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**Science**

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PREFACE

Government of Khyber Pakhtunkhwa is in the process of implementing education reforms, aimed at ensuring access to quality education for maximum number of school age children in the province. These reforms have positive impact on all aspects of the system including curriculum, textbooks, instruction, and assessments. Government of Khyber Pakhtunkhwa recognizes that the success of its reforms hinges on regular and accurate assessment of the learning achievements of children at various levels of schooling. In this connection, different initiatives have been taken place from early grade to higher secondary school level in order to assess students’ learning and suggest remedial activities to improve their learning.

Directorate of Curriculum and Teacher Education (DCTE) and Boards of Intermediate and Secondary Education (BISEs) are responsible for assessment and examination within the province respectively. Since 2016, these organizations have been engaged in the following two types of assessments:

- Grade 2 - Sample based assessment by Assessment and Evaluation Wing of DCTE
- Grade 5 – Universal assessment by Bords of Intermediate and Secondary Education

On behalf of DCTE, I congratulate Mr. Muhammad Shafique – Additional Director Assessment and Evaluation and his team who worked day and night with Khyber Pakhtunkhwa Education Support Programme (KESP) assessments’ advisory team in designing, orienting, conducting and analysing grade 2 assessments results. I am also thankful to Boards of Intermediate and Secondary Education, KP for the conduct of grade 5 assessments and reporting its results with analysis.

DCTE team analysed and shared the findings of assessments at provincial level with all relevant stakeholders to make them aware about students’ achievement and identify ways that can improve teaching and learning process and assessment systems. To address the weak area of the content and pedagogy as reflected in the analyses of the assessments, a compendium was also compiled. This compendium was developed in 2016 and updated in 2017. The compendium consists of the common errors made by students during assessments and tips for teachers that can be helpful in improving students learning process. The compendium is the result of the collective efforts of the KESP project technical team and DCTE staff that put together their intellectual capacities and made valuable contribution in writing tips and mobile text messages for teachers.

We would also like to acknowledge the technical support provided by Adam Smith International through its KESP project officials; namely, Dr Irfan Muzaffar – Technical Director, Mr. Bilal Ahmad - Team Lead Teaching and Learning, Ms.Saima Khalid - Assessment Advisor and Mr. Kamran Iftikhar Lone – Deputy Team Lead Teaching and Learning. I believe this compendium will help teachers improve their practices, resulting in improved quality education, the ultimate goal of Elementry and Secondary Education Department, Khyber Pakhtunkhwa.

Gohar Ali Khan
Director
Curriculum and Teacher Education
Khyber Pakhtunkhwa at Abbottabad
INTRODUCTION

The purpose of this compendium is to assist you in teaching better. As you know well, your students find some concepts difficult and others easy. You also know from your classroom experience that the only way to find what students find difficult is by assessing their learning. In your classroom you assess their learning by asking them questions. When you notice that some students have not developed a good understanding of the topic, you make an extra effort with those students. You also give your students periodic tests (we also call such tests assessments). These tests inform your students about their performance and give you information about the areas where they are experiencing difficulties.

The compendium in your hands will provide you information about the mistakes made by the students. It will also give you some tips to help your students overcome their learning difficulties. You will also be getting text messages on your mobile devices containing tips for you to use in your classroom in different school subjects. Please note that DCTE will publish an updated version of this compendium every year after the scheduled assessments of class 2 and 5.
**ABOUT COMPENDIUM 2017**

It is based entirely on the results of class 2 and 5 assessments, held in 2016 and 2017. Each item on the assessment corresponds to a Student Learning Outcome (SLO) from the National Curriculum 2006, also given in the textbooks. The analysed data of assessment results identified common errors made by students in different subjects.

To help you learn about common errors and improve your teaching, some tips have been shared with you in this document. This compendium refers to two main documents:

1. National Curriculum 2006
2. Khyber Pakhtunhwa Textbooks 2017-18

Following subjects are included in the document:

<table>
<thead>
<tr>
<th>S.No</th>
<th>Subjects</th>
<th>Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Math</td>
<td>2 and 5</td>
</tr>
<tr>
<td>2.</td>
<td>English</td>
<td>2 and 5</td>
</tr>
<tr>
<td>3</td>
<td>Urdu</td>
<td>2 and 5</td>
</tr>
<tr>
<td>4</td>
<td>Science</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Social Studies</td>
<td>5</td>
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</tbody>
</table>

The compendium will provide references to the location of the SLO under consideration in both the curriculum and the textbook.

The assessment findings are given to help you understand the type of question asked in the assessment and percentage of students responded correctly.

Based on the findings, some tips are also suggested that can help you in improving students learning in the classroom. You can adapt the given tips according to your context, classroom environment and students’ abilities.

Some of these tips will also be shared through mobile messages, which will give you a quick access to these teaching tips.

You can share any feedback that can improve this document to Additional Director Assessment and Evaluation, DCTE through 0992-382634 & 384278 or email at dte-kpk@hotmail.com.
Mathematics
Class 2
MATHEMATICS

CLASS 2

CONCEPT 1: ADDITION

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Addition of two-digit and three-digit numbers with carrying (p.14) Solve real life problems, involving addition of: two-digit numbers with carrying, and three-digit numbers with and without carrying (p.14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 42 - 52; 57, 62</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Two-digit addition without carrying: 81% answered correctly  
• Two-digit or three-digit addition with carrying: Only 44% on average answered correctly.  
• Performance on addition in the tens and hundreds place, where carrying is required, was poorer (43% answered correctly) than addition in the units place (58% answered correctly)  
• Only 43% used the correct operation and 55% were able to calculate the correct answer in word problems |

Tips for the teachers

1. Before beginning any new concept, conduct Mental Math (oral questions) activity daily. Small sums like 2+3, 5+7, 9+8 can be asked to help them add bigger numbers later on.

2. Use easily available materials such as money, bottle caps, leaves, pebbles etc. when teaching the concept of addition or subtraction. Note: these should be used more in teaching the concept and not for practice to develop mastery in addition and subtraction.

3. To improve the vocabulary related to addition write add, altogether, many, more, how many on card sheet strips and place around the blackboard and reinforce daily with examples.

4. Take a square paper and cut many squares and call them one Unit.
4.1 Now cut strips of 10 squares and call it as 1 ten.

4.2 Now demonstrate the process of addition with the help of these Tens and Units.

4.3 For adding 23+35, take 2 tens and 3 units for 23 and 3 tens and 5 Units for 35. Now ask the students; how many tens and units are there in all. Let the students count and inform 5 tens and 8 units.

4.4 Now give example of 23 and 38. Explain them that when you add 23 and 38, then you have to regroup the units. You should let students decide how many tens and how many units are there in all. As the units are coming more than 10 i.e.11 so one new Ten will be added to Tens family and one unit will be left.

4.5 When we manually add Units on finger tips 8+3=11, Here you would tell students that 11 is a two-digit number so cannot come under Unit place so 1 unit will come at Unit Place and the other, which is 1 ten, will become carry and will be added with tens. It is written as small 1 on the top of ten’s digit.
Please refer to the example below.

\[
\begin{array}{cc}
2 & 3 \\
+3 & 8 \\
50 & + \\
11 & = 61 \\
\end{array}
\]

4.6 Have the students repeat the entire process with different examples.
**CONCEPT 2: SUBTRACTION**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Subtraction of two-digit and three-digit numbers with borrowing (p.15) Solve real life problems of subtraction involving subtraction of: two-digit numbers with borrowing, and three-digit numbers with and without borrowing (p. 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 63 – 69</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Two-digit subtraction without borrowing: 64% answered correctly  
• Two-digit or three-digit subtraction with borrowing: Only 29% on average answered correctly.  
• Performance on subtraction in the tens and hundreds place, where borrowing is required, was poorer (29% answered correctly) than subtraction in the units place (34% answered correctly)  
• When asked to solve a word problem using subtractions: Only 37% used the correct operation and 44% were able to calculate the correct answer |

**Tips for the teachers**

1. Place flash cards of vocabulary for subtraction like subtract, left, less, how many, operation sign etc around the black board.
2. Use real objects available in school to teach subtraction. Start with students’ belongings, how many pencils are in your pencil box? If you give 2 to your friend, how many pencils will be left with you? How many chairs are missing in the class?
3. Use square paper: squares as units and strip of ten squares as tens.
   3.1 For subtraction of 45-32, you need four strips of tens and five unit squares.
   3.2 First subtract units i.e. take away 2 Units from 5 Units; 3 units are left and will be written in unit’s place.
   3.3 Now from 4 tens; take away 3 tens; and one ten will be left. The answer will be 1 ten and 3 units.
   3.4 Do the same example numerically as shown above.
   3.5 Now subtract 27 from 45. Take same 4 strips of tens and 5 squares for units. Ask the students how they would subtract 7 units from 5 units.
   3.6 Let the student think and give you different options. Listen to their responses carefully. Explain them that since we need to subtract 7 units which is more than 5, therefore, we will borrow one ten and convert it into units.
3.7 Now we have 15 units and 3 tens. Take away 7 units from 15 units; 8 units will be left.

3.8 Now we will subtract 2 tens from 3 tens; 1 ten will be left. Hence the answer is 18.

4. To solve 53 – 17, do the following steps:
   a. Subtract units first;
   b. Borrow 1 ten from tens if needed and convert it into units. Since 3 is smaller than 7, so borrow 1 ten (10 units) so units will become 13 and tens will become 4.
   c. Subtract units from units and tens from tens i.e. 7 from 13 units and 1 from 4 tens. The difference is 36.

5. Word problems are generally difficult for your students. Understanding a word problem is the first step in solving it. Help your students understand the word problems in detail.

6. Practice problem solving daily by simply asking more questions. For example: How many students are enrolled? How many are absent? So how many are present? We had 10 marbles, but now we only have 3. How many did we take away? How many birds in this picture?
CONCEPT 3: MULTIPLICATION

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Multiply numbers within multiplication table (p. 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 71 – 82</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Multiplication of one-digit numbers: 54% answered correctly.</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Use repeated addition with real objects to introduce the concept of multiplication, for example:
   - Ask: how many shoes are in there in a pair? (2)
   - Ask: how many shoes are there in five pair of shoes?
     Then have one of the students come up on the board and write 2+2+2+2+2= 10
   - Ask other students: Is this correct? If yes, why?
   - Tell them that this could also be written as 2 times 5 = 10, gradually replace *times* with the sign for multiplication.
   - Repeat similar examples to reinforce the concept of multiplication as repeated addition

2. To help students solve multiplication problems, make them learn the multiplication tables by heart. Please remember that the multiplication tables should not be committed to memory before clarifying the concepts.
**CONCEPT 4: DIVISION**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Divide numbers within multiplication table with remainder zero (p. 16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 86 – 88</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Division of one-digit numbers: 48% answered correctly.</td>
</tr>
</tbody>
</table>

**Tips for teachers**

1. For teaching the concept of division, explain the students that division means ‘sharing equally’, practice by sharing pencils/papers/sweets equally among students.

2. Help students understand that division is repeated subtraction i.e. how many times we can subtract a number from another larger number. For example, how many times can you take away 4 from 20? (see the illustration below)

   ![Division Illustration](image)

   Four was subtracted five times. So, $20 + 4 = 5$.

3. To reinforce division, make students practice the concept of repeated subtraction and introduce division sign. For example, How many sets of 3 can we subtract from 12 to get 0 or $12 \div 3 = 4$. 
**CONCEPT 5: FRACTIONS:**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Recognize proper fractions and represent in numerical form (p. 14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 31 – 39</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>• Identification of fractional number that matches the shaded &lt;br&gt;• Portion:52% answered correctly.</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. To help students understand fractions, show them a paper, fold it and cut into halves. Show them the half of it and introduce the term half.

2. Show an apple to your students. Tell them you have only one apple; ask them how much of it you should eat today, half (one of two equal parts) or fourth (one of four equal parts).
   - Now ask them how you should divide it in half (cut in the middle).
   - Then ask them how to divide it in four equal parts.
   - After this ask them to draw a circle and divide it in half now by drawing a line. Now divide it in four equal parts by drawing another line.
   - Reinforce the idea that:
     - Each half is one out of two equal parts. Write it as \( \frac{1}{2} \)
     - Each fourth is one out of three equal parts. Write it as \( \frac{1}{4} \)
   - Introduce and practice other simple fractions.

3. Reinforce the concept of half. Draw circle/square/triangle on board, colour half of each shape and say that this is \( \frac{1}{2} \) (half).

4. Inform the students that fraction is written as 2 numbers, separated by a line segment. The number written below the line segment shows total number of equal parts and called denominator. The number written above the line segment represents parts taken and called numerator.

5. Repeat the terms numerator and denominator to make students learn.
**CONCEPT 6: GEOMETRY:**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Identify the figures like square, rectangle, triangle, circle, semi-circle and quarter-circle (p. 17)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does the assessment data tell us?</td>
<td>Identification of shape: 57% answered correctly.</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Recall basic shapes learnt in earlier classes. Provide cut outs of different shapes in groups and ask students to identify shapes on the basis of sides, corners and shape. Ask them to group similar shapes and paste them on a chart paper.
   - A triangle has 3 corners and three sides.
   - A square and rectangle have four corners and four sides.
   - A circle has no corners.

2. Always relate Math with the real life situation. Ask students to identify things in the classroom or at home which have different shapes like rectangle, triangle and square.
CONCEPT 7: TIME

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Read and write the time from a clock in hours and minutes (with 5 minutes interval) e.g; 8:15 as eight fifteen and 8:50 as eight fifty. Page # 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 101 - 106</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Identification of half past: 51% answered correctly.</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Ask the students to identify the two arms of the clock (big and small).
2. Tell them the functions of big and small arm of the clock.
   Big arm is used for hour and small is used for minutes.
3. Recall the table of 5.
4. Practice reading the clock with different time by using the table of 5.
5. Draw the format of writing time on the board and make them practice.

---

Hour 8:15 Minute
Left Hand  Right Hand
**CONCEPT 8: MEASUREMENT (LENGTH, WEIGHT, CAPACITY)**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Solve real life problem involving measurement (length, weight, capacity). Page No. 16-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does the assessment data tell us?</td>
<td>Identification of scale for length correctly attempted by 67% of students, 63% students attempted weight correctly and only 37% students correctly attempted capacity.</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Recall the units for the following measurement with the students:
   a. For length we used meter, centimetre
   b. For weight we used kilogram, gram
   c. For capacity we used litre, millilitre
2. Give different things. e.g: Book, copy, pencil, sharpener and ask the students to measure its length by using ruler or measuring tape. Note different readings. Help during the measurement, if required.
3. Bring two bags (one light and other heavy) infront of class and ask the students which bag has more weight. Let the students lift the bags and compare their weights to identify heavy and light. Repeat the same with other objects.
4. Show different objects e.g; jug, cup, glass and then ask them to compare which has more capacity. Take different opinions from the class. Now fill one of the containers with water/sand/rice and compare the capacity of other containers. Repeat it with different containers to clear the concept.
Mathematics
Class 5
Compendium

CLASS 5

CONCEPT 1: ORDER OF OPERATIONS

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Carryout combined operations using BODMAS rule (p.32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 21 – 24, 56 - 57</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Solving an equation using order of operations only 29% answered correctly  
• Identify the order of operations: 43% answered correctly |

**Tips for the teachers**

1. For simplification, begin with two operations only \((3 \times 4 + 5)\).

2. Let the students solve the given sum themselves independently. Some may multiply first then add the number whereas some may add first then multiply. In both cases, the answer will be different.

3. Inform the students that in order to bring uniformity in the process, we perform operation in a specific direction.

4. Introduce the method to solve problems with multiple operations; DMAS i.e. Divide, Multiply, Addition and Subtraction.

5. Application of DMAS requires practice. Give your students more practice.

6. Introduce brackets and inform the students that when brackets are given, then they will be solved first. Use BODMAS to help them learn the method.
CONCEPT 2:  WORD PROBLEMS/ UNITARY METHOD

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Calculate the value of a number of same type of objects when the value of another of the same type is given (unitary method) (p. 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 111 – 120</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Calculating the price of a set of items using unitary method: 48% answered correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. To introduce the concept of unitary method, help students use real life examples to calculate unit cost of different objects verbally like 5 pencils cost 60, what is the cost of 1 pencil?

2. In Unitary method finding cost of many is always solved by multiplication and cost of one is always calculated by division. If question says cost of 6 books is 450 what is the cost of 20 books? Here students will first find the cost of one book by division 450/6=75. For cost of 20 books, students will multiply 75×20=1500.

3. Ask students to create word problem of their own and ask each other to solve.
## CONCEPT 3: PRIME AND COMPOSITE NUMBERS

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Define and differentiate between prime and composite numbers (p. 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. n/a</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Characteristics of prime and composite numbers: 27% answered correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Introduce prime numbers to the students as the numbers that are divisible by the same number only and composite numbers as the numbers that can be divided by other numbers also.

2. Recall divisibility rules of 2, 3, 4, 5, 6, 8, 10, 11 and 12 and ask students to use the rule and identify prime and composite numbers.

3. Reinforce the concept of prime and composite numbers, ask students to write numbers 1-100 in square line paper; circle the prime numbers and shade the composite numbers. Ask them to justify the prime numbers circled by them.

4. Pick a number like 81 and ask why this number is not a prime number. Let the students recall times tables to give justification for various numbers.
CONCEPT 4: HIGHEST COMMON FACTOR (HCF) AND LEAST COMMON MULTIPLE (LCM)

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Find HCF of three numbers, up to 2 digits, using prime factorization and division methods; Find LCM of four numbers, up to 2 digits, using prime factorization and division methods (pp. 32-33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 25 – 38</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Identification of LCM of given numbers: 56% answered correctly  
• Identification of HCF of given numbers: 29% answered correctly |

Tips for the teachers

1. Introduce the concept of factor and multiple by explaining that multiple is the product of two numbers and factor is a divisor, hence 6 is the multiple of 2 and 3 whereas 2 and 3 are factors of 6.

2. To reinforce the concept of factors and multiples, provide different numbers and ask the students to find their factors and multiples.

3. Write any two numbers on the board, ask students to find multiples of both numbers. Circle common multiples and introduce LCM by identifying Least Common Multiple of both the numbers.

4. Write any two numbers on the board, ask students to find factors of both numbers, circle common factors and introduce HCF by identifying Highest Common Factor of both the numbers.

5. Write vocabulary related to HCF and LCM on flash cards and place them around the blackboard to reinforce the concept such as multiple, least common multiple, factors and highest common factors.
**CONCEPT 5: EQUIVALENT FRACTIONS AND SIMPLIFICATION OF FRACTIONS**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Compare two unlike fractions by converting them to equivalent fractions with the same denominator; Simplify fractions to their lowest form (p. 25-26)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 40 – 45</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Finding fractions in simplest form: 45% answered correctly  
• Making equivalent fractions: 34% answered correctly |

**Tips for the teachers**

1. Concept of 1 whole is to be given thoroughly. 1 whole is equal to 2 halves, 3 thirds, 4 quarters and so on.

<table>
<thead>
<tr>
<th>1 whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
</tr>
<tr>
<td>1/3</td>
</tr>
<tr>
<td>1/4</td>
</tr>
</tbody>
</table>

2. Students should know that a person eating 4 quarters of a ‘Naan’ and 1 ‘Naan’ is eating the same quantity.

3. Students can convert simple fraction to equivalent just by multiplying the numerator and denominator with same number. Equivalent fraction of \( \frac{2}{3} \times 4 = \frac{8}{12} \).

