

SINGLE NATIONAL CURRICULUM

GENERAL KNOWLEDGE GRADE I-III 2020

ONE NATION, ONE CURRICULUM



NATIONAL CURRICULUM COUNCIL,
MINISTRY OF FEDERAL EDUCATION AND PROFESSIONAL TRAINING, ISLAMABAD
GOVERNMENT OF PAKISTAN

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

CURRICULUM
GENERAL KNOWLEDGE
GRADE I-III
2020



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CHAPTER

01 INTRODUCTION

01 INTRODUCTION

GENERAL KNOWLEDGE CURRICULUM

Single National Curriculum for General Knowledge 2020 for Grade I to III is the result of an effort to review and revise the previous curriculum in line with modern trends and innovations in different fields. It is important to mention here that National Curriculum 2006 for General Knowledge was an integration of General Science, Social Studies and Islamiat. The subject of Islamiat was integrated in General Knowledge in Grades I and II and appeared as a separate subject from grade III onwards.

Keeping in view recommendations from different stakeholders, the government has taken the historic decision to introduce Islamiat (for Muslim students) and Religious Education (for minorities) as separate subjects from Grade I onwards.

As a result of this decision the Single National Curriculum for General Knowledge 2020 is now based on the themes and concepts from General Science and Social Studies.

This Curriculum for General Knowledge aims to provide our students with real life quality learning experiences which is based on inquiry and hands-on activities. It is comprised of concepts from General Science and Social Studies and Ethics:

- Knowledge of science is drawn primarily from the domains of life sciences, physical sciences, earth and space sciences;
- Knowledge of social studies is drawn primarily from the social sciences strands of history, geography, government, citizenship, economics, culture; and ethical values which are essence of Islam and common in all the religions.

1.1 AIMS OF GENERAL KNOWLEDGE CURRICULUM

This Curriculum is designed for the young students to develop basic knowledge, skills, values, interests, and attitudes that will lead them to productively learn and understand the aforesaid areas of knowledge more deeply in later grades. The main goal is to produce young critical thinkers, capable of understanding and evaluating information, developing knowledge, skills, values, positive attitudes, healthy habits, civic sense and making informed decisions.

This Curriculum has been developed with the following emphasis:

- Broadening the learning space (out of the classroom learning)
- Strengthening the interface with pre-primary and secondary school curricula
- Developing understanding of ethical values
- Integrating students' learning experiences with emphasis on patriotism and sustainable development
- Promoting life-long learning and enhancing 21st century skills
- Developing students' independent learning
- Enhancing interest and appreciation in society and curiosity in science & technology
- Putting emphasis on students' holistic development and providing them real life quality experience, based on inquiry and hands-on activities/experiences.

1.2 CURRICULUM DEVELOPMENT

Students in the early grades have a natural curiosity about the world, thus it is appropriate for them to start learning the basics of science and other disciplines at a young age. Early school education (Grades I-III) has traditionally been content-intensive which has hindered the development of effective thinking skills of students. The Single National Curriculum is based on content progression at early levels to prepare the students for conceptual learning at higher grades, supports students to meet International standards and equip them with 21st century skills.

1.3 GUIDING PRINCIPLES FOR THE CURRICULUM DEVELOPMENT

Consistent with the Nature of Learning:

The Curriculum is designed to stimulate students' curiosity and develop their interest in learning and to enable them to learn more about themselves and the world around them through activities. Young children are naturally inquisitive. They have a keen interest in the materials around them and move naturally into activities that involve manipulation of materials, exploration and discovery. Therefore, students in the early school years (Grades I-III) should nurture and extend this curiosity, so that they are able to question, explore and investigate with increasing levels of insight and skills.

Coherent:

This Curriculum has been designed to ensure that the ideas taught within a grade level have a logical and natural connection with each other and with those of higher grades. Efforts have been made to introduce concepts, skills, and attitudes in a well-integrated manner with progressive articulation appropriate to each grade level. This progression is intended to prepare students to understand and use more complex concepts and skills as they advance through the learning process.

