1



Collections

Tally marks

Collection

- Create a collection of objects.
- Sort and compare things from a given collection

- Interpreting of Tally marks

Cross Curricular link/Real life/National Agenda/Digital

Make a collection of UAE flags/ national emblem/ ghaf tree.

Make two collection of UAE flags such that one collection is 5 less than the other.

Cross Curricular link/Real life/National Agenda/Digital

Create a collection of any fruit and a collection of any vegetable. One should be 3 more than the other.

Make 2 collections of healthy food. Both the collections together should be 12.

SDG 3 – Good Health and Well Being

Make two collection of any healthy food. The number of one collection should be 3 more than the other.

Data handling

GRADE 2



Tally marks

Tally

- Represent the data given using Tally marks.
- Interpret the given Tally marks and solve the given questions.

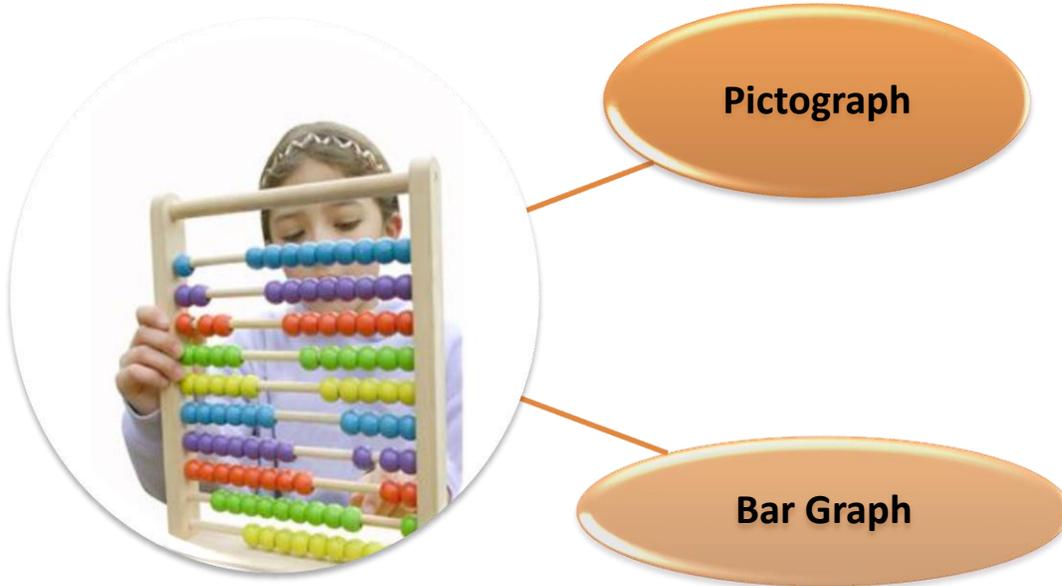
Cross curricular link/Real life/National Agenda/Digital

- Math linked to EVS– Collect the data on the rocks and minerals found in UAE- and express them in Tally.
- Math linked to English –
- From the given list of contractions draw tally marks for:
- Words where 'o' is omitted- _____
- Words where 'wi' is omitted- _____
- Words where 'ha' is omitted- _____
- Words where 'a' is omitted- _____

SDG No. 1 – No Poverty and SDG No. 2 – No Hunger

DATA HANDLING

GRADE 3



Pictograph	Bar Graph
<ul style="list-style-type: none">➤ Analyse and interpret data in a Pictograph➤ Represent the data in the form of pictograph and interpret it.	<ul style="list-style-type: none">➤ Analyze and interpret data in a bar graph.➤ Interpret the data and convert bargraph into pictograph

Cross Curricular link/Real life/National Agenda/Digital

Data Handling- Real life application-

The state of Kerala in India has currently witnessed huge floods, the most devastated in a century. Sahil, Manju, Neelu and Sumita of OOS Sharjah decided to donate their one month pocket money to help their fellow Indians. Draw a pictograph to represent each one's collection. Give a suitable title and decide the key.

Cross Curricular link/Real life/National Agenda/Digital

Oceans, lakes and rivers are filling up with harmful pollution at an alarming rate, endangering the lives of many marine animals.