4. Fraction can be simplified if you divide the numerator and denominator with the same factor. \( \frac{24}{36} \div 12 = \frac{2}{3} \). Practice makes students perfect. Encourage students to take the HCF of the given fraction to divide and simplify.

5. Vocabulary related to fractions should be placed around the board.
CONCEPT 6: TYPES OF FRACTIONS

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Identify unit, proper, improper and mixed fractions; Convert improper fraction to mixed fraction and vice-versa (p. 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 40–50</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Recognition of improper fraction: 45% answered correctly  
• Drawing fractions (proper, mixed and improper): 24% answered correctly |

**Tips for the teachers**

1. Before teaching the types of fractions, reinforce the concept of fraction by giving different fractional numbers to students and ask them to represent them by drawing pictures.

2. Explain the three types of fractions; proper fraction (with greater denominator), improper fraction (with greater numerator) and mixed fraction (with whole number and proper fraction).

3. Emphasize that the numerator in proper fractions is less than the denominator such as ¼, 3/8, and 4/5. Use papers to make different proper fractions or show pictorially.

4. To represent improper fraction graphically in which numerator is greater than a denominator e.g. 5/4, make 2 wholes with 4 quarters each. Take 4 quarters from one whole and 5th quarter from other whole.

5. To represent mixed fractions graphically (2 ¼), ask students to draw 2 whole number first and then the given proper fraction ¼. The total parts remain same as given in the denominator of proper fraction.
**CONCEPT 7: ADDITION AND SUBTRACTION OF FRACTION**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Add and subtract two and more fractions with different denominators (p.33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 40 – 46</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Addition of fractions: 46% answered correctly  
  • Subtraction of fractions: 51% answered correctly |

**Tips for the teachers**

1. Always teach addition of fractions with same denominators through material or pictures.

2. To add 1/5 and 2/5, make 2 fractions on 2 different papers and place them together, let the students count how many fifths are there altogether? (3 fifths) Explain them 1/5 + 2/5 = 3/5.

3. For teaching addition of mixed fraction, add whole numbers first and then proper fraction. For 2 ¼ + 1 ½, add whole numbers 2 + 1 = 3; then proper fraction ¼ + ¼ = 2/4. Add them together 3 2/4 or 3 ½.

4. To teach addition of fraction with different denominators, use equivalent fraction to make denominator same. Here \( \frac{1}{3} + \frac{3}{4} \) will become

\[
\frac{1 \times 4}{3 \times 4} + \frac{3 \times 3}{4 \times 3} = \frac{4}{12} + \frac{9}{12} = \frac{4+9}{12} = \frac{13}{12}
\]

5. Repeat the following steps:
   - Find the denominator of the fraction.
   - Find the least common multiple (LCM) of the denominator.
   - Make the numerator of the fraction match their new denominators.
   - Write the new numerator over the lowest common denominator.
   - Add the numerator.
   - Simplify your answer.

6. For mixed fraction with different denominators, add whole numbers and proper fractions separately. For \( \frac{2}{3} + 3 \frac{1}{5} \), add wholes 2+3=5 then proper fractions using...
Compendium

\[
equivalent\ fraction: \quad \frac{2\times 5}{3\times 5} + \frac{1\times 3}{5\times 3} = \frac{10 + 3}{15} = \frac{13}{15}\ \text{then add whole numbers to it, so it will be} \quad 5\frac{13}{15}.
\]

7. For adding/subtracting mixed fractions, follow the steps given below:
   a) Convert to improper fraction.
   b) Take LCM.
   c) Make equivalent fractions.
   d) Solve numerators.
   e) Write as simplified form.

8. To add mixed fractions, follow the steps given below:
   a) Add whole numbers
   b) Make equivalent fractions of proper fraction.
   c) Solve numerators.
   d) Make its simplified form
   e) Add whole numbers with fractions.
CONCEPT 8: MULTIPLICATION AND DIVISION OF FRACTION

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Multiply a fraction by another fraction; Divide a fraction by a number; Divide a fraction by another fraction (proper, improper and mixed) (p. 33)</th>
</tr>
</thead>
</table>
| What does the assessment data tell us? | • Multiplication of fractions: 25% answered correctly  
• Division in fractions: 41% answered correctly |

Tips for the teachers

1. Explain multiplication of fraction by using the term “of”. Ask students to show you half of half ($\frac{1}{2}$ of $\frac{1}{2}$) of a paper. This is one quarter. Replace word “of” with sign of multiplication, $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

2. For teaching multiplication of fraction, tell students to multiply numerator by numerators and denominators with denominators. The last fraction should always be in simplified form.

3. To teach division of fraction, first introduce pictorial representation with the concept of how many. After this introduce conventional method of using reciprocal and multiplication.

4. To teach division of fraction, help students to understand the concept of how many. Use example of how many halves are there in a whole? (2) How many quarters are there in 2 wholes? (8). So $1 \div \frac{1}{2} = 2$ and $2 \div \frac{1}{4} = 8$

5. Explain that in conventional method of division in fraction, we use reciprocal of the fraction after the division sign and change division into multiplication. The sum $2 \div \frac{1}{4}$, will be solved as $2 \times \frac{4}{1} = 8$.

6. To simplify a given fraction, fractions, explain that numerators and denominators can be divided by same number both vertically and diagonally. And to multiply, we use either numerators or denominators.
CONCEPT 9: DECIMAL FRACTIONS

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Add and subtract decimals (p. 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 61–69</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td></td>
</tr>
</tbody>
</table>
• Conversion of fraction to decimal: 42% answered correctly  
• Adding decimal fractions: 30% answered correctly  
• Subtracting decimal fractions: 45% answered correctly |

Tips for the teachers

1. For teaching the concept of decimals, introduce decimal place values to the students i.e. ones, tenth, hundredths, thousandth.

2. To reinforce the concept of place value in decimal, tell students place value of a number in a jumbled form and ask them to make a decimal number. Example: 4 units, 0 hundredth, 5 tenth and 1 thousandth is 4.501.

3. Explain students that in addition or subtraction of decimal numbers, alignment of writing numbers under the fixed place value positions is essential.
CONCEPT 10: MULTIPLICATION OF DECIMALS

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Multiply a decimal by a decimal (p. 34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 71</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Finding product of two numbers with decimals: 29% answered correctly</td>
</tr>
</tbody>
</table>

**Tip for the teachers**

1. While teaching multiplication of decimals, inform students that we first multiply the digits by using tables, then count the decimal places in the question and place the decimal accordingly.

2. Line up the numbers on the right, do not align the decimal point,

**Example: 0.2 × 1.04**

Consider both numbers as whole numbers so it will be 2x104=208

Now count total number of decimal (0.2 × 1.04, three places)

From right hand side, count 3 places and insert decimal. The final answer will be 0.208

Now give them the following and ask them to multiply using the same method.

   a. 0.4 × 0.8
   b. 0.7 × 1.1
   c. 0.02 × 0.9
   d. 0.02 × 0.05
   e. 0.002 × 9
   f. 1.1 × 0.3
   g. 2.1 × 0.2 × 0.05
   h. 0.4 × 4 × 0.2
   i. 6 × 0.06 × 0.02
CONCEPT 1: TYPES OF ANGLES

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Recall an angle and recognize acute, right, obtuse, straight and reflex angle; (p. 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 124 – 126</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Identification of acute and obtuse angles: 33% answered correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Before teaching types of angles, explain that an angle is formed when two lines share a common point.

2. For teaching angles, cut 2 strips of papers, join them at one point with thumb pin to place it on a table. Move one arm to show acute angle, right angle, obtuse angle.

3. The vocabulary for ‘types of angles’ can be retained by placing the important terms around the board.

4. To help students understand angles, ask them to find angle around the school or home. (For example, angles between the fan’s blades, angles in the door frame.)

5. Explain the concept of angles to the students by telling them that angle means “turn”. Show students examples of angles in the real life objects, such as the right angles in the corner of the rooms and on the blackboard.
**CONCEPT 12: PERIMETER AND AREA**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Differentiate between perimeter and area of a region; Identify the units for measurement of perimeter and area; Solve appropriate problems of perimeter and area (p. 37)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 151 – 159</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Calculate area/perimeter: 28% answered correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Explain the concept of ‘Area’ as the covered surface and ‘Perimeter’ as the boundary.
2. Draw any shape on the board, divide it into small equal size squares and ask students to count the squares that have covered the surface area. Let the students count and tell you the number of squares.
3. Explain that each square is of 1 centimetre in length and we measure area in square centimetre.
4. Provide square line papers or use students’ square line copies; ask the students to draw any shape on the paper and then count the number of squares in it. They can also trace their hand span and count the area.
5. Draw a rectangle with a length of 6 cm and breadth 2 cm. Ask students to estimate its area. Note their responses. Now draw the squares (1 cm each) in the rectangle by using ruler. There will be 12 square centimetre. Appreciate the students with closer estimation.
6. Now measure the length and breadth of the rectangle in front of the students, which is 6 cm and 2 cm. Explain to the students that area of a rectangle can also be measured by multiplying length and breadth. The unit of area is square centimetre, but it can also be measured in metre, feet or yards.
7. Provide them different measurement (length and breadth) to calculate area.
8. Teach students that for perimeter, we need to add the length of all sides (boundary) of a shape. Take the example of rectangle with length of 6 cm and breadth of 2 cm; add all the lengths i.e. \(6 + 2 + 6 + 2 = 16\) cm. The unit of perimeter is centimetre.
9. This is also equal to \(6 + 6 + 2 + 2\) or \(2\) length + \(2\) breadth or \(2\) (length + breadth).
10. Provide them different measurement (length and breadth) to calculate perimeter.
11. To reinforce the concept, encourage students to find area and perimeter in their surrounding like perimeter of tables or area covered by the cover page of their math book.
CONCEPT 13: HCF

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Find HCF of three numbers, up to 2 digits, using + prime factorization method, + division method (Pg# 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does the assessment data tell us?</td>
<td>Finding HCF of 3 numbers by division method: 23% answered correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Review times tables and concept of prime and composite numbers given as Concept 3 on page number 22.

2. Recall concept of factors and multiples given in concept 4 (HCF and LCM) on page 23.

3. Introduce methods of finding HCF as given below:

   **Method 1.**
   1. Ask students to find all factors of following numbers:
   2. 18 and 12
   3. Factors of 12= 1,2,3,4,6,12
   4. Factors of 18= 1,2,3,6,9,18
   5. Make loops to find common factors:
   6. Common factors: 1,2,3,6
   7. Now find highest common factor:
      
      HCF=6

   **Method 2:**
   Factorize 12 and 18 together using prime factorization till the common factors are available.

   HCF = 2x3=6

<table>
<thead>
<tr>
<th></th>
<th>12,18</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>6, 9</td>
</tr>
<tr>
<td></td>
<td>2, 3</td>
</tr>
</tbody>
</table>
Method 3

1. Write following 2-digit numbers on writing board:
   6, 12, 20

2. Find the greatest number.
   (20)

3. Divide the greatest number by the smallest one.
   6 ) 20 (3
   \[ \underline{18} \]
   2) 12 (6
   \[ \underline{12} \]
   0

4. Then divide the third number with the remainder of first division, till you get zero as remainder.
   6 ) 20 (3
   \[ \underline{18} \]
   2) 12 (6
   \[ \underline{12} \]
   0

The highest common factor is 2.
**CONCEPT 14: PERIMETER AND AREA**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Identify the units for measurement of perimeter and area (Pg# 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 151-159</td>
</tr>
<tr>
<td>What does the</td>
<td>Identification of perimeter and square: 26% answered correctly</td>
</tr>
<tr>
<td>assessment data tell</td>
<td></td>
</tr>
<tr>
<td>us?</td>
<td></td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Recall student prior knowledge about unit of length.
2. Recall concept of area and perimeter given in Concept 12, page number 32.
3. Explain that perimeter is one dimensional and is measured in linear units such as centimetre, feet or meter. Area is two dimensional it has a length and a width. Area is measured in square units like square feet or square meter.

**Example:**

i. If Length is in Meter ➔ then perimeter is in meter.

ii. If Length is in Centimetre ➔ then perimeter is in centimetre.

iii. If Length is in Centimetre ➔ then area is in square centimetre.

iv. If Length is in Meter ➔ then area is in square meter

4. Practice on different value to find its unit in perimeter and area

   i. 4m, 6m

   ii. 10cm, 14cm

   iii. 2mm, 4mm

5. To improve the vocabulary related to perimeter and area, the teachers should ask the students to repeat their unit in full whenever they are measured.
### Compendium

**CONCEPT 15: BODMAS**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Recognize BODMAS rule, using only parentheses ( ) (Pg#. 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 22 - 23</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>BODMAS rule: 32% answered correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Write the abbreviation of BODMAS on the side of board. Explain students to use the same sequence.

2. Recall the BODMAS rule, if an expression contains bracket. \(( , [ , ]\), we haveto first solve or simplify the bracket followed by division, multiplication, addition and subtraction from left to right – wrong order will result in a wrong answer.

3. Give this sum to students to solve. \((6 ÷ 3)×5 - 2\). Now compare students answers. Students who use the correct order will get the correct answer.

\[
2+(6 \div 3) \times 5 - 2
\]

Solve the bracket first:

\[
2 + 2 \times 5 - 2
\]

Recall DMAS; so solve Multiplication first:

\[
2 + 10 - 2
\]

Then Addition

\[
12 - 2
\]

Then subtraction

\[
10
\]

4. Write this table on writing board and assign every student to complete the following task in which they will explain process that How L.H.S = R.H.S.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Explain process L.H.S = R.H.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>( x + (y + z) = x + y + z )</td>
<td></td>
</tr>
<tr>
<td>( x - (y + z) = x - y - z )</td>
<td></td>
</tr>
<tr>
<td>( x(y + z) = xy + xz )</td>
<td></td>
</tr>
</tbody>
</table>
CONCEPT 16: MULTIPLICATION IN FRACTION USING BRACKETS

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Multiply two or more fraction involving brackets (proper, improper, and mixed fractions) (Pg#. 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 47 - 53</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>31% answered correctly the concept</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Recall BODMAS rule

2. Now write the sum and ask what strategy they might use to solve. \[ 2 \left( \frac{5}{2} \times \frac{8}{16} \right) \]

3. Inform that we divide denominators and numerators by same number. Once it cannot be divided further, multiply numerator with numerator and denominator with denominator.

4. Reinforce the concept of order of operation. For solving bracket first, method of simplification will be used. As 2 and 8 have common factor 2 so it will be simplified first.

5. The remaining numerators and denominators will be multiplied together, then multiplied by 2 which is outside the bracket.

6. Solve the given sum step by step: \[ 2 \left( \frac{5}{2} \times \frac{8}{16} \right) \].

7. Multiply the two improper fractions with condition of bracket placement.

\[ \frac{5}{2} \]

- Multiply the answer (5/4) with number given outside the bracket (2)

- Convert your answer to a mixed number.

\[ \frac{5}{2} = 2 \frac{1}{2} \]
**CONCEPT 17: PERCENTAGE**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Convert percentage to fraction and to decimal and vice versaPg#. 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 61 - 72</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>31.9% answered the concept correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Ask students how many decimal places are in 0.75 (2)

2. How can you convert it in percentage (Multiply by 100 i.e. 0.75 x 100=75%) Practice for more sums of similar type.

3. How can you write in fraction 75/100 as simplified fraction (3/4). Practice for more sums of similar type.

4. How can you convert fraction into decimal e.g.2/5 (by dividing =0.4) Practice for more sums of similar type.

5. How can you convert fraction into percentage (x by 100 so 2/5 x 100=40%) Practice for more sums of similar type.

6. Draw the following table on board.

6.1. Solve the missing value in the table

<table>
<thead>
<tr>
<th>Fraction</th>
<th>Decimal</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7</td>
<td></td>
<td>26%</td>
</tr>
<tr>
<td>3/4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.90</td>
<td></td>
<td>65%</td>
</tr>
</tbody>
</table>

6.2. Help the students to complete this task.

6.3. While completing the task teacher should facilitate putting the formula on the writing board.
CONCEPT 18: BAR GRAPH

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Interpret a simple bar graph given in horizontal and vertical form (Pg#. 37).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 168 - 171</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>31% answered correctly the concept of</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Ask students about the name of their favourite fruit.
2. List their names against each fruit as shown in the picture.
3. Plot bar graph and ask the questions that help students interpret the graph such as:
   - How many students like banana?
   - Which fruit is liked by most of the students?
   - How many more students like apple than pear?
4. Reinforce the scale and values on axis.
5. Ask the students to collect data about their favourite dish/colour/game from the class and plot bar graph on square paper.
6. Provide them some bar graphs and ask students to interpret it.
English
Class 2
CONCEPT 1: LETTER RECOGNITION AND ALPHABETICAL ORDER

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 1, benchmark 1, standard IV (p. 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 5 - 6</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Recognition of capital and lower case letters: 72% on average answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Reinforce letter names and sounds through words beginning with those letter and sounds such as A/a/apple, B/b ball. Use flashcards or write the capital and small letters on the blackboard. Point and say A /a/-apple, B /b/-ball.
2. Two letters or more a day can be reinforced depending upon the response of students and pace of curriculum.
3. For helping students recognize letters, make them practice writing the letters on the board, floor, wet or dry sand or paper.
4. Practice sequencing letters in alphabetical order by drilling the sequence using the letters from Aa-Zz written on the board or through the alphabet song ’ABC’.
5. Play letter sequencing games. Make flash cards of all 26 letters, ask students to hold one card each and stand in alphabetical order.
CONCEPT 2: SPELLING/PHONICS

| Curricular reference | Competency 1, benchmark 1, standard I (p. 22)  
|                      | Competency 4, benchmark 1, standard I (pp. 31 - 32) |
| Textbook reference   | Pp. 4-10, 21,36 |
| What do students know well? | Spelling of three, four, five letter words: 64% on average answered incorrectly |

Tips for the teachers

1. Reinforce letter names and sounds through a daily drill using flashcards e.g. say A/a/ arrow, B /b/ bag etc. Two letters or more a day can be reinforced depending upon the response of students and pace of curriculum.

2. To practice identification of sounds in a word, write a three letter word such as Rat and circle the beginning sound i.e. R (rrr). Once students have understood the concept repeat the same for the ending sound i.e. T and then middle sound i.e. A. Students can later be made to practice writing beginning/ending or middle sound in a word.

3. Practice breaking words into sounds (syllables). Instruct students to clap for each syllable e.g. Table:  ta-ble (clap twice).

4. To help students recognize letters in a word, break words into segments showing a finger or a counter for each sound e.g. /b/ /a/ /g/  bag   or /l/ /a/ /p/ lap etc..

5. Practice blending sounds to make words.

6. Assign a word for a day to learn the spelling (both for home and school). The word can be called ‘Word of the day’. Tell the meaning of the word and use it in a sentence for better understanding. After five words take a spell drill.

7. Discover Spelling Patterns
   Tell the children that thinking about what a word looks like is a useful spelling strategy, so you are going to explore some common spelling patterns together. For example, look for and list words with ea, such as: bead, bread, dead, great, read, treat, break.