Comprehensive and Developmentally Appropriate:

This Curriculum considers the psychological and social readiness of students. It builds from concrete experiences to abstract understanding. Therefore, it focuses on providing experience with concepts that students can explore and understand in depth to lay the foundation for future learning experiences.

The Curriculum is designed to help students develop attributes, essential for 21st century in all areas of the physical, emotional, social, linguistic, aesthetic, and cognitive development. It also emphasizes on:

- Active exploration of the environment;
- Self-directed and hands-on learning activities;
- Balance between individual and group activities;
- Regular and supportive interaction with teachers and peers; and
- Balance between active movement and quiet activities.

These experiences during the early years of school not only influence their later functioning in school but also have effects throughout the life.

Feasible:

This Curriculum can be taught with easily available resources and materials. Teacher's Guide Manual is strongly recommended, which will contain sample lessons on each topic for each grade level. The Teacher's Guide Manual is a document that will grow as teachers add exemplary lessons aligned with the new Curriculum while keeping in view the inquiry approach. In addition, activity-based workbook and other print resources are also recommended.

Useful and Relevant:

Efforts have been made to ensure that General Knowledge Curriculum adopts an integrated approach across disciplines that are socially relevant, intellectually engaging, and personally meaningful to students. The Curriculum contents relate directly to students' needs and interests. Such relevance of content areas to other endeavors will enable students to transfer skills gained from one area of instruction into other subjects and their lives outside the classroom. Therefore, this Curriculum provides skills in a context that enables students to experience the joy of learning.

Effective Assessment Practices:

Students' achievement of the standards and outcomes in this Curriculum are to be best assessed by using a variety of assessment tools and methods. Performance assessments are particularly appropriate to evaluate students' mastery of thinking processes and problem-solving skills. Teachers in conjunction should use variety of classroom assessment approaches with the Criterion Reference Tests. Observation of students engaged in instructional activities is highly recommended to assess students' skills as well as attitudes towards learning. However, nature of the questions posed by students will also provide an important evidence of their understanding which must be encouraged by the teachers.

Reflective of Successful Teaching Practices:

This Curriculum provides broader guidelines for teachers whereby they will accept the responsibility for actively supporting student's development and to provide opportunities for students to acquire important knowledge and skills. Teachers will use their knowledge of child development and learning to identify the range of activities, materials, and learning experiences that are appropriate for a group or individual student. The guidelines also describe various aspects of the teachers' role in making decisions about classroom practices.

Critical Thinking and Problem Solving Skills:

Higher-order thinking skills are developed in the process of teaching subject-matter knowledge within application contexts that call for students to relate what they are learning to their lives outside of school by thinking critically and creatively about it or by using it to solve problems or make decisions. Similarly, learning through role-plays, demonstrations, and investigative activities is vital to the early development of both the mind and the body. This Curriculum, therefore, emphasizes student exploration through inquiry, and thereby calls for a shift from teacher-centered to learner-centered approach.

Meaningful Learning and Engaging:

Children learn best when they have real materials they can manipulate. Through direct sensory involvement with their environment, children learn about topics that are personally meaningful and interesting. Teaching children requires the use of real and relevant materials and experiences. Discovering what works best for all students requires knowledge about each student, various learning styles of the students and clear learning outcomes.

Similarly, effective instructions engage students actively in enjoyable learning experiences. In the early grades, children are forming attitudes and habits for learning. Students are more likely to learn and remember new skills and concepts when they use them in a meaningful context.

Therefore, this Curriculum emphasizes the importance of teaching instructions that should maximize students' potential and enables them in understanding of the intertwined nature of learning.

CHAPTER



CURRICULUM FOCUS

Primary focus of General Knowledge Curriculum is to develop students' interest and creativity through everyday experiences and investigations that promote the acquisition of thinking skills as well as the development of healthy attitudes and moral values.

2.1 INQUIRY-BASED CURRICULUM

When students use inquiry to discover content, they not only learn a great variety of facts and concepts, but they also learn how these are related to each other and how it is that we human beings come to understand our world and add to the great body of information, we call knowledge.