Many sea creatures die after getting caught in plastic bags, containers and fishing nets, as well as ingesting plastic, metal and even glass.

A data of the endangered aquatic species will be given. Based on the given data children will be required to make a pictograph and represent the same using the picture cutouts.

The students will be asked to give a suitable title, decide the key and frame 2 questions based on the data provided.

Q- Here is the data of 5 of the many marine animals in serious danger from ocean pollution.

Mediterranean monk Seals - 1500

HECTORE DOLPHINS - 7000

THE HAWKSBILL TURTLE (FEMALE)- 8000

Yellow eyed penguins – 4000

Q1- According to the given data which marine animal do you think is the most endangered? Justify.

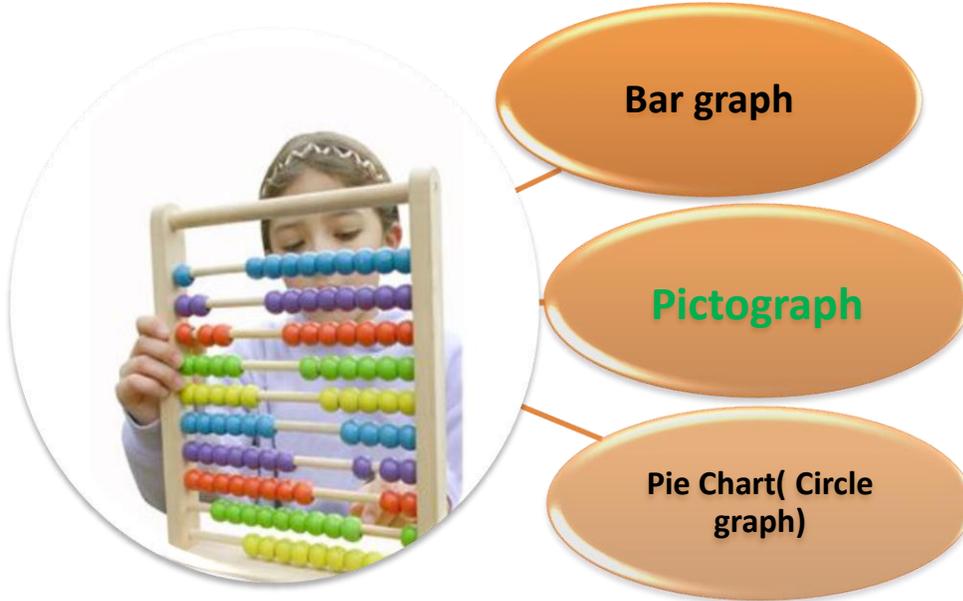
Q2- How many less Yellow eyed penguins are left than The Hawksbill Turtle.

Sahil : Dhs 150, Manju: Dhs 100, Neelu : Dhs200, Sumita : Dhs300

SDG 14 – Life below water

DATA HANDLING

GRADE 4



<p>Bar graph:</p> <ul style="list-style-type: none">➤ Interpret the bar graph➤ Represent the data in bargraph	<p>Pie Chart:</p> <ul style="list-style-type: none">➤ Analyse and interpret data in a Pie chart➤ Represent the data in the form of pie chart and interpret it.