8. Play spelling games such Sad man – Guessing the word by suggesting 10 letters. Each incorrect letter will be marked by drawing a feature of a Sad man.
**CONCEPT 3: COMPREHENSION**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 1, benchmark 1, standard 2 (p. 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 58, 68, 78, 96</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Answering questions from a given paragraph: 57% answered correctly</td>
</tr>
</tbody>
</table>

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**Tips for the teachers**

1. To improve reading comprehension, ensure that children have phonemic awareness, letter – sound relationship and vocabulary, phonics.
2. Motivate students through activities that may increase their interest (book talks, dramatic readings, or displays of art related to the text), making the text relevant to students in some way.
3. Stimulate students' background knowledge important to the content of the text by discussing what students will read and what they already know about its topic and about the text organization.
4. Introduce new vocabulary related to specific topics by asking students to find out meaning of difficult words and using them in sentences. This will help improve their understanding of the comprehension passage.
5. Let the students read the paragraph and make meaning for themselves.
6. Ask questions that keep students on track and focus their attention on main ideas and important points in the text.
7. Ask students to recall and tell in their own words important parts of the text.
8. Check understanding by paraphrasing or restating important and/or difficult sentences and paragraphs.
9. Offer students opportunities to respond to the reading in various ways, including through discussion, writing or dramatic play.
10. Practice comprehension on weekly basis.
CONCEPT 4: PRONOUNS

Tips for the teachers

1. Explain to the students that ‘Pronouns’ are the words which are used in place of nouns.
   E.g. Irum likes to read books. → She has many books.
   Here, Irum has been replaced by ‘She’ which is a pronoun.

2. WRITE SENTENCES ON THE BLACKBOARD AND READ THEM OUT.
   Irum brings fruits to eat. → She likes apples.
   Akram is fond of cats. → He has many cats.
   EXPLAIN: IRUM IS REPLACED BY “SHE”. AKRAM IS REPLACED BY “HE.” HE AND SHE ARE PRONOUNS WE USE THEM IN PLACE OF NOUNS.

3. Write the sentences on the blackboard and ask students to circle the pronouns.
   Saira reads all the time → She loves reading.
   Now write the following sentences and ask students to fill in the blanks with the correct pronoun:
   Omar has a grey cat. → _____ plays with it every day.
   Repeat such examples for a week.

4. Explain the pronouns in which the students are facing difficulty such as ‘it’.
   Explain: Pencil is replaced by “it.” It is also a pronoun, used in place of things or animals.
   The pencil is very short. → It is blue in colour.

5. Make the students practice the use of pronoun ‘it’. Write sentences on the board and ask students to fill in the preposition ‘it’ replacing a noun.
   The book is heavy. → _____ has many pages.
   The dog is hungry. → _____ needs food.

6. Give the students more sentence to fill in using pronouns he, she, it. Have them write the answers in their note books.
CONCEPT 5: MASCULINE / FEMININE

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 4, benchmark 3, standard I (p. 34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 24-25</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Writing feminine word for masculine word: 41% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Explain the term masculine / feminine. Masculine means having characteristics/qualities that are traditionally thought to be typical of or suitable for men, while feminine is having characteristics/qualities that are traditionally thought to be typical of or suitable for a woman. Give examples of masculine/ feminine words from the children’s family e.g. father - mother, brother – sister , Uncle – Aunt etc.
2. To improve students’ concept and vocabulary for masculine/ feminine words give examples of masculine / feminine animals such as lion- lioness, as part of gradual learning, examples from different profession can also be given such as policeman- policewoman etc. Pictures at this stage would prove as a good learning source for students of this grade.
3. Write masculine/ feminine words on the board and make students practice it.
4. Tell students to bring pairs of masculine/ feminine words from home and add those in the word bank. Play vocabulary games – such as finding and / or matching masculine/ feminine words from that word bank.
5. Prepare a family tree with a list of masculine/ feminine nouns e.g. mother – father
CONCEPT 6: PREPOSITIONS

<table>
<thead>
<tr>
<th><strong>Curricular reference</strong></th>
<th>Competency 4, benchmark 3, standard I (p. 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Textbook reference</strong></td>
<td>Pp. 94 – 96</td>
</tr>
<tr>
<td><strong>What does the assessment data tell us?</strong></td>
<td>For some prepositions only 27% answered correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Check understanding of the prepositions by asking students to describe the positions of objects kept in the classroom such as “Bag on the desk”, “Books in the bag.” Tell students that ‘Prepositions are words that describe the position of an object/ animal or person’.
2. Guide students to find objects kept on specific positions or using pictures of objects kept in specific positions, e.g. The bottle is under the table.
3. Give instructions using the prepositions and ask students to follow them e.g. Keep the bag on the desk. Write with colour pencil.
4. Play games like treasure hunt hiding objects and ask students to follow written instructions with prepositions leading to the treasure, e.g. look for the next clue under the table.
5. Lead the students towards practice and ask them to make sentences using pictures like the ones below:

The mouse is ____ the booth.

The mouse is ____ the stool.
CONCEPT 7: VERBS – PRESENT CONTINUOUS TENSE

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 4, benchmark 3, standard I (p. 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 15 – 21</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Identifying correct present continuous verb in the textbook: 68% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Introduce the term verbs as action words by doing some actions and asking the students to name them.
2. The concept and definition of verb as action word is a primal and basic definition to learn at first. The progressive/continuous form of verb should then be taught by linking it with the current time of speaking.
3. Perform some simple actions (clap, read, speak, and throw) and ask the students: What am I doing? Reinforce that the actions which are happening at time of speaking are present continuous tense such as clapping, running etc.
4. Show pictures from magazines/calendars or newspapers and ask the students to describe them using present continuous tense. Give examples such as the girl is sitting, the boy is running etc.
5. Paste a picture on the board. Write a sentence describing the action in the picture but leave a blank space for the present continuous tense verb. Ask the students to write the correct verb to fill in the blanks.
**CONCEPT 8: PICTURE DESCRIPTION**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 2, benchmark 1, standard I (p. 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 68, 75</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Describing picture: 27% were able to write relevant sentences and 22% used appropriate sentence structure</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Fix 5 minutes for Show and Tell activity. Assign one student each day to bring any object or picture in the class and describe in front of the whole class.
2. Example: If a student brings a plate; he may describe as
   - This is a plate.
3. Let the students start by using “This is……” sentence. Gradually add more sentences in their description such as:
   - This is a plate.
   - Its colour is green.
   - We serve food in it.
4. Do a daily drill of the sentence structures. Add new structures as soon as the previous is understood and learnt.
5. Make the students practice arranging jumbled up words to form sentences.
   - Example: is a ball
   - This is a ball.
6. Give guided practice of forming sentence, by choosing words from a table to form sentences e.g.
   - He                  |  | pen.
   - Draws              |  | pencil.
    | Writes               |
7. Picture description can be stated as a visual representation of something, such as a person or scene, as shown in a photograph or painting.
8. Show a picture to the students and instruct them to name the objects as shown in the picture, hence enhancing students’ vocabulary and word bank.
9. Make a vocabulary web around objects/pictures, as shown in the image below, to be described on the board with the help of the students.

- cow
- brown
- milk
- legs
- farm
- field
- tail

10. Provide students with the sentence structures to be used for describing the pictures such as

This is a _____.
It has _____.
Its colour is ____________.
It gives _____________.

Students can initially copy, later use the sentence structure to form their own sentences.
CONCEPT 9: SINGULAR AND PLURAL

Tips for the teachers

1. Ask students to touch different parts of their body and ask questions like;
   - How many eyes / ears / hands / legs / nose / fingers do you have? Write their responses on the board.
2. Point to different objects in the classroom and ask questions like;
   - How many chairs / tables / boys / girls / fans etc are there in the class? Write their responses on the board.
3. Explain that a single (one) object / person / place is called singular noun and more than one (1) object / persons / places are called plural noun.
4. One can change singular noun into plural by adding (s) or (es) at the end of most nouns. Such as ear, ears, bed, bed, glass, glasses etc.....

Curricular reference

Competency 4, Standard 3; identify and change the number of naming words by adding or removing s and es. (Page No 34)

Textbook reference

Page No 39

What do students know well?

51% students were able to make plurals of the given words.
English
Class 5
CONCEPT 1: TYPES OF NOUNS

Tips for the teachers

1. Point out different objects in the classroom and ask students to name these objects.
   a. Explain that every object, place, and animal has a name. These naming words are called nouns.
2. On the board write people, place, thing, and animal in four sections and ask students to name as many as they can.
3. Show pictures such as that of a kitchen, shopping mall, etc. and instruct students to name the people, things, and animals they see in them.
4. Once students have understood the concept of nouns, introduce the concept of common and proper nouns by calling a student by the name and saying, “This is Ahmed. He is a boy.”
5. Tell students that there are many boys in the class but the special name of this boy is Ahmed. Boy is a common noun, Ahmed is a proper noun.
   a. Emphasize that common nouns are general names e.g. the name of the place where children study is school.
   b. Proper nouns are special nouns e.g. the name of this particular school where you study is ‘KPK Government Primary School Number 1, Peshawar’.
6. Make the students practice common and proper nouns by guiding them to write common nouns on the board and then think of their proper nouns. This can be a group activity as other students can help the one writing on the board and asking students to tell their proper nouns.

<table>
<thead>
<tr>
<th>Common</th>
<th>Proper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td>Girl, boy, woman, man, teacher</td>
</tr>
<tr>
<td>Place</td>
<td>School, home, market,</td>
</tr>
<tr>
<td>Thing</td>
<td>Book</td>
</tr>
</tbody>
</table>

7. Moving further, introduce the students with the concept of countable and uncountable nouns.
   Countable nouns:

   These nouns refer to something which can be counted. They have both singular and plural forms (e.g. cat/cats; woman/women; country/countries).
Uncountable Nouns:

A smaller number of nouns do not typically refer to things that can be counted and so they do not regularly have a plural form: these are known as uncountable nouns (or mass nouns). Examples include: rain, flour, earth, water or wood. Many abstract nouns are typically uncountable, e.g. happiness, truth, darkness, humour.

Examples:

I have a lot of money. (Not 1000 money)

I drink a lot of milk. (Not 5 milk)

Tell students that of course you can count money (when it’s mentioned as rupees), milk (mentioned in measuring quantity such as Kilos or grams), meat (same as milk); but then you would use the currency, units for measurement such as liter, kilo, glass,...and say that you have got:

5 Rupees... (but not 5 money).

2 liters, glasses... of milk (but not 2 milk)

Would you like some coffee?

Uncountable because it's referring to coffee as‘drink’ in general

He ordered a coffee. Countable, because it's referring to a cup of coffee
**CONCEPT 2: SIMPLE TENSES**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 4, benchmark 1, standard III(p. 59)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 159 - 167</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Identify simple tenses: only 36% &amp; 41% answered correctly.</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Refresh students’ memory by referring to verb as action words and how they represent timeframe of the action with its different forms.
2. Explain to the students that in a sentence, **verb tense** tells us when an action takes place.
   a. The **past tense** tells what has already happened
   b. The simple **present tense** tells about routines, habits, daily activities, and universal truths, and
   c. The **future tense** tells what will happen next.
3. Make the students practice the tenses through the following discussion
   a. Past tense: Talk about what students did the day earlier. Ask ‘What did you do at home yesterday?’ e.g. I ate sandwich, I changed my clothes etc.
   b. Present tense: Talk about the things students do daily e.g. I come to school. I brush my teeth.
   c. Future tense: Talk about the things students will do when they get back home. e.g. I will watch television. I will eat lunch.
4. Practice each tense for a week.
5. Practice changing the verb in the three tenses e.g. say eat, ate, will eat. Make a list of these verbs on a chart paper, put it in the classroom and reinforce daily.
6. Practice the tenses by making children read a unit from the textbook and circle the verb with labels as P for past, Pr for present and F for future.
7. Divide the class into three teams i.e. Present, Past and Future. Give them a verb and ask each team to use that in a sentence. Continue this practice unless you are sure that all the students have practiced all the tenses.
**CONCEPT 3: PARTS OF SPEECH**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 4, benchmark 1, standard III(p. 56 – 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 66 – 72, 68 – 75</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Identify what part of speech a word is: only 51% answered correctly when it was a verb. Many chose adverb and adjective instead.</td>
</tr>
</tbody>
</table>

1. Explain to the students that “Parts of speech” are the basic types of words that English language has. It is important to be able to recognize and identify the different types of words in English, so that you can understand grammar explanations and use the right word form at the right place.
2. Explain eight basic part of speech to the students.
   a. Noun: Words that are used to name persons, things, animals, places, ideas, or events.
   b. Pronoun: Words that are used as replacement for a noun such as I, it, he, she, mine, his, hers, we, they, theirs, and ours.
   c. Adjective: Words that are used to describe a noun or a pronoun. Adjectives can specify the quality, the size, and the number of nouns or pronouns.
   d. Verb: Word that shows an action (physical or mental) or state of being of the subject in a sentence.
   e. Adverb: Used to describe words, but the difference is that adverbs describe adjectives, verbs, or another adverb.
   f. Preposition: Words that specify physical location or a location in time such as on, in, inside, with, above, below, throughout, outside, before, near, and since.
   g. Conjunction: Words which join two words, phrases, or clauses such as and, yet, but, for, nor, or, and so.
   h. Interjection: Refers to words which express emotions and are usually followed by an exclamation point. Examples are: Ouch! That must have hurt. Hurray, we won!
3. Make the students practice each part of a speech for a week.
4. Practice identifying and circling one part of a speech at a time in a sentence. Extend the practice to identification of two, three and gradually as many parts of speech as required. Each word when identified and circled can be labelled as N- noun, P- pronoun, V – verb, Adj- Adjective ,Adv- Adverb, Pr- pronoun, Pre- preposition, Con – Conjunction and Int – Interjection.
CONCEPT 4: PREPOSITIONS

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 4, benchmark 1, standard III(p. 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 106 – 110</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Preposition to complete a sentence 27% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Check understanding of the prepositions by asking students to describe the positions of objects kept in the classroom.
2. Tell students that prepositions are words that describe the position of an object/animal or person. *They explain where things are in relation to each other.*
3. Give instructions using the prepositions and ask students to follow them e.g. keep the bag on the desk.
4. *Make the students identify and circle prepositions in a sentence.*
5. Direct students to make sentences using some pictures provided. Let them share their ideas first and then write a few sentences in their copies.
6. Instruct students to draw a picture and write sentences using prepositions.
(Class II & V)

CONCEPT 5: SENTENCE STRUCTURE.

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 4, benchmark 3, standard III(p. 62)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp 72, 128</td>
</tr>
<tr>
<td>What does the</td>
<td>In story writing 16% used appropriate grammar</td>
</tr>
<tr>
<td>assessment data tell</td>
<td>and sentence structure</td>
</tr>
<tr>
<td>us?</td>
<td></td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Explain the parts of a sentence to the students. A sentence can be divided into two parts: the naming part (subject) and the action part (predicate).
   a. Subject: of a sentence is the person, place, thing or idea that is doing or being something.
   b. Predicate: is the part of a sentence that tells something about the subject. The predicate always includes a verb. e.g.

   "Asad is a good boy."
   ‘Asad’ is subject
   ‘is a good boy’ is predicate

2. Introduce types of sentences and the relevant punctuation marks for that type of sentences.
   a. Statements (affirmative) – sentences which begin with a capital letter and end with a period or full stop (.) e.g. The elephant is big.
   b. Questions (interrogative) – are asking sentences which end with a question mark (?) e.g. Where is the man?
   c. Exclamatory- are sentences showing sudden and strong feelings. The exclamatory sentence always ends with an exclamation mark. The huge elephant sat on the man!

3. Practice each kind of sentence for two to three weeks. Practice the required punctuation as well.
4. Practice identifying and labelling the three kinds of sentences with symbols like S for statement, Q for questions and E for exclamatory.
5. Make a sentence train on the soft board. Label its carriages as statements, questions and exclamations. Instruct students to write the three types of sentences with correct punctuation on strips of paper and put them in the correct carriage. Practice this exercise daily
CONCEPT 6: CREATIVE WRITING

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Competency 2, benchmark 2, standard I (p. 46 – 47)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pg125, 131</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Story writing: approximately 14% were able to write a beginning, identify a problem and write the ending</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. To improve student’s creative writing skill, describe the elements of a story to the children i.e. the characters, settings – where the story took place, the beginning, the problem or the middle and the solution or the end of the story.
2. Tell students that a story usually has a problem and the characters of the story try to solve it.
3. To improve identification of the elements of the story (characters, setting, beginning, problem and solution/end), read a story and make the students identify these elements in it.
4. Make group of students and ask them to write a story in groups first deciding the title, characters, beginning, problem/middle and solution/ending.
5. Provide students with a story writing worksheet or let them make it in their note books.

<table>
<thead>
<tr>
<th>TITLE / NAME:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHARACTERS</td>
</tr>
<tr>
<td>Beginning: What happened first?</td>
</tr>
<tr>
<td>PROBLEM/MIDDLE: WHAT WILL HAPPEN NEXT?</td>
</tr>
<tr>
<td>CONCLUSION/END: HOW WILL THIS STORY END?</td>
</tr>
</tbody>
</table>
CONCEPT 7: VERBS

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Recognize and use more action verbs from extended environment including other subjects in speech and writing. P.G# 58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 64 – 76</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>24% answered correctly the concept of identifying action verb from the given picture</td>
</tr>
</tbody>
</table>

Tips for the teachers

- To improve students’ recognition of action verbs from the extended environment, refresh students’ memory by doing simple actions like jumping, running, singing etc. and ask the students to name them.
- To reinforce the term action verbs, explain that action verbs show an action. Some actions can be seen clearly like jump, run while some actions cannot be seen like think, understand etc.
- To improve students’ vocabulary, show pictures of some other common action words. Ask them to name the actions. Now invite volunteer students one by one to perform the learnt action verbs before the class.
- To practice identifying action verbs, paste/pin/display a picture of a “park” and invite students to tell simple sentences about the picture and try to focus their attention on the use of action verbs.
**CONCEPT 8: NOUNS**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Change the number of regular and irregular nouns, and nouns with no change in number (Pg# 56)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 12 - 22</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>30% answer correctly the concept of making plurals.</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

- To clarify the concept of plural nouns, first reinforce the concept of nouns by pointing out the different objects in the class and asking students to name them. Remind them about the naming words (Nouns) and its kinds.
- Show them an object such as a cap/pen/chalk/mango/potato/tomato/box. Ask them to name the object. Also ask whether it is one, two or more. Write the above nouns on the board.
  a. Now add one or more objects to increase the numbers, and ask students to name them. Write the plural nouns and ask for the difference.
  b. Explain the we can change the number of nouns by adding “s” or “es” at the end of most nouns. Tell the students that such nouns are called regular nouns.
- Explain the rules of changing the number of irregular nouns for each category i.e. baby, leaf, mouse, goose etc. with the help of pictures/flash cards.
- Tell the students that few nouns have no change in number whether they are single or more i.e. sheep, deer etc.

What does the assessment data tell us?