Inquiry-based approaches to the early childhood education focus on "student constructed" learning as opposed to "teacher-transmitted" information. An Inquiry-based Curriculum promotes inquiry approaches in teaching, if the development and enhancement of students' ability to think sequentially, critically, and creatively is an expected outcome. Therefore, this Curriculum reflects a paradigm shift from the characteristics of traditional approaches to Inquiry-based approach.

2.2 THE STUDENT-CENTERED CURRICULUM

Student is the centre of learning. Learning experiences need to be relevant to students' daily life. Students are more interested and easily engaged in the learning, which uses everyday materials, when they can make decisions about issues that relate to their immediate environment and to discover 'how things work'. Therefore, this curriculum is designed to be a Student-centered curriculum as opposed to the traditional teacher-centered one, whereby teachers' role is desired to be shifted from a traditional teacher to a facilitator.

2.3 AN OUTCOME-FOCUSED CURRICULUM

Outcomes-focused is a method of curriculum design and teaching that focuses on what students can actually do after they are taught. This curriculum is outcomes-focused and is intended to specify a set of well-defined outcomes in the form of Knowledge, skills, attitudes and values. These Curriculum outcomes have been presented hereunder, for both students and teachers to achieve. These outcomes provide a basis for study programs that will challenge all students and teachers equally and offer them opportunities to achieve these outcomes. However, these outcomes can be attained by following the teaching & learning process explained in this document.

CHAPTER



**CONTENT
ORGANIZATION**



General Knowledge Curriculum is organized around themes that students can relate in their everyday experiences. It is also based on commonly observed phenomena in nature & environment, geography, socio-cultural norms, moral values and practices. The basic aim is to enable students to appreciate the links between different topics and thus allow the eventual integration of ideas.

Therefore, a careful selection of topics/ themes have been made to promote greater understanding instead of covering a “little bit of everything”. The content is organized into standards, which are then divided into themes. The topics under each theme are not to be viewed as compartmentalized blocks of knowledge. In general, there are no clear boundaries between these themes. There may be topics common to different themes for example “Changing World from Past to Present” can be included in theme of both Science and Social Studies. Hence, a conscious effort is needed to demonstrate the relationship between themes whenever possible while writing a textbook. Nevertheless, all of the themes identified are drawn from the standards for General Science Curriculum and Social Studies Curriculum.

Each standard consists of various learning areas or topics, which have intended learning outcomes. Whereas learning outcomes are statements that describe what knowledge, skills and attitudes students are expected to demonstrate as a result of their cumulative learning experiences at each grade level. The learning outcomes for a particular learning area are provided to form a strong foundation for meeting the Benchmarks and Standards for the entry to Grade IV for Social Studies & General Science.

3.1 KNOWLEDGE

Students will develop knowledge and understandings of the following concepts and apply their understandings to interpret, integrate, and extend knowledge.

ETHICS AND VALUES

Standard 1: Students identify aspects of good character and good manners to practice them in their lives.

Benchmarks Grade I-III

Students will:

- 1.1 identify aspects of good character using polite words, speaking the truth, practicing kindness, forgiveness and honesty.
- 1.2 understand the importance of kindness, compassion and sharing with others and apply in their daily lives.
- 1.3 demonstrate etiquettes of eating and drinking.
- 1.4 recognize that all human beings should be equally treated with respect.
- 1.5 understand and practice community welfare activities.
- 1.6 resolve conflicts and disputes through peaceful ways

PROGRESSION BETWEEN THE LEVELS

GRADE I	GRADE II	GRADE III
• Good qualities • Respecting family members • Greeting others • Practicing good qualities • Eating manners • Table and bathroom etiquettes	• Sharing things • Way of helping others • Need to respect all people • Ways to respect all people • Avoid hurting others • Ways to reduce the hurt • Forgiving others • Fairness and Unfairness • Promoting fairness	• Common conflicts/ disagreements • Causes of conflicts/ disagreements • Impacts of conflicts • Resolving conflicts • Preventing conflicts/ disagreements

RESPONSIBLE CITIZENSHIP

Standard 2: Students demonstrate responsible citizenship by respecting rules, recognizing rights and responsibilities of citizens and appreciating diversity at local and global level

Benchmarks Grade I-III

Students will:

- 2.1 demonstrate disciplined behavior at home, school, on the road and in the playground.
- 2.2 identify name and the functions of important places in the neighborhood.
- 2.3 identify and practice responsible behaviour to keep their home and surroundings clean and green
- 2.4 recognize and identify rights and responsibilities of good citizen
- 2.5 appreciate diversity at local and global level

PROGRESSION BETWEEN THE LEVELS

GRADE I	GRADE II	GRADE III
• Rules of playing games • What is neighbourhood? • Key places in neighbourhood • Kinds of houses • Cleaning homes • Places of worship for Muslims and others • Respect for worship places • Obeying rules	• Roles and responsibilities of government • Right and responsibilities of people/ citizen • Sustainable consumption of water • Ways to save water and land	• Individuals and community • Key problems ◦ Need of government ◦ Government and People ◦ Good citizenship

DISCOVERING SELF AND IMMEDIATE ENVIRONMENT

Standard 3: Students recognize their own needs, those of others and understand their role within their community and environment

Benchmarks Grade I-III

Students will:

- 3.1 introduce themselves by mentioning their name, their family members, friends, interests and places around them.
- 3.2 make decision about their future keeping in view their interests.
- 3.3 identify the ways of keeping oneself clean and demonstrate healthy habits of personal hygiene.
- 3.4 identify the causes of diseases and list ways to avoid germs.
- 3.5 understand need of staying safe in daily life situations.
- 3.6 identify the safety rules and demonstrate road sense.

PROGRESSION BETWEEN THE LEVELS

GRADE I	GRADE II	GRADE III
• Introduction to self • Importance of cleanliness • Way of cleanliness • Cleanliness and health • Family members • Important achievements of their Parents • Different games • Common traffic rules • Safety rules and road sense	• Lives in the villages and cities • Key characteristics of a village and city life • Comparison of village and city life • Eid-ul-Fitr • Eid-ul-Azha • Other cultural and religious festivals • Places for animals	• Changes in the natural environment • Conserving the natural environment • Factors for healthy living • Past and present things • Differences in past and present things • Indoor safety • Outdoor safety

PATRIOTISM AND KNOWLEDGE OF COUNTRY

Standard 4: Students recognize the respect and value of their country Pakistan, its map, its heroes and the significance of its flag.

Benchmarks Grade I-III

Students will:

- 4.1 demonstrate love and loyalty towards their country.
- 4.2 recognize national flag and understand symbolism in it.
- 4.3 recognize the map of Pakistan and learn the full name of the country, its provinces and areas (AJK, GILGIT BALTISTAN and ICT).
- 4.4 identify the distinguished personalities of Pakistan like Quaid-e-Azam and Allama Iqbal.

PROGRESSION BETWEEN THE LEVELS

GRADE I	GRADE II	GRADE III
- Name the country - Date of existence - Flag of Pakistan. - Significance of the National Flag	- Map of Pakistan - Provinces of Pakistan - Significance of the National Flag	- Quaid-e-Azam: events and contributions - Allama Iqbal: events and contributions

GOODS AND SERVICES

Standard 5: Students understand the concept of interdependence through recognition of the role of goods and services in our lives and the need for respecting all occupations.

Benchmarks Grade I-III

Students will:

- 5.1 identify people from different occupations and demonstrate respect for them.
- 5.2 identify different modes of transportation.
- 5.3 demonstrate disciplined behavior at the public places e.g. bus stop, railway station, airport etc.
- 5.4 differentiate among natural, human and capital resources.

PROGRESSION BETWEEN THE LEVELS

GRADE I	GRADE II	GRADE III
- People in school - Activities in school - Means of transportation - Activities at airport, railway station, bus stop	- Common professions in the village/ city - Processing (making products) - Common professions/ occupations - Professions/ occupations they like	- Natural resources - Human resources and capital resources - Goods and services - Buyers and sellers - Scarcity

LIFE SCIENCES

Standard 6: Students begin to understand and demonstrate curiosity about basic concepts and processes of the living world around themselves.