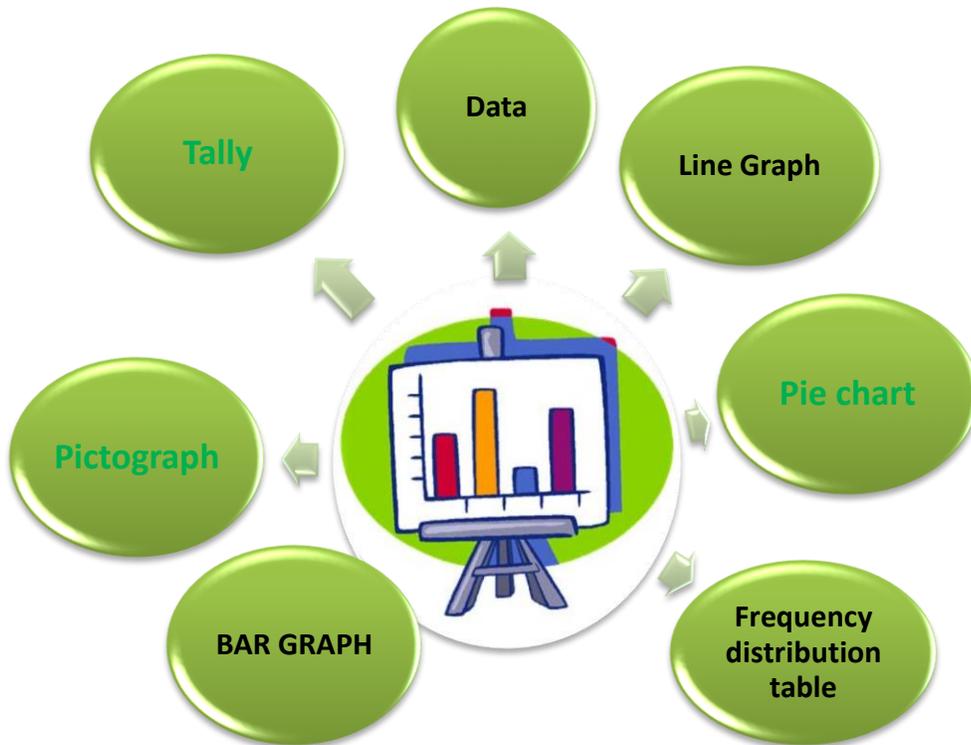
Cross Curricular link/Real life/National Agenda/Digital

Math linked to Science – Interpret a pie chart/bar graph/ pictograph of the animals living in different environmental conditions

A survey to find the 3/5 most spoken languages in grade 4 and the number of people speaking them. Represent them on a bar graph.

Data Handling

GRADE 5



Data Handling

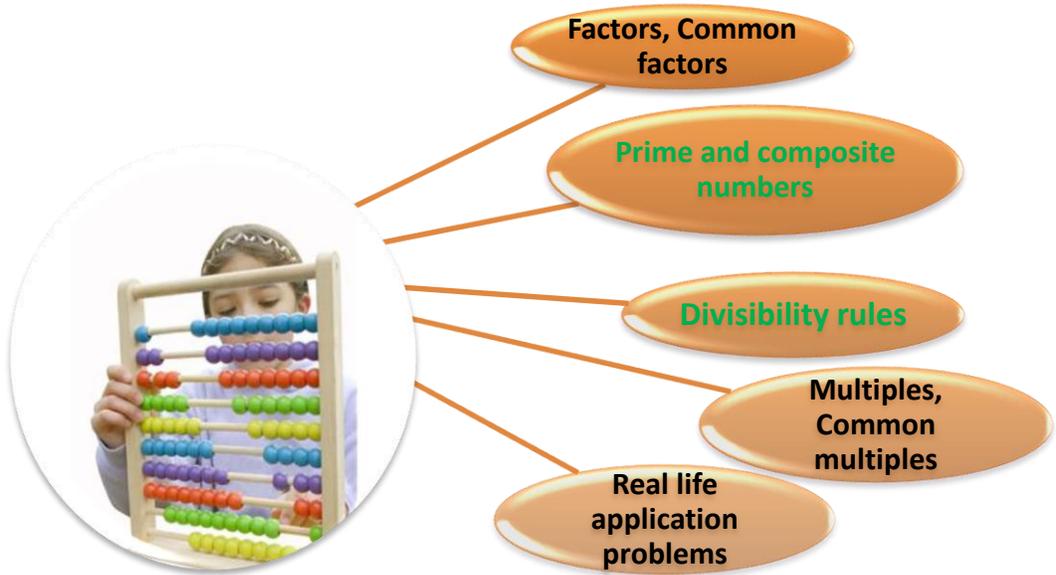
- Construct a frequency distribution table using tally marks.
- Read and interpret line graph.
- Read and interpret bar graph.
- Construct pie chart.

Cross Curricular link:

Math linked to SST – Pie chart representing Geographical features will be given. Students will interpret the data and answer the given questions.