30% answer correctly the concept of making plurals.
CONCEPT 9: VERB (MODALS)

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Illustrate the use of can / cannot and, may/may not and should/should not to express permission prohibition, doubt, and obligation. (Pg# 58)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 65 – 72</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>21% answered correctly the concept of the use of can/cannot</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Explain the use of modals *(can/ cannot)* by playing a game. Explain that you use *can* or *cannot* to show ability or inability to do something. Ask the students to make two columns on a sheet of paper and write what they can and cannot do separately. Ask them to share their responses with the class.

2. Further explain that can / cannot, may / may not are also used to ask for permission.

   Do a role play with the students and assign them the roles of teachers and students. Students will have to ask for permission to do different tasks in the school or class, for example, student says ‘Can I sit on the chair’.

   Teacher says, ‘Yes, you can sit on the chair’ or ‘No, you cannot sit on the chair’.

   Do the same role play using may/ may not.

3. Explain that we use should or shouldn’t to give advice or to talk about what we think is right or wrong. Have a brainstorming session in the class and talk about what the students should or shouldn’t do to keep their city or environment clean. Write their responses on the board separately in two columns.
CONCEPT 10: MAKE INFERENCES

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Make simple inferences using context of the text and prior knowledge (Pg# 40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 54 - 63</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>31% answer correctly the concept of making inferences</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. To explain students the concept of inference, ask your head teacher or any other teacher to come to your classroom at a time that looks unexpected to your students. Have a short, whispered conversation off to the side, during which you point at one of the student and then look at your watch, school’s bell or gate (or any other scenario that makes sense). After the person leaves, ask the students what they think the two of you have discussed. Explain that the way the students have used their observation and facts to come to a conclusion is their inference.

2. To reinforce the concept of inference use picture book, comics with speech bubbles blocked out and have the students discuss and infer. Explain that to infer is not to state what is obvious (stating the obvious: that woman is wearing a teaching gown and holding a chalk. inference: that women is a teacher at a school).

3. To practice the concept display a text on the board and ask the students to answer the inferential questions.

**Example:**
Once upon a time the birds wanted a king. They had a meeting. The eagle, the crow, the owl, the robin and many more birds came to the meeting. One very tiny bird with brown feathers and a short tail was there too. He was so small that the other birds did not notice him. He was the sparrow.

1. The wren was ignored because of his:
   i. Colour
   ii. Size
   iii. Strength
   iv. Voice
   
   Answer: (b) Size

2. “Tiny” means:
   a) Beautiful
   b) Big
   c) Little
   d) Different

   Answer: (c) little
CONCEPT 11: EXTENDED USE OF WORDS TO POINT SOMETHING

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Identify and illustrate extended use of words that point to something (Pg# 57)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 95 – 100</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>30% answer correctly the concept of demonstrative pronouns.</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

- A demonstrative pronoun is a pronoun that is used to point to something specific within a sentence: this, that, these, and those, as in “This is an apple,” “Those are boys,” or “Take these to the clerk. These pronouns can indicate items in space or time, and they can be either singular or plural.
- To explain the use of demonstrative pronouns, hold a book in your hand and ask the students, what is this? (place stress on ‘this’), write the response on the board.
- Now point at an object placed ‘far’ (chair, table, fan) and ask the students what that is. (place stress on ‘that’).
- Explain the students that we use ‘this’ for singular and ‘these’ for plural things near us. While, we use ‘that’ for singular and ‘those’ for plural things far/away from us.
- Remember ‘this’/’that’ can be used without identifying nouns. For example, I cannot believe this. Another example. ‘Who did this?’
- To practice the concept of demonstrative pronouns, divide the students in pairs and ask them to practice using this/ these and that/ those.
- For further reinforcement of the concept ask the students to write sentences using ‘this’ and ‘that’ and draw pictures of objects far / near accordingly.
CONCEPT 12: SCAN A SIMPLE TEXT FOR SPECIFIC INFORMATION

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Scan a simple text for specific information (Pg# 40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 132 – 135</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>30% answer correctly the concept of scanning the text.</td>
</tr>
</tbody>
</table>

Tips for the teachers

- To improve students’ scanning skills, display/write/share through a worksheet a model text and ask the students to study it carefully.
  a. After they have finished studying the text, ask them few questions about the dates, places, persons etc.
- Make sure that your questions are about specific information.
- Explain to the students that while studying a text they should:
  (i) First let their eyes move quickly across the whole text and mark key information such as dates, days, people, places etc.
  (ii) Read the comprehension questions asked at the end and mark key information asked.
  (iii) Scan the text again and underline the key information and respond to the questions.
جامعہ دوم

تصویر 1: حروف تہجی کی ترتیب

| مہارت: نہائی (1) معیار: 1 حاصل نظام: 1 برآمد جماعت: اول |
| مہارت: نہائی فیال مشترک معیار: 1 حاصل نظام: 5 برآمد جماعت: دوم |

جامعہ دوم

1. تھومن کو حروف تہجی کی ترتیب پر نظر کئے بغیر حروف کے نظام کے نافذ کرنا ترتیب ہو گیا۔

2. حروف تہجی کی نظام پر نظر کر کے نظیح ترتیب ہو گیا۔

3. حروف تہجی کی نظام پر نظر کر کے نظیح ترتیب ہو گیا۔

4. حروف تہجی کی نظام پر نظر کر کے نظیح ترتیب ہو گیا۔

5. حروف تہجی کی نظام پر نظر کر کے نظیح ترتیب ہو گیا۔

6. بلوک کی ترتیب دی جا کر نظر کر کے نظیح ترتیب ہو گیا۔
تصور 2: حروف کی پیچان

<table>
<thead>
<tr>
<th>ہدایا</th>
</tr>
</thead>
<tbody>
<tr>
<td>تقریب</td>
</tr>
<tr>
<td>مهارت: پڑھائی (1) معیار: 1 ہر صم میں 1 کلمہ اپنے کلمے کے میز</td>
</tr>
</tbody>
</table>
تصویر

1. اسٹپ 1: تصویر

• چاہئے کہ بچوں کو مختلف تصاویر دکھائی جائیں اور ان سے متعلق سوالات کیا جائے ۔ جواب ات عامی مکمل جملوں یا کہریں اسی طرح ترتیب سے پڑھنے کی عادت ڈلوائیں ۔

• چاہئے کہ بچوں کو جملوں میں شفاف تصاویر جلد کے سواد سے پڑھائی جائے ۔

• چاہئے کہ بچوں سے پڑھائی گئی عبارت کے پرے میں تفصیل سے گفتگو کی جائے اور مختلف سوالات کے ذریعے عبارت کی سمجھ کچھ چیز جائے ۔

• چاہئے کہ بچے کو اردو زبان میں پڑھنے اور اندازہ بیان سے آگاہ کی جائے ۔

• چاہئے کہ بچے سے بیان کی ملکی موٹے سوالات کی سوچنے کی عادت بھی پختہ ہو سکے ۔

• تفہیم کروانے کا مقصد صرف پڑھنا ، سمجھنا ، اور لکھنا نہیں بلکہ سوچنا اور عمل کررہا ہے ۔ اس لیے بچوں کے سوچوں میں تفصیل کی ضرورت ہے ۔

• پہلے لفظی جوابات لکھویں ، پھر بتدریج جملے اور تفصیلی جوابات کروائیں ۔

• طریقہ لکھنے کے لئے سوالات کے جوابات کے جوابات کے جوابات سے پہلے سوالات کے جوابات لیے جا سکیں ۔

• اگر کم کر دوایا جائے -

<table>
<thead>
<tr>
<th>مہارت: پڑھائی (1)</th>
<th>معیار: 1</th>
<th>حاصل: 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>60% طلبہ نے درست جواب دیے</td>
<td>60%</td>
<td></td>
</tr>
</tbody>
</table>
### فہرست

| تقریب | پروپی | مثال
|---|---|---
| تقریب | 42% | 42%  

#### تحلیل:

1. بچوں کو کسی بھی لفظ لکھنے سے سترے طریق سے ہجے اور الفاظ کی درست لکھائی کے لیے عادت دلویں کہ وہ الفاظ کی پ ار پ ار مشق کریں۔
2. اس کے ساتھ ساتھ اس لفظ کی توڑ جوڑ بھی کروائیں۔
3. کلیئے الفاظ کی استعمال کے لیے عام الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئی الفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فلتیش کا فرمہ کرتی ہوئیالفاظ کے فل
چاپ اور چاپ کی نظرات

1. بچوں کو عبارت سازی کی سئوں کو عرضہ کر کے لیے چیز کی ایک جاں بچوں کو عبارت سازی کی جانچ ہارکی کرنے کے لیے دلچسپ سرگرمیاں کروائی جائیں ، لاہو ہوائیں کا دریافت دکھائی جائے اور سلسلے کی دکھائی پوچھا جائے کہ یہ کیا ہے؟ یہ سچ چیز سے بنی مختلف سوالات کیے جائیں جیسے کہ

- ہم اسے کیا کرتے ہیں؟
- اسے کہاں رکھتے ہیں؟
- یہ کہاں نتیجہ ہے؟
- اسے کہاں نہیں؟
- یہ کہاں مرنے کے لئے مارگوں میں پانی جاتا ہے؟
- وغیرہ۔

بچوں کے جوابات کو جملوں کی صورت میں بورد پر لکھیں اور ان سے لکھوائیں۔ اسی طرح مختلف شقیں کروائیں۔

2. بچوں کو مختلف تصویر راہنما اور اس کے متعلق جملے لکھوائیں۔

3. بچوں کو مختلف پروپیل اور کیلئے اپنے سہولتوں کی جذبہ کیے، وہ اپنے اسکول کے سہولتوں میں مختلف کیلئے اپنے سہولتوں کے مختلف کی آموزش کی رہنما۔

4. ان طرح زیبہ وظائف کی اضافہ کے لئے بیرون اور داخلہ دیکھنے کے لئے یہ میکس اور بچوں کا استعمال کھیلنے کے لئے اجرا کیا جا سکتا ہے۔
1. Engage the child in a conversation and ask them to tell you what they know about the topic. Help them remember key words and phrases.

2. Ask the child to write sentences using the new vocabulary and help them correct any mistakes. Introduce them to new vocabulary.

3. Encourage the child to write new words in sentences and practice using them in their writing.

4. Encourage the child to participate in various activities that involve speaking and writing, such as playing games or reading books. Make sure they understand the language correctly.

5. Ask the child to ask and answer simple questions in Urdu about new vocabulary and encourage them to use the words they have learned.
تصویر 7: وواد میں

<table>
<thead>
<tr>
<th>مہارت: نزین زبانی میں معاہدہ</th>
<th>1: حاضرین 100%، 2: نظریہ 100%</th>
<th>قوی ضابطہ</th>
</tr>
</thead>
<tbody>
<tr>
<td>معاہدہ</td>
<td>نظریہ</td>
<td></td>
</tr>
<tr>
<td>کئیسے ہے:</td>
<td>35% طلبہ نے درجہ جماعت جینے کے لئے مذکر نئے تصور سے آگاہ ہوئے۔</td>
<td></td>
</tr>
</tbody>
</table>

1. برقرار کریں کہ آگاہ کے لئے پہلی اشیاء کے نام سے طلبہ کو ضرور آگاہ کیا جائے۔ جیسے اسم، ضمیر، فعل، واحد جمع، مذکر نئے طریقے وغیرہ۔

2. بچوں کو اشیاء اور مشاہداتی اشیاء جیسے پتھر، نسل، کرسیاں، ستارے، رون، کی مثالیں دی جائیں اور لفظ کو بورڈ پر لکھا جائے پتا کہ بچوں کی بصری صلاحیت میں اضافہ ہو سکے۔

3. مثال کی رہائی ہے کہ پہلی تصویر راپ اور مشاہداتی اشیاء پر مشتمل ایک گروہ میں موجود اشیاء کو اضافے کی صورت میں واضح کیا جائے کہ واحد اور جمع میں کیا ہے۔ تلمذ کے ذریعے واحد اور جمع سمجھایے اور تمام الفاظ بورڈ پر لکھیں۔ پہلے (ے) والے الفاظ بنوائیں جیسے لڑکا، لڑکے۔ اور (ں) والے الفاظ جیسے لڑکی، لڑکیاں، کا۔وں، اور جملوں میں واحد جمع کی مشق کرواں۔

4. واحد جمع کی مختلف تصویر راپ کر کے بچوں سے ورک شول کریں۔
تصویر
8 جملے لیہ
منفی اور سوا تجویز طریقہ
1. کے لیہ منفی اور سوالیہ جملے سکھانے سے پہلے بچوں کو سمجھاپ ا جائے کہ لفظ منفی، مثبت پ ا سوا معنی کیا ہیں۔ بچوں کی گفتگو میں ان الفاظ کا استعمال نہ ان ضروری ہے۔ بچوں سے سرگرمی کرواتے ہوئے ان سے پ ار پ ار پوچھا جائے کہ وہ کون سے جملے بنا رہے ہیں۔
2. سے بچے جملوں کی مشق پ ار پ ار کروانی چاہیے۔ لہ ہ منفی جملے سکھائے جائیں تو جماعت کےہر ایک مثال لی جائے اور کمیونشن وقت بر شیئے سے انفوگرافی کام کر کے ہن کی اپنی ذاہب کے کسی نہیں یا اس لئے کر ہوئے کو سمجھنے میں مشکل کا
سامنہ ہیں۔
3. دو مطلب سے منفی اور سوالیہ جملوں کا استعمال کرم ہوائی۔
4. جملوں کی مشق میں بچوں کے افراد کی اجازت کے لئے مشق کی مہارت کا کام۔
5. جملوں کا مشق، منفی اور سوالیہ جملوں کی زبانی مشق کر کے اور پوری میں جمالی اور منفی نہیں ہے۔
6. سوالات کی مہارت بطور مہارت من نہیں ہے۔

پہلی جملے سے پیچھے کہ یہ کون سا مہارت سے بچے کے دوہائے کے مہارت تو جا اپنی۔

<table>
<thead>
<tr>
<th>قوی ضابط</th>
</tr>
</thead>
<tbody>
<tr>
<td>بحاجت روہ - صحیح فنر</td>
</tr>
<tr>
<td>بحاجت کے 53%</td>
</tr>
</tbody>
</table>

مہارت: زبان شماری معیار: 1 حاصل 7میں

تماصل 8: منفی اور سوالیہ مطلب
### Compendium: Assessment (2016 & 2017) Findings & Tips for Teachers (Class II & V)

<table>
<thead>
<tr>
<th>عوامی نصاب میں معیار</th>
<th>1: علم حاصل تت</th>
<th>2: قومی نصاب جماعتِ دوم–صفحہ نمبر ٩٩٩،٩٩،٩٩،٩٩</th>
<th>51% طلبہ نے درست جواب دیے</th>
</tr>
</thead>
<tbody>
<tr>
<td>مہارت: نصاب شناسی معیار</td>
<td>1: عالم حاصل تت</td>
<td>2: قومی نصاب جماعتِ دوم–صفحہ نمبر ٩٩٩،٩٩،٩٩،٩٩</td>
<td>51% طلبہ نے درست جواب دیے</td>
</tr>
</tbody>
</table>

### تجویزات

1. بچوں سے درہم میں فی الحال مکمل کلماتوں کے متعلق مکمل مکالمہ کریں۔
2. بچوں کو مکالمہ کے متعلق کلماتوں کی صورت میں جواب دینے کے لئے گفتگو کی کوشش کیں۔
3. بچوں کو کلمات کے ترتیب میں جواب دینے کے لئے ان کی اصلاحات کے لئے کوشش کریں۔
4. بچوں کو مکالمہ کے متعلق کلمات کی ترتیب کریں۔
5. بچوں کو مکالمہ کے متعلق کلمات کی ترتیب کریں۔

بچوں کو مکالمہ کے متعلق کلمات کی ترتیب کریں۔
تحویلیات:

1. کلیک کی افازہ(کاکی) کے سے پہچے، نہیں، نے، چکے) کے لئے چند کارڈز سوافت بورڈ پر لگایا کر سکتے ہیں۔

2. بچوں کو مختلف ورک شٹ میں خالی جگہیں دیں جنہوں نے حرف جاری سے ترک کیا جائے۔

3. گلام کی سے پہنچیں۔

4. کھلا کھیل کا بچوں کو حرف جاری ہے۔

5. کسی گھر پر جگہ کی عکس رکھائے اور بچوں کے متعلق سوالات کریں۔

مہارت: زبان شناختی معیار: 1 کامیاب تخمین: 1

| صنف | ویڈو تخلیص | کیسٹ بک | جواب کے تائجہ | 50% ظاہر 50% درست جواب دے
|------|-------------|--------|--------------|------------------------
| II   |             |        |              |                        |
| V    |             |        |              |                        |
آردو
جماعت پنجم
پنجم کے تصور: حروف تہجی کی ترتیب

<table>
<thead>
<tr>
<th>نمبر</th>
<th>مقصد/صاف</th>
<th>نتیجہ</th>
<th>جواب کے درصد</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>میں یکہ اور دوکارڈز پ ا حروف تہجی کا چارٹ آؤت طرائیں</td>
<td>جماعت کے سوفٹ بورڈ پر حروف تہجی کے فلت شِیئر نکالیں</td>
<td>43% عالم یے دوسٹ میں نہیں</td>
</tr>
<tr>
<td>2.</td>
<td>روشن نیا مم کی کباد کی کا قانون کی چکلیٹ کاردنار</td>
<td>رائے جماعت دوم میں حروف تہجی کے فلت شِیئر کو ترتیب میں بنائیں</td>
<td>57% عالم یے دوسٹ میں نہیں</td>
</tr>
<tr>
<td>3.</td>
<td>حروف تہجی کی کارت شیئر باہم کے سنس ویکس سے ترتیب حروف تہجی کی ترتیب میں بنائیں</td>
<td>63% عالم یے دوسٹ میں نہیں</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>کچھ وہ حروف تہجی کی ترتیب سے قدیر شم کارا پیچ جائیں</td>
<td>74% عالم یے دوسٹ میں نہیں</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>کچھ ارگنیزیشن کی ترتیب حروف تہجی کی ترتیب روشن نیا مم کی مطلب کو رکھائیں</td>
<td>85% عالم یے دوسٹ میں نہیں</td>
<td></td>
</tr>
</tbody>
</table>
## جامعہ:

1. بچوں کو روڑی طور پر موضوعات پر جاری نظر کیا جائے تاکہ یہ اورانے کے نئی کیا جا سکے کہ اورانے کی آپ کا کئی کا کئی کا کئی کے چار اورانے کے کوئی وی کوئی پتھر کے۔
   
2. ایک بار جو جاری نظر کیا جائے گا، بچوں کے لئے ایک حدید جواب دیں۔ ایک مکمل پرکار کے ساتھ بچوں کو اپنے نئی اورانے کو بھیجاں۔
   
3. بچوں کو روڑی طور پر موضوعات پر متصل کیا جائے تاکہ ان کو اپنے نئی اورانے پر مشورہ دیں۔
   
4. بچوں کو روڑی طور پر موضوعات پر جاری نظر کیا جائے تاکہ ان کو اپنے نئی اورانے کو بھیجاں۔