Benchmarks Grade I-III

Students will:

- 6.1 recognize the difference between living and non-living things.
- 6.2 describe senses, body parts and recognize their functions.
- 6.3 identify the causes of illness and ways to stay healthy.
- 6.4 differentiate between different plants and animals and classify and recognize them as a major source of food.
- 6.5 name major crops of Pakistan and their by products.

PROGRESSION BETWEEN THE LEVELS

GRADE I	GRADE II	GRADE III
- Major parts of the human body and their function - Senses (touch, taste, smell, sight and hearing) - Common plants and animals - Need of plants and animals - Importance of plants and animals - Living places of animals - Wild and domestic animals - Food for animals - Caring for things around us	- Major parts of a plant and their functions - Plant and seeds - Growth and change in plants. - Uses of plants - Animals on land and in water - Growth and change in animals - Major crops in Pakistan - Live stock	- Habitats - Kinds of habitats - Eco system - Characteristics of habitats - Human activities and the natural habitats - Life cycle of some animals and plants - Plants' and animals' food - Basic food groups - Balanced diet

PHYSICAL SCIENCES

Standard 7: Students recognize simple forms of Physical phenomena (matter & energy) and identify everyday uses of them.

Benchmarks Grade I-III

Students will:

- 7.1 understand the physical effects of light (shadows and directions)
- 7.2 recognize states of matter by observing their basic physical properties
- 7.3 recognize that energy exists in different forms and uses
- 7.4 recognize and identify simple machines and their uses .
- 7.5 identify major inventions.
- 7.6 identify push and pull as a force and its effects on object

PROGRESSION BETWEEN THE LEVELS

GRADE I	GRADE II	GRADE III
Slow and fast means of transportation	- Common sources (natural and human made) - Uses of heat and light - Methods of producing heat. - Intensity of heat and light - Importance of resources - Natural materials - Human made objects	- Role of sunlight in the Formation of shadows - Sunrise and sunset - Using the sun for guidance - States of matter - Observing matter - Common sources and uses of energy - Common inventions - Effects of inventions on lives - Simple machines - Push and pull as a force - Uses of force - Force and motion

EARTH AND SPACE SCIENCE

Standard 8: Students understand the physical features and environmental changes of Earth. They recognize Earth as a planet and begin to explore its relationship with celestial bodies in sky.

Benchmarks Grade I-III

Students will:

- 8.1 identify features of earth and other heavenly bodies like sun, moon and the stars.
- 8.2 importance of natural sources and understand importance of their conservation
- 8.3 define the term "pollution" and name its types.
- 8.4 recognize their own role in reducing pollution in their environment.

PROGRESSION BETWEEN THE LEVELS		
GRADE I	GRADE II	GRADE III
• Shape of earth • Earth's feature • Sun, Moon and stars • Objects during day and night	• Land • Living and non-living things • Some natural resources • Importance of natural resources • Water in our lives • Sources of water • Uses of water • Shortage of water • Wastage of water and land • Problems caused by wastage of water and land	• Pollution • Protecting the endangered animals • Extinct animals • Natural disaster

Note: By the end of Grade III, students will have essential knowledge of Science and Social Studies that will become foundation of learning for Grade IV. Science and Social Studies will be introduced as separate subjects from grade IV.

3.2 SKILLS

Students will develop the skills required for inquiry, solving problems, communicating ideas and results, for working collaboratively, and making informed decisions.

Students use a variety of skills in the process of answering questions, solving problems, and making decisions. While these skills are not unique to General Knowledge, they play an important role in development of systematic understandings and in the application of the same to new situations. However, the listing of skills is not intended to imply a linear sequence or to identify a single set of skills required in each investigation. Every investigation and application has unique features that determine a particular mix and sequence of skills involved thereto.

These will assist in the development of skills with their increasing scope and complexity of application in higher grades.

- a. **Initiating and Planning:** These are the skills of questioning, identifying problems, and developing preliminary ideas and plans.
- b. **Performing and Recording:** These are the skills of carrying out a plan of action, which involves gathering evidence by observation and, in most cases, manipulating materials and equipment.
- c. **Analyzing and Interpreting:** These are the skills of examining information and evidence, processing and presenting data interpreting, evaluating, and applying the results.
- d. **Communication and collaboration:** Communication skills are essential at every stage where ideas are being developed, tested, interpreted, debated/ discussed, and agreed upon. Collaboration skills are also important, as the development and application of inductive and deductive ideas are collaboratively processed both in the society and in the classroom.