Factors and Multiples

GRADE 4



<p>Factors, Common Factors</p> <ul style="list-style-type: none"> ➤ Prime and composite numbers ➤ States the factors of the given number ➤ Draw the factor tree ➤ Find the common factors ➤ Demonstrate the rules of divisibility by 2,3,5 and 10 with examples 	<p>Factors, Common Factors</p> <ul style="list-style-type: none"> ➤ States the Multiples of the given number ➤ Find the common multiples
<ul style="list-style-type: none"> ➤ Solve the real life application problems in the concept factors and multiples 	

Cross Curricular link/Real life/National Agenda/Digital

Math linked to English:

- There are 48 banyan trees in a row in the forest. Mowgli jumps every second tree and Baghira jumps on every third tree. On which trees do they both meet?

SDG-7 Affordable and Clean Energy

Factors and Multiples

GRADE 5



Rules of divisibility

Least Common Multiple

Highest Common Factor

Rules of Divisibility:

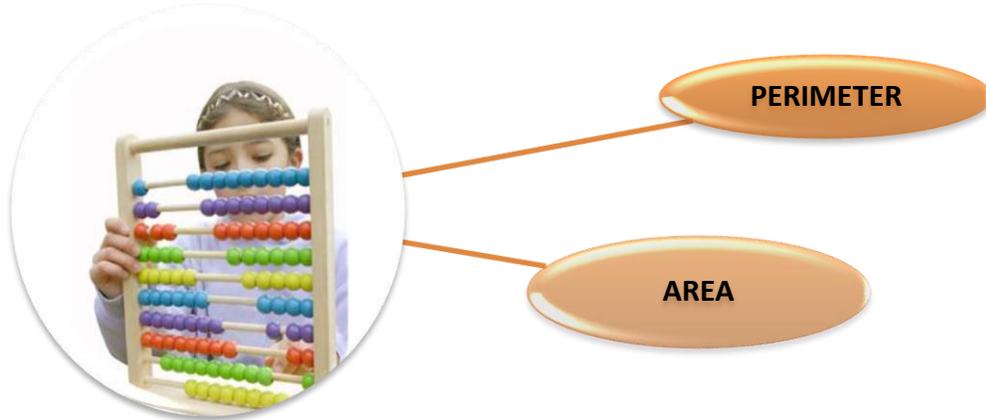
- Determine the divisibility of numbers by 4, 6 and 9.
- Find prime factorization by division method.

LCM and HCF

- Determine the H.C.F and L.C.M using common division method.

Geometry

Grade 4:



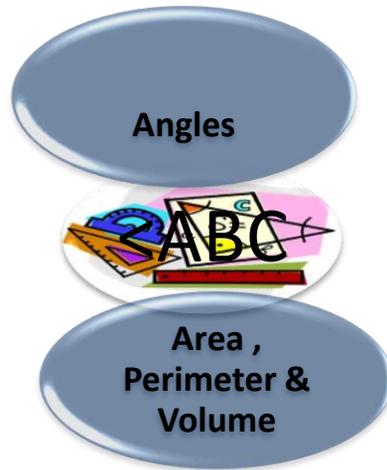
➤ Define Perimeter, Area	➤ Calculate the Area of the given figure in square units using square paper.
➤ Calculate the Perimeter of any figure with the given sides using sum of all the sides	➤ Calculate the missing length of the given figure(Rectangle / Square)

Cross Curricular link/Real life/National Agenda/Digital

Math linked to Science- The ECO club of OOS wanted to plant neem saplings outside the garden. The garden was 10m long and 4m wide. If they plant a neem every 2 m, how many neem plants were planted outside the garden?

Geometry

GRADE 5



Angles:

- Name line, line segment, ray and angles.
- Differentiate line, line segment, ray and angles.
- Differentiate right angle, straight angle, acute angle and obtuse angle.
- Construct angles using protractor.
- Measure the angles using protractor.

Area, Perimeter & Volume:

- Calculate the Perimeter of Square and Rectangle.
- Calculate the Area of Square and Rectangle.

Cross curricular link:

Math linked to Science-What type of angle is formed between an object and its shadow?

DECIMALS

GRADE 5

Decimals:

- Differentiate between the place and place value of the digits of a decimal number.
- Convert decimals to fractions and vice versa.
- Compare decimal numbers.
- Rearrange the decimal numbers in ascending and descending order.
- Add and subtract decimals.
- Multiply and divide decimals by 10, 100, 1000.