## قوی ضابطہ:

<table>
<thead>
<tr>
<th>مہارت</th>
<th>معیار</th>
<th>1 عالمی اورانے</th>
<th>4 عالمی اورانے</th>
</tr>
</thead>
<tbody>
<tr>
<td>مہارت نماز</td>
<td>معیار</td>
<td>1 عالمی اورانے</td>
<td>4 عالمی اورانے</td>
</tr>
<tr>
<td>مہارت کرنا (اردی)</td>
<td>معیار</td>
<td>1 عالمی اورانے</td>
<td>4 عالمی اورانے</td>
</tr>
</tbody>
</table>

## جائزے:

42% عالمی اورانے نے دوسری کامبینسیشن ہوئی۔

## تعلیمات:

1. بچوں کو روڑی طور پر موضوعات پر جاری نظر کیا جائے تاکہ یہ اورانے کے نئی کیا جا سکے کہ اورانے کی آپ کا کئی کا کئی کا کئی کے چار اورانے کے کوئی وی کوئی پتھر کے۔
2. ایک بار جو جاری نظر کیا جائے گا، بچوں کے لئے ایک حدید جواب دیں۔ ایک مکمل پرکار کے ساتھ بچوں کو اپنے نئی اورانے کو بھیجاں۔
3. بچوں کو روڑی طور پر موضوعات پر متصل کیا جائے تاکہ ان کو اپنے نئی اورانے پر مشورہ دیں۔
4. بچوں کو روڑی طور پر موضوعات پر جاری نظر کیا جائے تاکہ ان کو اپنے نئی اورانے کو بھیجاں۔
5. بچوں کو روڑی طور پر موضوعات پر جاری نظر کیا جائے تاکہ یہ اورانے کے نئی کیا جا سکے کہ اورانے کی آپ کا کئی کا کئی کا کئی کے چار اورانے کے کوئی وی کوئی پتھر کے۔
6. بچوں کو روڑی طور پر موضوعات پر جاری نظر کیا جائے تاکہ یہ اورانے کے نئی کیا جا سکے کہ اورانے کی آپ کا کئی کا کئی کا کئی کے چار اورانے کے کوئی وی کوئی پتھر کے۔
الفاظ کی ضد کے متعلق بچوں کو سمجھا جا سکتا ہے۔

1. تمام الفاظ کی معنی واضح طور پر بچوں کو پہنچا ہے تاکہ وہ انہیں یقین سامنے لگا سکیں۔
2. تمام الفاظ کی معنی واضح طور پر بچوں کو پہنچا ہے تاکہ وہ انہیں یقین سامنے لگا سکیں۔
3. تمام الفاظ کی معنی واضح طور پر بچوں کو پہنچا ہے تاکہ وہ انہیں یقین سامنے لگا سکیں۔
4. تمام الفاظ کی معنی واضح طور پر بچوں کو پہنچا ہے تاکہ وہ انہیں یقین سامنے لگا سکیں۔
5. تمام الفاظ کی معنی واضح طور پر بچوں کو پہنچا ہے تاکہ وہ انہیں یقین سامنے لگا سکیں۔
6. تمام الفاظ کی معنی واضح طور پر بچوں کو پہنچا ہے تاکہ وہ انہیں یقین سامنے لگا سکیں۔

<table>
<thead>
<tr>
<th></th>
<th>قوی ضعیف</th>
</tr>
</thead>
<tbody>
<tr>
<td>کیست بکی</td>
<td>بم اور ورسی</td>
</tr>
<tr>
<td>کیست بکی</td>
<td>بم اور ورسی</td>
</tr>
</tbody>
</table>

ملاحظہ: تمام الفاظ کی معنی واضح طور پر بچوں کو پہنچا ہے تاکہ وہ انہیں یقین سامنے لگا سکیں۔
سنہ 4: واحد کی بحث

| مہارت | نیشنل میٹر | فہرستہ کی | تحقیق کے میں زیادہ استعمال | پڑھنے لگانے کے لئے 53% ظاہر نظر | جواب کے معنا

تقریب نمبر

1. سکے جا ئیبنا جمع کی جن یںکر سبق کے متن میں بچوں سے کہیں کہ ایسے الفاظ تلاش

2. آپ انھیں ان الفاظ کی جمع/واحد فرم کریں جو سبق کے متن میں موجود ہوں اور سپہ سماجی الفاظ کی شاخص کریں

3. بچوں کا تصویر ویاب دکھ کریں کہ واحد فرم کے سبق کے متن میں موجود کیا ہوئے بچوں کی اس کلام کے اس کے متن میں موجود اشیاء کی شاخص کریں

4. بچوں کو ان الفاظ کی فرم سمجھائیں اور تمام الفاظ پر لکھیں۔ اس کے بعد (اس) والے الفاظ بنوئے جیسے لڑکا، لڑکے۔ اس کے ساتھ (وں) والی جمع میں جملے کے لحاظ سے فرم کچھ پاچایا ے۔

5. بچوں کو ان الفاظ کی جمع کے بعد کچھ نہیں کہیں کی مہارت کی کروائیں

6. بچوں کو ان الفاظ کی واحد فرم کھوچ کر رکھیں

مہارت : زبان شناختی معیار: 1 عالمی طویلی: 5 فم لوئے منصوبہ بہار مکتب

مہارت: نیشنل میٹر

تیر کی حد: 1

کلکسکر: 4

فہرستہ کی: متعارف

بچوں کے: 53%
### جملوں کی اقسام

1. **کے ئیہلتجا راریہ، حکمی ہ، ا بچوں کو لفظ انکاریہ ، سوالیہ، افساری معنی سمجھاتے ہوئے جملوں کی مشق کروائیں۔

2. جملےہمیں جیسے ہوئے، همیشہ پ ات کا خیال رکھیں کہ کوئی جملہ اخلاقیات کے خلاف نہ چاہے ہو یا نہیں بچا چاہیے۔ پ اراریہ ضرور ہیں لیکن ان سے غلط پیغام جاپتا ہے۔ ا ت چوری کرپطا چاہیے۔ جملے کے مطابق یہ انکاریہ اور افساری لیے جملوں کے انتخاب میں خیال رکا ضروری ہے۔

3. مطلب اسی طرح کاِ جملہ بنا جو ایک کو اخلاقیات کے خلاف نہ چاہے ہو اور افساری ایک ضرور ضرور کیا جائے گا۔ جملوں کو خیال کریں ہے کہ ان سے غلط پیغام جاپتا ہے۔

4. **یہ جملوں کو گڈ مڈ کر کے ان میں سے جملے الگ الگ کرواں۔**

5. جملوں میں رول تپاگن کریں اور ان میں سے جملے مکالمے کے ذریعہ پشاو کریں اور بچے اس کی شناخت کریں۔

### مہارت : چن کی مہارت

| مہارت | تمام مفلوت | عالم | استعمال
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>مضمون</td>
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<td>قوی نصب</td>
<td>6.5, 5</td>
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<td>999</td>
</tr>
<tr>
<td>جملے کی گستاکس</td>
<td>نیا</td>
<td>999</td>
<td>999</td>
</tr>
</tbody>
</table>

#### نکولیا:

1. جملے کو افکار کھیل سوپریور بچوں کے حساب پر کسی اضافہ کے معنوی کھیل کے بھرے تھے جو اس جملوں کی مہارت کو تکمیل کریں۔

2. جملوں کو افکار کھیل کھیل کی براہ راست سے کچھ افکار کھیل کے حساب پر کسی اضافہ کے معنوی کھیل کے بھرے تھے جو اس جملوں کی مہارت کو تکمیل کریں۔

3. جملے کو افکار کھیل سوپریور بچوں کے حساب پر کسی اضافہ کے معنوی کھیل کے بھرے تھے جو اس جملوں کی مہارت کو تکمیل کریں۔
### Tips for Teachers

<table>
<thead>
<tr>
<th>Task</th>
<th>Tips for Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Always talk in Urdu with children.</td>
</tr>
<tr>
<td>2.</td>
<td>Encourage children to complete sentences.</td>
</tr>
<tr>
<td>3.</td>
<td>Practice sentence construction by using verbs, adjectives, and adverbs.</td>
</tr>
<tr>
<td>4.</td>
<td>Practice sentence completion by filling in blanks.</td>
</tr>
<tr>
<td>5.</td>
<td>Children should complete sentences properly.</td>
</tr>
<tr>
<td>6.</td>
<td>Practice sentence correction by identifying and correcting errors.</td>
</tr>
<tr>
<td>7.</td>
<td>Encourage children to use simple sentences.</td>
</tr>
</tbody>
</table>

### تصور 7: استعمال کی حالت کا درست استعمال

<table>
<thead>
<tr>
<th>نمبر</th>
<th>مہارت</th>
<th>ترتیب سے دستیابی</th>
<th>ترتیب سے نیچے</th>
<th>ترتیب سے بالا</th>
<th>ترتیب سے پارک</th>
<th>ترتیب سے پارک</th>
<th>ترتیب سے پارک</th>
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</tr>
</tbody>
</table>

### تعلیم

1. 11 میں انجام دی افہم کرنے والی تربیت کی تربیت کا تعلق کو آنے والے طور پر تربیت کا تربیت کو اعادہ کریں۔
2. 2 طرف نظر کے کے طرف سے تربیت کا تربیت کا تربیت کو اعادہ کریں۔
3. 3 کھیل کا جمعت میں لغت ضرور رہا ہے۔
4. 4 نئے کریں پھر ایک لغت کی تربیت کے لیے تربیت کا تربیت کو اعادہ کریں۔
5. 5 کھیل کا جمعت میں انجام دی افہم کرنے والی تربیت کا تربیت کو اعادہ کریں۔
6. 6 جمعت پنجم میں انجام دی افہم کرنے والی تربیت کا تربیت کو اعادہ کریں۔
7. 7 جمعت پنجم میں انجام دی افہم کرنے والی تربیت کا تربیت کو اعادہ کریں۔
تصور 8: فعل، فاعل، مفعول

<table>
<thead>
<tr>
<th>مہارت: زبان ذکر سے حاصلات</th>
<th>غیر-قومی</th>
<th>قومی نصاب</th>
</tr>
</thead>
<tbody>
<tr>
<td>خلاصہ تجدید (ازدی)</td>
<td>52.64</td>
<td>99.87</td>
</tr>
<tr>
<td>تجدید کی ہوئی %</td>
<td>7.6</td>
<td>10.5</td>
</tr>
</tbody>
</table>

تجمیع:

1. فعل، فاعل اور مفعول میں جدید کر کے مزاحمت اور ایکوڈ کے فرق کی تحقیق کر کے لیے فاعل، فاعل اور مفعول کا مشقو کر دیں۔

2. اطمینان کی جاتی ایک کردار سے فلم کر کے تحقیق کر کے لیے فاعل، فاعل اور مفعول کا مشقو کر دیں۔

3. فعل، فاعل اور مفعول میں جدید کر کے مزاحمت اور ایکوڈ کے فرق کی تحقیق کر کے لیے فاعل، فاعل اور مفعول کا مشقو کر دیں۔

4. فعل، فاعل اور مفعول میں جدید کر کے مزاحمت اور ایکوڈ کے فرق کی تحقیق کر کے لیے فاعل، فاعل اور مفعول کا مشقو کر دیں۔

5. فعل، فاعل اور مفعول میں جدید کر کے مزاحمت اور ایکوڈ کے فرق کی تحقیق کر کے لیے فاعل، فاعل اور مفعول کا مشقو کر دیں۔

6. قومی نصاب کے ذیل کے احاطوں کی کچھ ملاحظات کی کچھ قابلیت کا اندازہ لگائیں۔

7. متعدد ایک کردار سے فلم کر کے تحقیق کر کے لیے فاعل، فاعل اور مفعول کا مشقو کر دیں۔

8. فعل، فاعل اور مفعول کو تحقیق کر کے طور پر کمیشن کے تحقیق کر دیں۔

مہارت: زبان ذکر سے حاصلات (2016 & 2017) پیش رکھتے ہیں کہ ہمارے ہم منے سے فعل، فاعل اور مفعول سے حالات کی تحقیق کر کے لیے فاعل، فاعل اور مفعول کا مشقو کر دیں۔
تصور 9: حروف کے اقامت

<table>
<thead>
<tr>
<th>اعداد و ترتيب</th>
<th>تعلیمی نصاب</th>
</tr>
</thead>
<tbody>
<tr>
<td>تجاوت طر:</td>
<td>28 عضو</td>
</tr>
<tr>
<td>خاکوں کی مدد سے حروف کے استعمال کی تربیت کروائیں۔</td>
<td>18 عضو</td>
</tr>
<tr>
<td>عام استعمال ہونے والے حروف کی فہرست مرتب کر کر او رو کے استعمال کی مشق کر دیئے اور حروف کی اقامت میں بناپینے۔</td>
<td>18 عضو</td>
</tr>
<tr>
<td>بچوں سے ورک شٹ /تختہ سیاہ پر ایک طرح کہانی اخطار کروائیں کہ خالی جگہوں پر مناسب اور درست حروف کھسکیں۔ (خوشی، غم، افسوس اور حیرت کے حالات کے بارے میں۔)</td>
<td>28 عضو</td>
</tr>
<tr>
<td>تجاوت کے ساتھ کئی اضافی آموزش دینے کے لئے کتابی کر دیئے کی نیابی دی۔</td>
<td>18 عضو</td>
</tr>
<tr>
<td>جانچنے کے لئے کثیرالاختیار آزمائش دیں اور کارکردگی کی پیمائش ریکارڈ رکھیں۔</td>
<td>28 عضو</td>
</tr>
<tr>
<td>حروف کی دوسری اقسام کی مشق کر کے ان کو درس سے لے سکیں۔</td>
<td>28 عضو</td>
</tr>
</tbody>
</table>

مہارت: زپ ان شناسی
علم حاصلات تت صفحہ 38
قومی نصاب: جماعت پنجم-اردو (لازمی) صفحہ نمبر: 31 عصالت تحلیل: 3
25% بچوں نے درس جواب دیا۔

تیاری:
1. خاکوں کی مدد سے حروف کے استعمال کی تربیت کروائیں۔
2. عام استعمال ہونے والے حروف کی فہرست مرتب کر کر او رو کے استعمال کی مشق کر دیئے اور حروف کی اقامت میں بناپینے۔
3. بچوں سے ورک شٹ /تختہ سیاہ پر ایک طرح کہانی اخطار کروائیں کہ خالی جگہوں پر مناسب اور درست حروف کھسکیں۔ (خوشی، غم، افسوس اور حیرت کے حالات کے بارے میں۔)
4. تجاوت کے ساتھ کئی اضافی آموزش دینے کے لئے کتابی کر دیئے کی نیابی دی۔
5. جانچنے کے لئے کثیرالاختیار آزمائش دیں اور کارکردگی کی پیمائش ریکارڈ رکھیں۔

یہ عمل کی مشق کر دیئے جس میں حروف کا استعمال تعلیم کے ساتھ اپنی انسانی کہاں کے فنون انداز میں خوش رکھیں।
تصور 11: اسم معرفہ کی اقسام

<table>
<thead>
<tr>
<th>تقوی نصاب</th>
</tr>
</thead>
</table>
| 38 یونیوں میں اعلیٰ خاص خلاصات کے قیاس کے ساتھ | 1
| 11 مینی یوم، اوردو (عنصر) کے لئے خلاصات کے قیاس کے ساتھ | 4
| 100% چھوٹے کے ساتھ | 26% چھوٹے کے ساتھ |

1. ایک بار مینے میں اسم معرفہ کی اقسام کو فہرست کیے۔
2. بچوں سے اسم معرفہ کی اقسام کے لئے بچوں کے دوبارہ کے بارے میں نقشہ گھر سے اسم کو نیپ یہ کوئی اسم کو یہ تحقیق کیے۔
3. بچوں کے بارے میں اسم معرفہ کی اقسام کے لئے بچوں کے دوبارہ کے بارے میں بچوں کے دوبارہ کے بارے میں تحقیق کیئے۔
4. ایک بار مینے میں اسم معرفہ کی اقسام کے لئے بچوں کے دوبارہ کے بارے میں تحقیق کیئے۔
5. بچوں سے اسم معرفہ کی اقسام کے لئے بچوں کے دوبارہ کے بارے میں تحقیق کیئے۔
6. بچوں سے اسم معرفہ کی اقسام کے لئے بچوں کے دوبارہ کے بارے میں تحقیق کیئے۔

مہارت: معیاری شناسی
تصویر 11:

<table>
<thead>
<tr>
<th>مہارت: زبان تعلیمی (عملی)</th>
<th>مقام</th>
<th>پیش</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>مجموعہ تعلیمی (عملی)</td>
<td>170</td>
<td>42</td>
<td>1</td>
</tr>
<tr>
<td>16%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

تکمیل:

1. ہر سامنے پر موجود کودکوں کی قلم کارا کیڈی کروائیں، کہ اس کو کیا صحیح و سہی کریں (متغیری نکاتی دلیل کے مطابق انتخاب کریں)
2. انتخاب سوالوں کے سمت سے بچے کی پیش کرائیں (مذکوری نکاتی دلیل کے مطابق انتخاب کریں)
3. کودکوں کے ذریعہ انتخاب اقتباس/کہانی میں پوچھے جانے شدہ سوالات/فیکٹر/مطلب انتخاب کریں
4. مختلف موضوعات/حالات کے ذریعہ انتخاب اقتباس/کہانی میں پوچھے جانے شدہ سوالات/فیکٹر/مطلب انتخاب کریں
5. بچوں کی طرف سے لایا گیا مضمون/کہانی کا مطلب تیار کریں، مضمون انتخاب کریں، مطلب انتخاب کریں
تصویر 12: لکھنا

| ہمتی لکھنے کی تجویزات | %زیادہ دریافت | میں ہمتی لکھنے کی تجویزات | 1. ابتدائی موضوعات سے آغاز کریں۔
|---------------------|-------------|---------------------|-------------------------|
|                    |             |                    | 2. اگر لکھنے میں ہواتھا رہی تو اسے وہ لفظ کھڑ کر دکھائیں۔
|                    |             |                    | 3. ذخیرہ الفاظ ضرور دیں۔ اگر بچے کو کوئی لفظ لکھنے میں ہر
|                    |             |                    | آسانی نہیں تو اسے ذخیرہ میں پڑاوا کریں۔
|                    |             |                    | 4. درامہ / کہانی/ مضمون کو آسان / مختصر الفاظ میں لکھنے کی مشق کروائیں (اسلام خان اختیار رضا)。
|                    |             |                    | 5. اس عمل کو خاص تعلیمی سطح سے لے کر کوئی کمک کریں۔
|                    |             |                    | 6. نئی اشعار کو واضح / سادہ الفاظ تک کھڑ کر کیا لکھوانے کی مشق کروائیں (علی اقبال)۔
|                    |             |                    | 7. بچوں سے اپنی پسند کے جملے سے آسان / سادہ الفاظ میں لکھوانے کی مشق کروائیں۔