3.3 ATTITUDES AND MORAL VALUES

Students will be encouraged to develop attitudes that support the responsible acquisition and application of the knowledge to the mutual benefit of self, society, and environment.

Attitudes refer to generalized aspects of behavior that are modeled for students by example and reinforced by selective approval. Attitudes are not acquired in the same way as skills and knowledge. They cannot be observed at any particular moment, but are evidenced by regular, unprompted manifestation over time. Attitude development is a lifelong process that involves the home, the school, the community, and the society at large.

The development of attitudes and moral values generally occurs through the following stages where teacher has a key responsibility:

- being aware of the importance and the need for developing attitudes and values.
- giving emphasis to these attitudes and values.
- practicing and internalizing these attitudes and values.

The attitudes outcome focuses on the following ways in which school education can contribute to attitudinal growth of the young students. These have been articulated as general statements that have guided the development of the learning outcomes, which also provide links to science & technology, society and environment:

3.3.1 Appreciation of interest in science, social studies and ethics:

Students will be encouraged to appreciate the role and contribution of science, technology & behavioral science in their lives, to be aware of their limits and impacts. Students will be encouraged to develop enthusiasm and continuing interest in the study of Science, Social Studies and Ethics. General Knowledge of these disciplines will contribute to attitudinal growth when students are involved in discussion and activities that stimulate their interest and curiosity, thus increasing their motivation for learning and encouraging them to become interested in further education.

3.3.2 Inquiry:

Students will be encouraged to develop attitudes that support inquiry, problem solving, and decision-making. At early grades students will be engaged in partial and full inquiries that are within their developmental capabilities. It can only contribute to attitudinal growth when students are provided with the opportunities for development, reinforcement, and extension of attitudes, which encourage inquiry such as open-mindedness respect for reason and evidence, initiative, perseverance, creativity and inventiveness.

3.3.3 Collaboration:

Students will be encouraged to develop attitudes that support collaborative activities. Students are provided with opportunities to work in groups on real-life problems, thus developing a sense of interpersonal responsibilities, openness to diversity, respect for multiple perspectives, and an appreciation of the role, effort and contribution of others.

3.3.4 Stewardship:

Students will be encouraged to develop responsibility for the application of their knowledge in relation to Science & Technology, Society and Environment. Education in these disciplines can contribute to attitudinal growth, when students are involved in activities that encourage responsible behavior towards fellow-beings, living things and the environment, and when students are encouraged to consider issues related to sustainability and harmony in the society from a variety of perspectives.

3.3.5 Safety:

Students will be encouraged to demonstrate a concern for safety in their daily life, be at school or otherwise. School education can contribute to attitudinal growth when students are encouraged to assess and manage potential dangers and apply safety procedures in their daily life, thus developing a positive attitude towards safety.

CHAPTER



**LEARNING THEMES
AND STUDENTS'
LEARNING OUTCOMES**

4.1 GRADE – I

4.1 GRADE – I LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES		
THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
My Self • Introduction to Self • Good Qualities	All the students will be able to: • describe themselves briefly. For example, their name, age, likes and dislikes, games, favourite food, what they want to be when they grow up.	• Work in groups and share information about themselves with group members.
	• identify good qualities in themselves (telling the truth; respecting elders and listening to their advice; getting up early in the morning etc). • recognize the good qualities of others.	• In pairs identify first their own and then their partner's good qualities. Share the findings with their class fellows.
	• identify the ways in which they are same and different from others with respect to likes and dislikes.	• Work in pairs, and compare their likes and dislikes of food, colours, sports etc.

4.1 GRADE - I

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
My Body - Major parts of the Human body and their Function - Senses (Touch, Taste, Smell, Sight and Hearing)	- name major parts of the human body (eyes, nose, ears, mouth, arms, feet and legs) - identify the functions of various body parts	- Draw their body parts and name them. - Group Work: Match the given cut outs of the body parts with their functions
	- name the five senses - identify their body parts which help them to taste, touch, smell, hear and see	Name things they can see, taste, smell, hear and touch
	identify the sensory descriptions of each of the five senses (Taste: sweet, sour, bitter, salty; Touch: smooth, hard, soft, rough, cold, warm, hot; Hearing: loud, soft, high, low; Sight: bright, dim and recognize colors; Smell: pleasant, unpleasant)	Categorize various tastes, sounds, smells etc from the given items.
Keeping Ourselves Clean - Importance of Cleanliness - Ways of Cleanliness - Cleanliness and Health	identify the ways by which they can keep themselves clean (washing hands before and after meals and after using the toilet, clipping/trimming nails, brushing teeth daily, taking bath regularly etc.)	- Demonstrate through role play the steps for washing hands and brushing teeth. - Practice and demonstrate cleanliness in the classroom by keeping their seat desk and surrounding area clean.
	- recognize the importance of keeping themselves, their clothes and surroundings clean for their health. - identify the causes of illness - identify the unhealthy habits that cause illnesses (like cough and diarrhea etc.) - recognize the fact that germs can cause diseases and list ways to avoid germs.	- Design messages related to health and cleanliness and share with family. (link to art work) - Narrate personal experiences of students and teachers regarding any illness caused by unhealthy food/ environment. - Videos can be shown to elaborate the spreading of germs.

4.1 GRADE - I

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
My Family and Friends - Family Members - Respecting Family Members - Important achievements of their Parents	- identify some family members (parents, brothers and sisters, grand-parents, aunts, uncles and cousins (paternal and maternal). - recognize that they should respect all family members and friends. - list their friends at home and school - narrate the special qualities of some of their friends.	- List family members that live with them. - Name their favorite family member and share the reason. - Draw a family tree - Talk about their favourite friends and share the reason why?
	- talk about things that their parents did differently in past from today - talk about some differences in the way things were done in the past	Conduct an interview with parents or grandparents to find out how things were different in the past (food, living style, dressing, means of communication, transportation festivals etc.) and share with their classmates.
Games and Rules - Different Games - Rules of Playing Games	- name the games they like to play. - recognize the importance of collaboration by participating in group activities and games.	- Identify different games from the given pictures. - Participate in team based games
	- define rules - recognize the importance of following rules. - observe and identify the rules when playing a game. - understand the importance of playing games and exercise for better health.	Identify at least three rules of students' favourite game.

4.1 GRADE - I

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Neighbourhood - What is neighbour hood? - Key Places in a neighbourhood - Kinds of Houses - Cleaning Homes	- recognize that many families living in a locality make a neighborhood. - describe their neighbourhood (in terms of people, farms, shops, streets, parks and playgrounds etc.). - identify key places on a pictorial map of a neighborhood. - describe their home. - identify the different kinds of houses (bungalow, mud house, hut, and apartment). - identify what makes the neighborhood clean or dirty. - understand and practice the idea of keeping their homes and neighborhood clean.	- Prepare a checklist of 'how I am helpful to keep my home, school and neighbourhood clean'. - Make a waste paper basket for the class. - Draw a picture of their house and colour it.
Places of Worship in the Neighbourhood - Places of worship for Muslims and others - Respect for worship places	- identify the Masjid in their neighborhood as a place of worship for Muslims - inquire about other places of worship (church, temple, gurdwara etc) - recognize that they should respect all places of worship and all religions	Interview any elder to get information about places of worship of different religions.

4.1 GRADE - I

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Our Country: Pakistan - Name of the Country - Date of Existence - Flag of Pakistan - Significance of the National Flag	- tell the full name of our country and date of existence. - recognize that all the countries have a flag - draw the flag of Pakistan. - identify what the colours and symbols on the flag represent.	- Gather any information about Pakistan and share with the class. - AJK students need to recognize and draw their own flag along with the country (Pakistan) flag. - Ask the students if they know anyone from a different faith than their own to understand the significance of the white part of our flag and share in the class and assembly
School - People in School - Activities in School - Obedying Rules	- tell the name and location of their school. - identify the people they interact with in school (teachers, students, principal, service providing staff etc.)	
	- talk about the activities they engage in at school. - share the rules they follow in the school. - understand and follow the class and school rules. - understand why following the rules is important	make at least five school rules to follow them with the help of the teacher.
	- appreciate diversity by understanding that they make different friends in school and these friends can be from different social and religious backgrounds - recognize that they should respect everyone in their school (teachers, class fellows, service providing staff etc. regardless of their faith ethnicity and social background) - Know the importance of keeping their school clean.	- Guess Who am I? Activity: identify school personnel through oral prompts or flashcards. - Plan a cultural show in the class.