مقامات: 23 صفحہ

| ہمتی نصاب | 1. معیار 1: میں ہمتی لکھنے کی تجویزات | 18.7, 27.8, 75.2, 78.8
|-------------|----------------------------------|---------------------|
|             | 2. ابتدائی موضوعات سے آغاز کریں۔ | 23 صفحہ
|             | 3. ذخیرہ الفاظ ضرور دیں۔ اگر بچے
|             | کوئی لفظ لکھنے میں ہر آسانی نہیں تو
|             | اسے ذخیرہ میں پڑاوا کریں۔
|             | 4. درامہ / کہانی/ مضمون کو آسان
|             | / مختصر الفاظ میں لکھوائیں (اسلام
|             | خان اختیار رضا)。
|             | 5. اس عمل کو خاص تعلیمی سطح سے
|             | لے کر کوئی کمک کریں۔
|             | 6. نئی اشعار کو واضح / سادہ
|             | الفاظ تک کھڑ کر کیا لکھوانے کی
|             | مشق کروائیں (علی اقبال)۔
|             | 7. بچوں سے اپنی پسند کے جملے
|             | سے آسان / سادہ الفاظ میں لکھوانے
|             | کی مشق کروائیں۔
Social Studies
Class 5
SOCIAL STUDIES

CLASS 5

CONCEPT 1: LATITUDE AND LONGITUDES

Tips for the teachers

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Understand there are 180 imaginary lines of latitude and 360 imaginary lines of longitude; Name the main lines of latitude and longitude; Use longitude and latitude to locate major cities of Pakistan and the world (p. 23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does the assessment data tell us?</td>
<td>• When asked whether latitude and longitude lines are real: 43% answered correctly • When asked how Equator divides the Earth: 36% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Before teaching the concept:
   - Make flash cards showing meaning of longitude and latitude. Latitude, means "breadth, width, and size. “Longitude means imaginary lines that divide the globe through the North and South Pole.
   - If possible, bring globe, atlases, world map and cardinal compass to the class.
2. Draw vertical and horizontal lines on a balloon. Begin your lesson with vertical and horizontal lines on the balloon and introduce longitude and latitude to the students as explained thorough the flashcard earlier.
   a. Now use the map and identify the imaginary lines and its use.
   b. While teaching ‘Latitude and Longitudes’, revise all types of angles with the help of protractor by drawing a picture of big protractor on the board.
3. Now use a football/ball and draw degrees on the ball with board marker to explain the use of imaginary lines in identifying different places.
4. Practice the concept of ‘Latitude and Longitude’, by asking students to locate different places on the map with the help of latitude and longitude. Example: Which country is 20°North and 40° East?
CONCEPT 2: MAP SKILLS AND PAKISTAN’S LOCATION

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Identify the position of things on maps using the terms cardinal and intermediate directions (p.14 – Class 4); Identify the significance of the location of Pakistan (p. 23 – Class 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 6</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Countries located at north or west of Pakistan: 33% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Create a classroom display of cardinal directions (North, South, East and West) by using resources available in the classroom like using paper plates or by drawing on any paper.
2. Ask the students to share where they have seen and used these directions before. Take time to discuss these with the class. Explain that we need to know these directions in order to be able to use them. Place direction signs in your room, according to where they exist.
3. Take students outside the class and ask them simple questions like who is standing to their north, south, west or east.
4. For further practice, create a maze of desks in your classroom and have students give directions to a blindfolded classmate. Generally having friends guide each other through the maze has the most successful results.
5. Square line pages or graph paper can also be used to start an activity to locate things on the paper according to the cardinal directions given above. Students can stand in the school ground and locate places and its direction which will further help to clear the concept.
6. Ask students to draw a map of their house with step by step directions leading to their bedroom. The directions must include cardinal directions.
7. Give worksheets of Pakistan’s map and flash cards of neighbouring countries. Give directions like east, west, south/north and ask students to place the flash card of that particular country in its specific direction.
CONCEPT 3: IMPACT OF HUMAN ACTIVITIES ON CLIMATE

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Explain various ways in which human activities affect climate; Identify individual and societal actions that can be taken to reduce adverse effects of human activities on climate (p.25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 39 – 42</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>• Impact of deforestation, industries, use of fossil fuels on climate: 40% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Display charts and vocabulary related to the topic like industrialization, farming, pollution, deforestation, etc. in the class.
2. Create fake visual untidy environment in the school to start class discussion or after break what kind of pollution student’s observe in school ground.
3. Ask students about the shocking human activities from the surrounding. Help them create a Photo-story board in school by collecting photographs from magazines, newspapers and express how they can reduce pollution.
4. Organize Art competition exposing pollution or sketching to bring awareness in other class levels too.
5. Introduce the three R’s project (Reduce, Reuse and Recycle) like Plastic bottles can be used to make garden pots, flowers, etc.
**CONCEPT 4: GREENHOUSE GASES AND THEIR EFFECTS**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Explore how human activities are responsible for the greenhouse effect (p. 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 40 – 43</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Greenhouse gases effect climate: 33% answered correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Discuss the relationship between the Earth and the Sun. Make a diagram on the board with the help of student’s feedback. Talk about importance of Earth’s atmosphere and introduce the vocabulary like greenhouse gases and greenhouse effects. (The gases in the atmosphere stop some of the heat from escaping into space. These gases are called greenhouse gases and the natural process between the sun, the atmosphere and the Earth is called the 'Greenhouse Effect', because it works the same way as a greenhouse)

   ![Diagram of greenhouse effect](image)

2. Display key words like radiation, heat, trap, gases, carbon dioxide etc. in the classroom.

3. Make mini greenhouse in the classroom using plastic bottles, soil and a plant. Tell students why they are making greenhouse. (A greenhouse is a house made of glass. It has glass walls and a glass roof. People grow different plants in them. A greenhouse stays warm inside, even during winter. Sunlight shines in and warms the plants and air inside. But the heat is trapped by the glass and can't escape. So during the daylight hours, it gets warmer and warmer inside a greenhouse, and stays pretty warm at night too.)

4. Discuss the importance of various greenhouse gases, such as carbon dioxide, are very important to Earth's atmosphere and climate. Thus, the Earth naturally produces the right balance of gases needed to create the perfect climate to sustain life.

5. Ask students to draw what they understand in the end of the lesson and label what’s happening in the picture.
CONCEPT 5: FEDERAL AND PROVINCIAL GOVERNMENT

Tips for the teachers

1. Display chart and vocabulary about Federal and Provincial Government in class for discussion and explanation.
2. Assign certain duties to the students in groups and explain how the federal and provincial government work. Create a role play in the class.
3. Once the students grasp the concept, use coloured chart papers to write responsibilities of each government and display in the class. Assemble them together to understand role of each government.

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Compare the formation of the government and provincial and federal levels; Explain their relationships (p.28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 81 – 86</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>When asked who the heads of the country, government, province are: 38% answered correctly</td>
</tr>
</tbody>
</table>

Federal Government
- Defense
- Foreign Policy
- Interprovincial Trade and Communications
- Currency
- Navigation
- Criminal Law
- Citizenship

Provincial Government
- Municipal Government
- Education
- Health
- Natural Resources
- Property and Civil Rights
- Highways
**CONCEPT 6: IMPORT AND EXPORT IN PAKISTAN**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Define the terms public goods, services, imports and exports; Identify the three largest exports and three largest imports (pp.31 – 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 129 – 131</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Benefits of exports: 35% answered correctly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Explain the students; exchange of goods is called trade. This also caters buying and selling of goods or services.
2. Explain the term import (entry of good) and export (exit of goods) by giving examples of exchange of daily life goods with neighbourhood. Elaborate further with examples of exchange of goods such as oil, rice, surgical items with other countries.
3. Discuss the meaning of import and export first and then introduce appropriate vocabulary such as importer, import, exporter, export and trade etc. to the students.
4. Develop a concept map with student’s feedback about the benefits of import and export in Pakistan separately on white board.
5. Ask the students to collect items (in small amount), wrappers and empty boxes in groups and prepare a small display for the class.
6. Make a list of products or resources imported by Pakistan that are most important.
7. Next to each import product, tell whether the import is a product (something created by people) or a natural resource (something that is found naturally).
8. Develop practical questioning session in the end to make students realize why Pakistan imports these products, what might happen if the import stops due to any reason like war.
9. Relate this topic with the previous one that governments establish imports and exports for country’s benefit and help people.
تصور 7: خام مال اور زرعی پیداوار کے ذرائع

<table>
<thead>
<tr>
<th>ذرائع کی طرح</th>
<th>تعداد نصاب</th>
<th>نصاب یتیم</th>
<th>نصاب کردار ادا کرے گا اور</th>
<th>نصاب اپنے موضوع پر مواد جمع کرکے اپنا کردار کلا روم میں یش کرے۔</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. پہاڑی علاقہ</td>
<td>2116%</td>
<td>18%</td>
<td>نصاب اپنے موضوع پر مواد جمع کرکے اپنا کردار کلا روم میں یش کرے۔</td>
<td></td>
</tr>
<tr>
<td>2. میدانی علاقہ</td>
<td>18%</td>
<td>18%</td>
<td>نصاب اپنے موضوع پر مواد جمع کرکے اپنا کردار کلا روم میں یش کرے۔</td>
<td></td>
</tr>
<tr>
<td>3. صحرائی علاقہ</td>
<td>18%</td>
<td>18%</td>
<td>نصاب اپنے موضوع پر مواد جمع کرکے اپنا کردار کلا روم میں یش کرے۔</td>
<td></td>
</tr>
<tr>
<td>4. ساحلی علاقہ</td>
<td>18%</td>
<td>18%</td>
<td>نصاب اپنے موضوع پر مواد جمع کرکے اپنا کردار کلا روم میں یش کرے۔</td>
<td></td>
</tr>
</tbody>
</table>

1. ذرائع: فریہ

پہلے تصورات کی وضاحت میں سب خصوصی زرعی پیداوار کے ذرائع کو بیان کرسکیں جن پر پاکستان کے لوگ باقی احصاء کہا گیا ہے۔

1. ٹکسٹ یتیم 2116% نصاب یتیم اور زرعی پیداوار کے ذرائع میں سب خصوصی اس کا درست پاس ہے۔

2. شہری اور دوسرا کسان کا کردار ادا کرے گا اور اپنے مواد جمع کرکے اپنا کردار کلا روم میں یش کرے۔

3. کسان نے اپنے موضوع پر مواد جمع کرکے اپنا کردار کلا روم میں یش کرے۔

4. جماعت پنجم - صفحہ 24 اور 25
| قومی نصاب 2006 | 25% | تکسیب 6کم متعلقہ 32-35 | 97% | 8کم تجاوت 6گروپ ہو (خواستی میں ان individually خواب میں دوائی مال) |

تعلیمی چارچ: 1. پرچاری بیان کی جانے والی معلومات ہمارے ہم میں ایکدیوار دیکھیں۔ ایک تعلیمی سمیت کہ سب بہت ہیں کہ کچھ جدید کا اس کی جانب تیار ہو۔
2. منطقہ جنوبی منطقہ معتدلہ اور منطقہ جنوبی کے بہت کمئے ہیں لیکن یہ جنوبی منطقہ اور منطقہ ہندوکو کے بہت کمئے ہیں۔
3. ظاہر کریں گا کہ قبضہ منطقہ جنوبی منطقہ کریں۔ منطقہ معتدلہ اور منطقہ جنوبی کے منطقہ مخلوط کہ کریں۔
4. ایک گروپ ہے لکھ کر جدول کو مختلف خطوں کے بھرست من محلہ مختصر کے حساب کے کسی فضیلت مالی اور تقلیل کریں۔

شرح: 8 اپریل 1899 کے مختلف خطوں کی شناخت کریں صفحہ: 25
تصویر 9: پاکستان آئی انیکی ہزار نژاد کے اہم مردوں و خواتین کے مثالی کرداروں کی شناخت

<table>
<thead>
<tr>
<th>قومی ثقاب 2006</th>
<th>26</th>
</tr>
</thead>
<tbody>
<tr>
<td>نسبت بند - سطح</td>
<td>60.59%</td>
</tr>
<tr>
<td>پیشکش کے مطلوب</td>
<td>22% نہیں</td>
</tr>
</tbody>
</table>
1. 
2. 
3. 
4. 
5. 
6. 

تصویر 11: پاکستان کے دستور میں شہریوں کو دیے گئے حقوق

<table>
<thead>
<tr>
<th>وقتی نمبر</th>
<th>2006 نمبر</th>
<th>تعداد نمبر</th>
<th>سفارت نمبر</th>
</tr>
</thead>
<tbody>
<tr>
<td>پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔ مثال نمبر: 28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>تمام حقوق کو مثالوں کے ذریعے سمجھائیں۔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>تمام حقوق کو مثالوں کے ذریعے سمجھائیں۔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>تمام حقوق کو مثالوں کے ذریعے سمجھائیں۔</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

تقریر:

1. آئین پاکستان 1973 کا بہترین شکل کھا دیا ہے لیے جو عوام کو آئین کے حقوق لیں۔
2. انتخاب کمیونتوں کی کوشش کا ہے جس نے پاکستان کے حقوق کا حفظ کیا ہے۔
3. تمام حقوق کو مثالوں کے ذریعے سمجھائیں۔

آئین پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔

پاکستان کے دستور میں شہریوں کو دیے گئے حقوق بتاسکیں۔
تصویر 12: اطلاعات، معلومات کے ذریعہ دوبارہ

<table>
<thead>
<tr>
<th>اطلاعات، معلومات کے ذریعہ دوبارہ</th>
<th>قومی نصاب 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>انتشار کے ذریعہ:</td>
<td></td>
</tr>
<tr>
<td>جمعت ہے</td>
<td></td>
</tr>
<tr>
<td>24 فیصد طلباً نے سچھ ذرائع دیا (نیوز یورکر کے جوہری ذرائع کے ساتوار موطن سے)</td>
<td></td>
</tr>
</tbody>
</table>

تقریبی

2. انتشار کے ذریعہ: دورہ پاکستان

نتیجہ

1. گروپ 1: رادیو

- گروپ 1: دوسرے گروپ کے فوائد اور قصانپطات پر بحث کرے گا۔
- گروپ 2: مائمیت
- گروپ 3: اخبار
- گروپ 4: انٹرنیٹ

یہ طریقہ تدریسی سے کر

نوٹ: مبایباً اور یائیں۔ اطلاعات، معلومات کے ذریعہ دوبارہ سب سے سچھ میں کہتوں۔ (خبروں کو عوامیہ پہنچانے کا سر کے ذریعہ اور ثرت

جانچ کے نتائج

(Class II & V)
تصویر 13: پاکستان کے مختلف علاقوں کی ثقافت

<table>
<thead>
<tr>
<th>کلمات کی تعداد</th>
<th>مجموعہ</th>
<th>پاکستان کی ثقافت کے موضوعات</th>
<th>دستکارپاں</th>
<th>خوراک</th>
<th>نیوز</th>
<th>لباس</th>
<th>نظم وافقات</th>
<th>شیخ نعمان</th>
<th>نظم وافقات</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>8</td>
<td>تحقیق 2006</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>تعداد کے تنظیم</td>
<td>سطح</td>
<td>8  اور 6</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

**تفصیلات:**

1. 8 مجموعہ کی 8 گروپات کے مختلف علاقوں کے موضوعات پر صحافی ں، نشست اور نیوز وغیرہ کو بیان کرسکیں۔
2. 8 گروپ کی 8 مجموعہ پر کھڑے پابندیں 8
3. 8 گروپ کی 8 مجموعہ پر کھڑے پابندیں 8
4. 8 گروپ کی 8 مجموعہ پر کھڑے پابندیں 8
5. 8 گروپ کی 8 مجموعہ پر کھڑے پابندیں 8
6. 8 گروپ کی 8 مجموعہ پر کھڑے پابندیں 8
7. 8 گروپ کی 8 مجموعہ پر کھڑے پابندیں 8

آیک کے نام کو یہ کھڑے پابندیں 8 گروپات کی 8 مجموعہ پر کھڑے پابندیں 8
تصویر 14: پاکستان کا اقتصادی نظام

<table>
<thead>
<tr>
<th>سال</th>
<th>تراکم</th>
<th>تراکم کی تعداد</th>
<th>تراکم کے میٹر</th>
<th>تراکم کی درصد</th>
<th>تراکم کی درصد درصد</th>
<th>تراکم کی درصد درصد</th>
<th>تراکم کی درصد درصد</th>
<th>تراکم کی درصد درصد</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>32</td>
<td>138</td>
<td>12%</td>
<td>21%</td>
<td>21%</td>
<td>21%</td>
<td>21%</td>
<td>21%</td>
</tr>
</tbody>
</table>

تقریب: 1. پاکستان کا اقتصادی نظام کے پیشے میں اقتصادی جائزے کے لئے پتہ چین کا اقتصادی نظام پر متعدد ایکاً ہے۔ اقتصادی نظام کا پتہ چین کریں۔

2. اقتصادی نظام کے سامنے پاکستان کا اقتصادی نظام پر تحقیق کریں۔

3. اقتصادی نظام پر پاکستان کا اقتصادی نظام بیان کریں۔

ملاحظہ: 1. پاکستان کا اقتصادی نظام کے پیشے میں اقتصادی جائزے کے لئے پتہ چین کا اقتصادی نظام پر متعدد ایکاً ہے۔

امتثال کے ذریعے سے پتہ چین کا اقتصادی نظام پر تحقیق کریں۔

صنف: کیمیائی، بیولوژی، سائنس علوم کے اخراجات اور تحقیقات پر کام کریں۔

صدارت کی پاتھ: سائنس علوم کے اخراجات اور تحقیقات پر کام کریں۔
Science
Class 5
SCIENCE
CLASS 5

CONCEPT 1: LIVING THINGS- VERTEBRATES AND INVERTEBRATE

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Differentiate between vertebrates and invertebrates according to key characteristics; Identify vertebrates and invertebrates from their surroundings (p. 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>p. 6-13</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Identification of vertebrates: 44% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. To teach students about vertebrates and invertebrates, introduce the key concept of backbone to the students. Draw backbone on the board. Point and introduce the terms backbone or spine or vertebral column. Explain them that animals with backbone are called vertebrates like cat, fish, cow. Also explain that invertebrates are animals that do not have a backbone such as spiders, insects, crabs, etc.

2. To reinforce the concept of vertebrates and invertebrates. Instruct students to feel their backbone by running their hand down the back of their neck and between their shoulder blades. Show them the picture of their back bone. Show children pictures of some invertebrates and have them observe that these animals do not have backbone.

3. To have students experiment the structure of backbone, provide them thick wires and beads. Instruct them to sting the wooden beads to form a backbone like the figure at point 6 below. Fasten both the ends. Have the students explore how the backbone of a vertebrate animal is made up of both bones which allow it to bend and move.

4. Provide practice to clarify the concept of vertebrates and invertebrates by having children paste pictures of vertebrates and invertebrates in the revenant columns made on board or chart paper.

<table>
<thead>
<tr>
<th>Vertebrates</th>
<th>Invertebrates</th>
</tr>
</thead>
</table>

5. Provide individual practice to reinforce the concept of vertebrates and invertebrates by instructing students to draw animals and insects under the heading of vertebrates.
and invertebrates. Display their work. Appreciate the correct classification by students and make corrections where necessary.

6. To assess students’ understanding of the concept of vertebrates and invertebrates arrange a competition. Divide the class into two groups. Ask them to write the names of as many vertebrates and invertebrates as they can. The team with the most correct answers wins.
CONCEPT 2: LIVING THINGS- CLASSIFICATION OF ANIMALS.

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Classify vertebrates into mammals, reptiles, fish, birds and amphibians on the basis of their characteristics (p. 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>p. 7 – 10</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Characteristics of mammals: 53% answered correctly  
• Characteristics of reptiles/ amphibians: 38% answered correctly |

Tips for the teachers

1. Before teaching students about classification of vertebrates, revise the concept of vertebrates and invertebrates using pictures of animals.

2. Discuss basic characteristics of animals discussed in first lesson to retain core knowledge. Write the characteristics of animals individually on the board and develop a concept map. Assign students home work to draw and write properties of their favorite animal.

3. Explain that living things can be sorted into groups in many ways and are classified by similar characteristics. Explain the term classification as :

   a. *Classification or to classify means to put similar things in groups. Scientists use classification*
   b. *Systems for grouping similar types of organisms*

4. Introduce 5 groups of vertebrates; birds, fishes, amphibians, reptiles and mammals with the help of their pictures, showing vertebral column. Now ask students to give few examples of each group.

### Groups of vertebrates

- **Warm-blooded**: Body temperature stays the same regardless of temperature outside
- **Cold-blooded**: Body temperature depends on the temperature outside
- **Amphibians**: Are born in the water. When they are young they breathe through gills. When they become adults they live on land and breathe through lungs. At this stage, they can only spend some time in the water.
- **Birds**: Many birds can fly but not all such as chickens and penguins
5. Introduce the characteristics of vertebrates make a table on chart paper. Write the names of the animal classes in table form (see below). Paste one picture or draw an example of each class. Put the chart paper up on the wall and point to the different groups. Say: To classify we need to think of characteristics, for example what is the animal covered with? If students cannot respond prompt them: Mammals are covered in fur or hair, birds have feathers, fish and reptiles have scales and amphibians have moist skin.

6. Keep writing what students say, have students assist in writing up. Fill in the gaps where needed. You should end up a chart as such:

<table>
<thead>
<tr>
<th>Covered with?</th>
<th>Mammals</th>
<th>Birds</th>
<th>Reptiles</th>
<th>Amphibians</th>
<th>Fish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hair or fur</td>
<td></td>
<td>Feathers</td>
<td>Scales</td>
<td>Moist skin</td>
<td>Scales</td>
</tr>
<tr>
<td>Where does it live?</td>
<td>Mostly land, some water</td>
<td>Land only</td>
<td>Mostly land, some water</td>
<td>Land and partially water</td>
<td>Water only</td>
</tr>
<tr>
<td>Breathe with?</td>
<td>Lungs</td>
<td>Lungs</td>
<td>Lungs</td>
<td>Gills and lungs</td>
<td>Gills</td>
</tr>
<tr>
<td>Warm-blooded or cold-blooded?</td>
<td>Warm</td>
<td>Warm</td>
<td>Cold</td>
<td>Cold</td>
<td>Cold</td>
</tr>
<tr>
<td>Details of its young</td>
<td>Most young born alive. Feed milk to their babies.</td>
<td>Lay hard-shelled eggs</td>
<td>Lay leathery shelled eggs</td>
<td>Lay eggs in the water</td>
<td>Lay eggs without shells</td>
</tr>
<tr>
<td>Examples</td>
<td>Humans, bears, dogs, dolphins, bats</td>
<td>Chickens, pigeons, owls</td>
<td>Frogs, salamanders</td>
<td>Fish, sharks, sea horses</td>
<td></td>
</tr>
</tbody>
</table>

7. Reinforce the information learnt about the classification of vertebrates, have students develop flashcards for each class of animals. On one side they can write the characteristics and on the other side paste or draw pictures of animals in that class. Have them use these to learn characteristics in pairs

8. Extend students’ learning about the groups of vertebrates, assign students to draw 1 animal of each group and write key features of that group such as body parts, skin, habitat, food. Display their work and appreciate the correct work. Make corrections where necessary.

9. To have students further practice describing animals’ characteristics, play Who am I? Instruct students to prepare hints for their friend, describing an animal’s characteristics and other students have to guess the animal and its group such as:
   - An animal has scales, it is cold-blooded and lives in water?
   - Animals who have hair and feed milk to their babies. Who are they?
   Clarify the classification of some of the confusing animals, discuss the information and ask questions as given below:
   - Why is a turtle a reptile and not an amphibian?
Answer: Turtles have scales on their bodies. They do not transform the way amphibians do. They breathe through lungs throughout their life. They can live in water; whereas amphibians can only live in water for part of their life.

- Why is a dolphin a mammal? Even though it lives in the water it is warm-blooded, it breathes through lungs, feeds milk to its young and even has some hair particularly when it is young.
CONCEPT 3: MICRO-ORGANISM

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Define microorganisms; Identify the main groups of microorganisms and give examples for each; Describe the advantages and disadvantages of microorganisms in daily life; Define infection; Identify ways by which microorganisms can enter the human body (p. 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 22 – 30; 25 - 31</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>• Characteristics of different microorganisms and infections caused by them: 32% on average answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Help students understand the difference between different microorganisms and their characteristics, clarify the concept by introducing the term microorganism as an extremely small living thing that can only be seen with a microscope.

2. To give children a firsthand experience of observing a microorganism, show a picture or model or real organism through prepared slides and microscope to the students if possible.

3. Show pictures of microorganisms that have harmful effects; called germs and they cause illness and diseases. Inform students that microorganisms rot the cooked and uncooked food.

4. Divide children in groups and instruct them to list down ways in which a bacterial disease can enter the body (breathing in, drinking water, eating food, and cuts) and ways to prevent transmission.

5. Discuss the beneficial effects of microorganisms such as
   - Bread is made with the help of microorganisms called yeast which makes the bread dough rise
   - Bacteria thickens yoghurt and cheese
   - Bacteria helps in decomposition of dead material
   - We eat mushrooms (fungi) because of high nutritional value
   - Bacteria in our stomach help process the food and keep us healthy.
6. Reinforce the advantages and disadvantages of microorganisms by showing students the picture given at the right:

Ask them to identify and encircle the places where microorganisms would be at work.

Then put a ‘star’ on anything that is helpful and an ‘x’ on anything that is harmful.

Assess students’ understanding of microorganisms, prepare a chart shown below and instruct children to fill the information about the type, advantages and disadvantages in the given columns

<table>
<thead>
<tr>
<th>Micro-organism</th>
<th>Definition</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virus</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Bacteria</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Fungi</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
**CONCEPT 4: SEED STRUCTURE AND GERMINATION**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Compare the structure and function of French bean and Maize seed; List the functions of cotyledons (p. 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 38 – 41</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Identify monocotyledonous and dicotyledonous seeds: 32% answeredCorrectly</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Help students understand the difference between monocotyledon and dicotyledonous seed, soak seeds a day earlier and show it to them. Tell students that these seeds will grow into plants as shown in the pictures below. Show students the pictures and:
   - Point at the leafy part and say a **cotyledon** is the leafy part of the seed that will grow into the leaves.
   - Point at the seed with one leaf and say that this is monocotyledon seed as “mono” means **one**, having one **cotyledon**.
   - Point at the seed with two leaves and say that this is dicotyledonous seed as “di” mean **two**. Having two **cotyledons**.
   - *Further inform the students that monocot seed cannot be separated into two pieces easily while dicot seeds can be divided into two parts.*

2. Help the student experiment how monocot and dicot seeds grow, divide the class in groups and provide them with monocot and dicot seeds of different plants like corn, beans, and peanuts etc. instruct children to soak the seeds in water.
3. Instruct student to remove the upper cover of a seed gently and observe its internal structure. Point at the external structure of seeds and ask them to observe labeled diagram of monocots and dicots as shown in the picture below.

![Diagram of monocot and dicot seeds](image)

4. Show the pictures of monocot and dicot plants/seeds. Instruct students to paste the pictures in the relevant column on the chart as follows:

<table>
<thead>
<tr>
<th>Seeds/Plants</th>
<th>Monocot</th>
<th>Dicot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprouts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monocot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dicot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotyledon(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roots</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CONCEPT 5: ENVIRONMENTAL POLLUTION - CAUSES AND EFFECTS

Tips for the teachers

1. Help students understand the causes and effects of pollution. Display pictures of water, air and land pollution. Let the students identify what is wrong with the pictures displayed and who is causing them.

2. Write students’ responses underneath each picture. At the end of the activity, discuss the meaning of pollution (the presence of harmful or poisonous substances into the environment) and its kinds.

3. Reinforce that Air pollution is the bad air we breathe. Human activities can release substances into the air, some of which can cause problems for humans, plants, and animals. Land pollution is the trash and other material that seeps into the Earth’s surface. Water pollution occurs when a body of water is affected due to the addition of large amounts of materials into the water.

4. To help students understand the causes and effects of pollution infer that people can’t survive without clean water, air and land therefore pollution free environment is responsibility and concern of all people in every community. Relate pollution related diseases with students’ own life and ask them about what kind of health problems they face due to air, water and land pollution. Write student responses on the board as a web. (Skin Rashes, Asthma, Coughing, Bronchitis, Headaches, Heart problems, Dizziness, Throat and Eye Irritation, Cancer).

5. To assess student’s understanding about the causes and effects of pollution, instruct them to gather related information from the book that they have and fill in the chart as shown below.

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Explain main causes and effects of water, air and land pollution on environment and suggest ways to reduce them (p. 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 50 – 52</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>• Causes of pollution: 37% answered correctly</td>
</tr>
<tr>
<td></td>
<td>• Effects of pollution: 34% answered correctly</td>
</tr>
<tr>
<td>Type</td>
<td>Causes</td>
</tr>
<tr>
<td>------------</td>
<td>--------</td>
</tr>
<tr>
<td>Air</td>
<td>•</td>
</tr>
<tr>
<td>Water</td>
<td>•</td>
</tr>
<tr>
<td>Land</td>
<td>•</td>
</tr>
</tbody>
</table>

**Land pollution**

**Air Pollution**

**Water pollution**
CONCEPT 6: MATTER AND STATES- PROPERTY OF STATES

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Describe the properties of the three states of matter on the basis of arrangement of particles (p. 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 61 – 63</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>40% on average answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Help students understand the properties of three states of matter, introduce the term matter as anything that takes up space and has mass.

2. Tell students that matter can be found in three states - solid, liquid and gas. Give some examples and then ask children to write some more in the form of web.

3. Collect different items (water, juice, book, helium gas balloons and Pepsi) to investigate their observable properties. For example:
   a. Show students a book or pencil and ask: *What state is this? Does it have fixed shape? Does it have fixed volume? How close are the molecules?*
   b. Explain: *Solids are fixed in shape because their molecules are very close together*
   c. Show students a bottle of water and ask students what state this is and why?
   d. Have students pour water into a glass and a pot and describe what they see (the water takes on the shape of each)
   e. Explain: *Liquids can flow from one place to another because their molecules are not as close as solid.*

4. Have students make this table on the chart and fill it in to explain the properties of Matter.
5. To help students understand the molecular arrangement of the three states of matter inform students that matter is made up of atoms which when put together form molecules. Show students a diagram of the molecules in solids, liquids and gases.

<table>
<thead>
<tr>
<th>Type</th>
<th>Solid</th>
<th>Liquid</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shape</td>
<td>Fixed</td>
<td>Not fixed</td>
<td>Not fixed</td>
</tr>
<tr>
<td>Volume</td>
<td>Definite</td>
<td>Definite</td>
<td>Indefinite</td>
</tr>
<tr>
<td>Space between molecules</td>
<td>Very close together</td>
<td>Enough space to move</td>
<td>Far apart</td>
</tr>
</tbody>
</table>

6. Divide the class into three groups, have students draw diagrams of the molecules in solids, liquids and gases on the chart. Have one person in each group explain the diagram to the class.
CONCEPT 7: MATTER AND STATES - CHANGE OF STATES

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Investigate the effect of heat on particle motion during a change in states; Demonstrate and explain the processes that are involved in the change of states (p. 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 64 – 70</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Change of states: 39% on average answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Introduce the changing state of matter through an experiment if possible, otherwise, explain the entire experiment through pictures. Heat ice in front of children and explain ice which is solid is turning into water which is a liquid. Point at the water is turning into steam which is a gas when heat is provided. Hold a lid over the steam to collect the water vapours and inform students that the water vapours turn into water after cooling. Keep the water collected in the freezer and let children observe how it turns into ice. Alternatively, you can use candle wax and show melting and freezing of wax.

2. After the experiment, introduce the terms melting and evaporation with the meanings in the class. Explain if the matter gains heat, its molecules start vibrating fast which changes the state of matter. Ice (solid) gains heat and become water (liquid). Water gains heat and become steam (gas).

3. Explain that if we reverse the process, the movement of molecules slows down and change of state takes place. Introduce the terms condensation and freezing with meanings and examples like Steam(gas) when lose heat/energy it turns into water(liquid) and when water lose heat/energy further it freeze into ice(solid).

4. Draw this diagram on the board. Recap what you said about melting/freezing using diagram.

   Pointing at the diagram, say: What happens when a liquid converts to a gas? What happens to the energy? And the vibration of molecules? What is this process called?

5. Ask students some other examples from daily life like melting of chocolate and candle wax. Dew drops (liquid) are formed on grass in cool mornings when dense fog (water vapours) in the cool air condenses.
6. Draw the first diagram on the board. Ask the students to fill in the particles. Then have them fill in the blanks about whether the energy is increasing or decreasing. The end result should look somewhat like the second diagram below.

Energy _________ →

<table>
<thead>
<tr>
<th>Solid</th>
<th>Liquid</th>
<th>Gas</th>
</tr>
</thead>
</table>

Energy 

![Diagram showing energy transitions between solid, liquid, and gas states.](image)
CONCEPT 8: MATTER AND STATES: CONDENSATION AND EVAPORATION IN NATURE.

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Describe the role of evaporation and condensation in the water cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 67 – 70</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Defining evaporation and condensation: 12% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Start your lesson by revising the definitions of condensation and evaporation.
2. Draw this diagram on the board.
3. Ask the following questions and encourage the students to give their responses
   - Where is water found on earth? (Sea, lake, ponds, rivers, puddles)
   - What happens when sun comes out? (Evaporation takes place)
   - Where the water goes when something is drying? (Earth’s atmosphere)
   - How does water temporarily get stored in Earth’s atmosphere? What is this process called? (By the process of condensation clouds are formed and store water in the form of water droplets)
   - How does water fall from earth’s atmosphere? What is the process called? (When clouds get heavy they release water droplets that fall on earth. This is called precipitation)

Explain: Water exists on earth in solid, liquid and gas forms, as ice, water and water vapor. It is continuously moving between its different forms or states in the water cycle. The processes involved in the water cycle includes evaporation, condensation and precipitation.

4. Conduct the experiment to make children observe the water cycle. Place the mug in the bottom of the bowl. Add water around the mug so that it comes up to 2/3rd of the mug. Mark at the amount of water to show the water level.
Place a thin plastic sheet to cover the mug and bowl and fasten it with a string. Place the mug and bowl in a sunny area. At the end of the experiment make the students observe the drops of water at the top of the cling film and that the water level has lowered proving that evaporation has taken place. The condensation droplets are the clouds. They will be dripping back into the bowl but you should find that some of the water is now in the cup (your mountains) demonstrating precipitation.

5. Assign students to draw the water cycle on paper and label it. Display students work in the class.

6. Apply knowledge of water cycle by writing a creative story or autobiography of water droplets or make funny posters of water cycle.
CONCEPT 9: FORCES & MACHINES – FRICTION

Tips for the teachers

1. Explain the concept of friction through an experiment; take 2 surfaces i.e. table top and carpet/piece of cloth and 2 marble balls. Draw a starting and ending line on both of the surfaces and place both of the marble balls on each surface starting line. Ask 2 students to push the balls to the ending line at the same time and then observe which ball crosses the end line first. Conclude the experiment, why the ball placed on the carpet reaches the end line late or stops in the middle? Because the surface was rough and friction is found on a rough surface and it opposes motion. However, table top was a smooth surface so there was no friction

Explain: The force of one surface or object rubbing against another is friction. It is the resistance that one surface or object encounters when moving over another.
Remind students: Force is a push or pull that acts on an object.
Explain: The amount of friction depends on the texture of the material, surface area, speed, weight, etc.

2. Conduct another experiment to show that friction produces heat. Ask the students to observe their palm and back of their palm and their surfaces. (rough and smooth). Then ask the students to rub both of their palm together for 2 minutes and then tell what do they feel(heat). Now ask the students to rub the back of their palm with the other hand and observe the difference.
Conclude the whole experiment that rubbing the both palms together produces heat, while rubbing one palm with other back of palm produces no heat. Moreover, it was easy to rub the back of the palm with the other hand because it is smooth.
Friction produces heat. Rub your eraser on the desk and you will feel a warm eraser when you touch. Rubbing palms produces heat. Define friction with reference to this example i.e. surfaces and motion. Friction is found on a rough surface, and when something tries to move on it, it produces heat.

Ask students, what will happen if they apply oil on their hand? Will the rubbing of palm still produces same amount of heat? (No) because friction is reduced.

3. To extend students’ understanding of friction conduct this experiment.

   o Collect different objects with different types of surfaces (book, towel, mirror, etc)
o Make an inclined plane by stacking up several books and putting each of these objects against it.

o Take a block of wood and let it slide over different types of objects/surfaces

o On each surface ask the students to observe how much time it takes for the block to reach the bottom (they can use words like fast, medium, slow if they cannot time it)

o Conclude the observations with the students, for example: *On rougher surfaces the block moves slower (there is more friction) and smoother surfaces such as glass it moves faster (less friction).*

Modify the experiment

o Have the students make the plane steeper and repeat the steps.

o Conclude the observations with the students, for example: *When we increase the steepness of the plane, the ball moves faster (friction is reduced).*

Modify the experiment once more

o Use a ball in place of the block of wood and repeat the steps.

o Conclude the observations with the students, for example: *When we reduce the amount of contact area (or surface area), the ball moves faster (friction is reduced).*

Explain to the students that we need to reduce friction to increase the performance of machines, car engines so lubricants or oils are used. Otherwise machine parts would wear and tear because of friction. We need to have friction while writing on blackboard with chalk, lighting a match stick, marks on the tire and our joggers etc.

Divide students in groups. Instruct them list *some of the means of reducing friction?* Students should be able to recap what they learned.

Provide prompts such as Say: *If there is oil on the floor and you step on it, what will happen? Most likely you will slip, as the friction is reduced. So oil or lubricants are one way to reduce friction. Ask children to think of any other examples? Wheels to reduce friction, the shape of the car, etc.*
CONCEPT 10: FORCES & MACHINES –BALANCED / UNBALANCED FORCE & INERTIA

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Differentiate between and describe effects of balanced and unbalanced forces on the motion of an object; Describe the term inertia (p. 34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 81 – 83</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Identify situations where force is used: 54% answered correctly;  
• Concept of inertia: 35% answered correctly |

**Tips for the teachers**

1. Clarify the term force through the following activity: Put a chair in front of you. First ask one student to push it. Then, ask another to pull it.

   Explain that *Force (Urdu) is a push or pull that acts on an object.*

2. To make students further understand the concept of force, teach about balanced and unbalanced force. Make 2 teams A (with 5 members) and B (with 3 members), organize a game of *tug of war (Rope pulling)* between the two teams. They will play “tug of war” (pulling the rope from both sides) and then see who wins. Ask the students, why a group of 5 students won the tug of war. Students would say that 5 students had more “taqat” or “force”.

   *Explain that when force is applied in opposite directions and is equal on both sides it is known as a balanced force (Urdu). When the force is not equal on both sides it is known as an unbalanced force (Urdu).*

   ‘Explain that Force is Taqat in Urdu and it was not balanced, 5 students applied more force than three on the other side. What could have happened if we have 5 students on both the sides? No one will win because the forces are balanced.

   Call two students. Ask one student to grasp other student’s hand firmly and place his elbow on a table or other flat surface. On the signal, try to force other student’s hand to the table. The students will conclude why one student wins (who applied more force). Forces are not balanced. Why both arms stands still for some times? (Balanced force)

   *Explain: Force is a push or pull that acts on an object.*  
   *Explain: When force is applied in opposite directions and is equal on both sides it is known as a balanced force. When the force is not equal on both sides it is known as an unbalanced force*

3. To make the student understand the concept of inertia conduct an experiment. Give one student a spoon and put a marble on it. Ask the student to walk through to a specific point and stop there suddenly. The marble will fall down from the spoon. Explain that *this...*
happened because the marble wanted to remain in motion and dropped forward from the spoon

Explain INERTIA in relation to the conducted experiment. Inertia is the resistance of any object to any change in its state of motion or rest.” To resist the effect of any external force is known as inertia.

To explain the concept of inertia discusses an example with the children from daily life. Ask, how many of the students have travelled in a bus? How many of the students have fallen forward when the driver applied the brake? Why do they fall? It is because when the driver applies the brake, external force acts on us and we resist that force in order to maintain our balance by holding onto a handle with full force. The force we are applying to resist the brake effect is known as inertia.

Ask, who will face more inertia? A fat person or a skinny person? A fat person will face more inertia as he has more mass and inertia is directly proportional to mass. Greater the mass, greater the inertia.
CONCEPT 11: FORCES & MACHINES – SIMPLE MACHINES

Tips for the teachers

1. Before teaching about simple machine, reinforce the concept of force. Explain that ‘Force is push or pull’ and machines help you do work by changing the amount of force required, the distance or direction of force. Certain machines are complex, i.e. they have many parts such as bicycle. While simple machines are made up of only one or two parts.

2. To teach students about the types of machines, show pictures or real machines and explain each.
   - Wheel: the best invention which made the transportation of heavy objects such as rocks and boats easy using log rollers. As the object moved forward, rollers were taken from behind and replaced in front.
   - Lever: The lever consists of a long beam and a fulcrum, or pivot. The common lever used are wheelbarrow, seesaw, scissors etc.
   - Screw: A screw can also act to hold things together in some cases. Some examples of the uses of a screw are in a jar lid, meat grinder, door lock, machine screw.
   - Pulleys: A pulley is one of the original simple machines. The original primary use for pulleys was to make it easier to lift heavy items. The pulley is a simple machine made with a wheel and a rope, cord, or chain. Examples are elevators, bulldozers, rock climbers, cranes etc.
   - Inclined Planes: It is a plane surface where one end is higher than the other. Common examples are children's slide, a loading ramp, aircraft wings, windmills, and propeller blades.
   - Wedges: “Almost all cutting tools are wedges. e.g. shovel, a knife, an axe, a pick axe, a saw, a needle etc.

3. Divide students into groups and have each team write down one example of each type of machine. They should draw a picture of each as well. Have the students come up and explain what they have chosen and why. If there are any mistakes have them correct them and display the finished work on the wall.

Curricular reference

| What does the assessment data tell us? | Identify simple machines: 8% answered correctly |
| Curricular reference | Demonstrate how wedge and inclined plane are used to move the objects; Compare the three kinds of levers using examples; Describe how lever makes work easier by giving examples of its uses from daily life |
| Textbook reference | Pp. 84 – 88 |
4. Ask the students to make a model of any simple machine from junk material and bring it to the classroom next day. Provide them opportunity to display and explain their developed machine.
CONCEPT 12: ELECTRICITY AND MAGNETISM – ELECTRIC CURRENT & CHARGES

<table>
<thead>
<tr>
<th>Curricular reference -</th>
<th>Describe flow of electric current in an electrical circuit; (p. 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 109 – 110</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Concept of electric current, charges and circuits: 33% on average answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Ask the students to name some appliances used in their home. Explain that electrical energy is a form of energy from which we supply power to our appliances. *Electric current is the flow of electric charges. Charges come from electrons which are tiny particles we cannot see. When electrons flow through certain substances we get electricity.*

2. Demonstrate the workings of an electric circuit. Bring wire, small bulb and battery to the class and make the complete circuit. Explain that ‘An electric circuit is an electrical device that provides a path for electrical current to flow’.

3. Draw the circuit consisting of a bulb, battery and wire on the board. Label battery of +ve and –ve terminals, and then show the flow of electron through wire till the other terminal. If the circuit wire could be broken, electrons will reach their original position, hence, the bulb will not light. Draw incomplete circuit as well.

4. To further explain the working of an electric circuit instruct students to make a circle with you. Tell them that you represent a battery, they represent a wire conductor and the circle represents a circuit. Distribute an object -- like a ball or an eraser -- to each member of the circle, including yourself. Ideally, everyone should have the same object. Tell students that these objects represent electrons inside a wire conductor.
   
   a. Remind students that you are playing the part of the battery in this circuit. Explain that all batteries have a positive end, represented by your left hand, and a negative end, represented by your right hand. Pass your "electron" (the object you are holding) to the student on your right. The student receiving your electron should in turn pass the one he or she is holding to the right. Have students continue passing on electrons to the person to their right. Tell...
students that this represents the flow of electricity in the circuit, the like charges repel each other which keeps them moving.

b. Tell students that as long as the circle remains intact, the electrons continue to flow and their circuit is closed. Demonstrate this by creating a gap in the circle of students that is too wide across to pass electrons. Tell them in this way the current will stop.
**CONCEPT 13: LIGHT PROPERTIES & BEHAVIOR – PROPERTIES OF OBJECTS**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Differentiate between luminous and non-luminous objects; Identify and differentiate between transparent, opaque and translucent objects in their surroundings (p.34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 95 – 98</td>
</tr>
</tbody>
</table>
| What does the assessment data tell us? | • Identify luminous objects: 33% answered correctly  
• Indicate properties of opaque and transparent objects: 37% answered correctly |

**Tips for the teachers**

1. **Explain the difference between luminous and non-luminous objects that**

   Luminous objects are objects that give out light on their own. Torch, Sun and Stars are luminous object, they have their own light.

   Non-luminous objects are objects that do not give out light on their own. Book and our hand are non-luminous objects because they don’t have their own light but can be seen by us when light falls on them. We can see our hand in the light but not in the dark.

2. **Reinforce the concept luminous objects and Non-luminous objects by making two columns on the board and ask students to fill in examples of each. (some examples have been provided)**

<table>
<thead>
<tr>
<th>Luminous objects</th>
<th>Non-luminous objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>sun, stars, candle, torch, light bulb</td>
<td>book, shoe, mirror, moon</td>
</tr>
</tbody>
</table>

3. **To assess the students’ understanding of the concept of luminous objects and Non-luminous objects ask questions such as**

   a. *Is the moon a luminous object?*
   b. Answer: *It is not. The moon only shines because its surface reflects the light from the sun.*

4. **Demonstrate the difference between opaque, transparent and translucent objects by showing one of each object: opaque (book), transparent (water glass) and one translucent (a colored plastic bottle or frosted glass) and shine the light from a torch on them. Have the students’ note how the light behaves on each and write down their observations.**

5. **Explain the difference between opaque, transparent and translucent objects that:**

   a. Opaque objects do not allow light to pass through at all.
   b. Transparent objects allow all light to pass through.
   c. Translucent objects allow some light to pass through.
6. To assess students’ understanding of the opaque, transparent and translucent objects. Draw three columns on the board and ask the students to tell the things that can be listed in the opaque, transparent and translucent category.
CONCEPT 14: LIGHT PROPERTIES & BEHAVIOR – LUNAR ECLIPSE

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Explain the formation of shadows and eclipses (p. 34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 98 - 100</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Position of the earth in a lunar eclipse: only 17% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Draw the picture of earth, moon and sun on the board and clarify movement of planets and moon. Explain that earth rotates on its axis and also revolves (or moves) around the sun. And the moon revolves around the earth.

2. Perform an activity to demonstrate the movement of earth and moon:

   Ask three students to do a role play. Student 1 will play the role of the sun and stand still at the center. Have student 2 to play the role of the earth and revolve around student 1 (the sun). Have student 3 play the moon and revolve around student 2 (the earth).

3. Inform students that moon get its light from sun and its surface reflects the light from the sun.

4. To demonstrate a lunar eclipse make a diagram such as this on the board or on a chart. Explain: *Sometimes, the earth comes directly between the sun and the moon. This causes the shadow of earth to fall on the moon. The moon appears darkened as the earth’s shadow is cast upon it. This is known as a lunar eclipse.*

   ![Diagram of Lunar Eclipse](image)

5. Perform an activity to demonstrate the eclipse (see the picture to understand how to set it up):

   Give students two balls to hold. The larger ball will represent the earth and the smaller ball will represent the moon. You hold the torch which represents the sun.
Stand in front with the torch. Have the students with the large ball stand behind you and the student with the small ball stand in the end.

Point the torch towards them. The light of the torch will fall on the large ball only. The large ball will block out the light to the smaller one.

Ask students to explain what just happened. Conclude: *The earth blocked the light of sun on moon and caused a lunar eclipse.* It is the partial or total blocking of light of one celestial object by another. An *ECLIPSE* of the Sun or Moon occurs when the Earth, Moon, and Sun are aligned. The solar eclipse occurs when the moon comes in between the sun and the earth and Lunar eclipse occurs when the earth comes between the sun and the moon.

6. A shadow is the dark area that is formed when light is blocked by an opaque or a translucent object because light travels in a straight line. Now, place a book in front of a torch and then ask the student, can they see light at the back of the book? No, because book blocks the light forming a darker area behind known as shadow.

7. Take a tennis ball, a football and a torch. Place them in a way that face of the torch, tennis ball and a football are in straight line. Switch on the light of the torch and then see that the shadow of the tennis ball falls on the football, and from the football side we can only see the outline of the tennis ball. Hence, tennis ball acts as a moon and football as an earth, that’s why in solar eclipse we can only see the outline of the sun from the earth. However, in lunar eclipse earth comes in the middle of sun and moon, and the huge shadow of the earth falls on the moon, hence we cannot see the moon for some time in lunar eclipse.
CONCEPT 15:  LIGHT PROPERTIES & BEHAVIOR –  
VISIBILITY OF STARS AT NIGHT

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Differentiate between luminous and non-luminous. (p.34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pg 95</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>When asked to explain why the stars are visible at night: only 12% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Explain the visibility of stars through an experiment. Bring a torch and a small bulb. Explain to the students that in this experiment the torch represents the sun and the small bulb represents a star.

   Turn on both the torch and the bulb. Ask whether they can see the light of the bulb. The answer will be no.

   Turn off the torch, ask if they can see the light of the bulb. The answer will be yes.

   Ask the students why they couldn’t see light of the bulb earlier. Listen to their responses carefully. Explain that it’s because the light of sun is so strong that the light of bulb will provide diminished light. In the second situation, the same bulb provides ample of light to light up the whole room. This phenomenon happens as the brighter luminous object takes over the light of the less bright luminous object.

2. Explain that Stars are the luminous objects in our universe, they have their own light but they are very far from our earth. Sun is also a star but as it is near to our planet earth that’s why in the day time we can only see the light of the sun but at night when the sun shifts to the other part of earth, then we can only see the light of the far apart stars in our universe.
CONCEPT 16: SOLAR SYSTEM - SATELLITE

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Natural satellites in the solar system (p. 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>p. 132 - 135</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>Concept of natural satellites: 34% answered correctly</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Show the picture of solar system and satellites to the students. To help students understand the difference between natural and artificial satellite, explain the meaning of satellite.
   a. *A satellite is an object that revolves or orbits around another object in space.*

2. To help students understand the difference between artificial and natural satellite, show pictures and explain the vocabulary with meanings. A “natural satellite” is any astronomic body in space that orbits around a larger body e.g. *Moons are known as natural satellites because they orbit planets.*

An artificial satellite is made by people and launched into orbit using rockets and are called “artificial satellites”.

3. To improve students understanding about artificial satellite show pictures of different kinds of artificial satellites. Explain that there are currently over a thousand active artificial satellites orbiting the Earth and they all provide different information to the earth for example navigation satellite, weather satellite, earth observation satellite, communication satellite and International space station.

4. Ask the students to draw solar system on a paper and label it. Extend the task by instructing students to design their own satellite system and write down its purpose.
**CONCEPT 17: DICOT PLANTS**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Classify the flowering plants into two major groups and give examples of each group (pp. 32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>What does the assessment data tell us?</td>
<td>18% answered correctly the concept of characteristics of dicot plants</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Recall students’ prior knowledge about parts of a plant and structure of seed before teaching the classification of flowering plants.
   To reinforce, display a chart in class showing structure of a seed
   Show another chart displaying monocot and dicot seed plant.

   ![Dicots vs Monocots](image)

2. Explain the differences in seeds, flowers, leaves and plants of monocot and dicot seed plants
   Perform an activity by distributing seeds of maize, wheat, peas and grams among the students, ask them to note the differences.
   After getting their feedback, tell them that maize and wheat seeds are monocotyledonous and grams and peas seeds are dicotyledonous.
   Now ask the students to paste a monocotyledonous or dicotyledonous seed on a piece of chart paper, identify it and write its characteristics as explained in the chart.
**CONCEPT 18: SHADOWS**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Predict the location, size and shape of a shadow from a light source relative to the position of objects (pp. 34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 99 - 100</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>23% answered correctly the concept shadow formation at different times of the day.</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Before teaching the students about the concept of shadow, recall the differences between opaque, transparent and translucent objects. To observe their own shadow ask the students to stay infront of the light source (bulb/sun). Explain the students that shadow is formed when an opaque object is placed in front of a light source. Explain that the size and shape of shadow depend upon the position of object from the light source. To observe this fact use a torch and throw light on an opaque object from different directions. Ask the students to observe the changing size, shape and position of the shadow.

2. Ask the students to observe their shadow on a sunny day at different times and record their observations in the table. These shadows can be traced on the floor. Explain that the change in the size and position is due to the position of the sun (light source) in the sky due to the Earth’s movement.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Time</th>
<th>Size of Shadow</th>
<th>Position of Shadow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Assembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Break Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Science Period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Off Time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CONCEPT 19: ELECTRICITY AND MAGNETISMS

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Explain the production of static electrical charges in some common materials objects (pp. 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 112 - 114</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>24% answered correctly the concept of the storage of electric charges on the surface of objects.</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Reinforce the concept of Electricity & Magnetism through flash cards.
2. Recall that static electric charge is the study of charges when they are at rest.
3. Take a plastic comb and rub it with a woollen sweater. Bring the comb close to the small pieces of papers. Ask the following questions from students:
   a. What do they observe?
   b. Why do the pieces of paper cling to the comb?
   Tell them, it happens because comb and pieces of paper are both charged.
4. Assign the students another activity for home, to repeat the same process with a silk cloth and note their observations.
CONCEPT 20: ELECTROMAGNETISM

Tips for the teachers

1. Reinforce the concept of magnet & electromagnetism through a brainstorming session.
2. Explain that permanent magnet keeps hold of its magnetism all the time.
3. To let the students observe electromagnetism make a temporary magnet by passing electricity through a coil of wire wrapped around an iron nail. Switch on the current and the nail becomes a magnet; switch it off again and the magnetism disappears. Explain that temporary magnets like this are called electromagnets—magnets worked by electricity.
4. Name some devices and ask the students to classify the given devices as electromagnetic or non-electromagnetic devices.
   a. Electric fan, electric drill machine, chair, pencil, washing machine, radio, electric bulb, television, electric bill

<table>
<thead>
<tr>
<th>S.No</th>
<th>Electromagnetic Devices</th>
<th>Non-Electromagnetic Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
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<tr>
<td>6.</td>
<td></td>
<td></td>
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<tr>
<td>7.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Curricular reference
Explore different electromagnetic devices used in their daily life. (pp. 35)

Textbook reference
Pp. 115 - 118

What does the assessment data tell us?
25% answered correctly the concept of electromagnetic devices
CONCEPT 21: ELECTROMAGNETISM

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Describe the relationship between electricity and magnetism in an electromagnetic device (pp. 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 116 - 117</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>26% answered correctly the concept of electromagnetism</td>
</tr>
</tbody>
</table>

Tips for the teachers

1. Recall the concept of electricity and magnetism by showing them on the charts.
2. Explain that electricity and magnetism relationship is used in electromagnetic devices, used in daily life.
   a. Example: door bell and loudspeaker.
3. Perform the activity in class, turn on the radio / mobile in the class. Tell them that radio is an electromagnet device, when current passes through magnet of the device the speaker membrane vibrate and sound is produced.
4. Ask students to write names of devices in which phenomenon of electromagnetism is used.
**CONCEPT 22: SOIL**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Identify similarities and differences among the different types of soil (pp. 35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 125 - 126</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>23% answered correctly the concept of characteristics of different types of soil</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Display a chart in the class having properties of sand, clay and silt.
2. Explain that soil is the outer most layer of earth in which the plants grow.
3. Discuss properties of different types of soil, given in the chart.
4. Collect samples of different soil from different places and ask the students to classify their sample on the basis of the given properties.

<table>
<thead>
<tr>
<th>Soil textural group</th>
<th>Soil textural class</th>
<th>Feel by hand texturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse to very coarse</td>
<td>Sand, loamy sand</td>
<td>Gritty -- does not ribbon or leave a stained smear on hand</td>
</tr>
<tr>
<td>Moderately coarse</td>
<td>Sandy loam</td>
<td>Gritty -- leaves smear on hand, does not ribbon -- breaks into small pieces</td>
</tr>
<tr>
<td>Medium</td>
<td>Loam, silt loam, silt</td>
<td>Smooth and floury like, does not ribbon, breaks into pieces about 1/2 inch long or less</td>
</tr>
<tr>
<td>Moderately fine</td>
<td>Sandy clay, sandy clay loam, clay loam, silty sandy clay loam, silt clay, clay</td>
<td>Forms ribbon, clays form longer ribbons than clay loams. Clay loam feels gritty</td>
</tr>
</tbody>
</table>
**CONCEPT 23: SOLAR SYSTEM**

<table>
<thead>
<tr>
<th>Curricular reference</th>
<th>Describe the solar system and its planetary arrangement showing position of earth in our solar system. (pp. 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textbook reference</td>
<td>Pp. 132-135</td>
</tr>
<tr>
<td>What does the assessment data tell us?</td>
<td>20% answered correctly the concept of arrangement of planets in the solar system.</td>
</tr>
</tbody>
</table>

**Tips for the teachers**

1. Draw a sketch of the Solar System & paste on the writing board/wall of the classroom.
2. Show a chart containing unlabelled solar system and ask the students to label its different planets.
3. Draw figure of different planets on a paper, cut it and ask students to place them at their relevant places in the solar system on the board.
4. Ask students to make a model of solar system and present in the class.