4.1 GRADE - I

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Getting Around Transportation - Means of Transportation - Slow & Fast Means of Transportation - Activities at Airport, Railway Station, Bus stop etc.	- identify the means of transportation which people use. - differentiate between slow & fast means of transportation.	- Bring pictures/ toys of fast and slow means of transportation and share the difference. - Arrange the pictures from slowest to fastest means of transportation.
	- identify the places where buses and trains stop, aeroplanes land and ships berth. - describe the activities that take place at a bus stop, railway station, airport, and harbour.	- Show videos related to airport, bus stop, railway station and harbor. - Observe the activities happening at these places to share with the class.
Traffic Rules - Common Traffic Rules - Safety Rules and Road Sense	identify some traffic rules	
	identify the safety rules they should follow while walking on the road, crossing a road, traveling by a bus etc.	Recite the poem on traffic signs wearing traffic signs masks.
Good Manners and Habits - Greeting Others - Practicing Good Qualities - Eating Manners - Table and Bathroom Etiquettes	greet others by saying Assalam o Alaikum, Hello, Good Morning etc.	- Make a chart of classroom rules (using courtesy words) - Use please and thank you when asking for and receiving something and sorry for mistakes and excuse me to address.
	- identify and list various aspects of good character (punctuality, speaking politely, kindness, honesty and truthfulness). - recognise the importance of good manners. - demonstrate etiquettes of eating (don't waste food, eat with clean hands, don't drop food around).	- Divide students in groups and assign one topic of good character for role play with the help of teacher. - Narrate stories about how and when they shared something with a friend or vice versa. - Talk about the importance of sharing with others - Arrange a class activity where students share with each other. (food, stationery, books etc.)

4.1 GRADE - I
LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES
KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
	- Understand the hazards of eating unhealthy food. - recognize and identify the etiquettes of using the washroom.	Work in groups and make a list of some additional good manners.
Things Around us (Plants and Animals) - Common Plants and Animals - Need of Plants and Animals - Importance of Plants and Animals - Living Places of Animals - Wild and Domestic Animals - Food for Animals - Caring for Things around Us	- recognize living and non-living things around them - identify the plants they see around them. - recognize the differences between the plants they see around them.	- Observe and differentiate between living and non-living things - Visit school (or any other) garden in groups to compare different types of plants and share the similarities and differences with the rest of the class.
	recognize the importance of plants/ trees as a source of food, shade, and shelter	Teacher to discuss importance of these plants and trees.
	- identify the things around them that are made up of plants/ trees - identify some common domestic and wild animals	
	identify the differences between common domestic and wild animals in terms of physical features	Draw or bring picture of your favorite pet animal and tell your class fellows how you take care of it.
	identify the food which different animals eat.	
	recognize the importance of animals as a source of food, joy and transport.	

4.1 GRADE – I
LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES
KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
	- identify the homes of animals (nest, burrow etc.) - differentiate between animals that can and cannot be kept at home with reasons.	
	identify measures for better care of domestic and wild animals and plants.	
Earth and Sky - Shape of the Earth - Earth's features	- identify Earth as a planet. - recognize and identify the shape of the Earth. - recognize that the Earth is covered with land and water.	- Draw Earth and identify the land and water portion. - Observe the globe to understand the shape of earth.
Objects in the Sky - Sun, Moon and Stars - Objects during Day and Night	identify objects in the sky during day and night.	Draw Sun, moon and stars on a paper or chart.
	- recognize that the sun shines very brightly during the day and gives us heat and light. - recognize that the moon and stars shine at night.	Observe the objects in the sky during the day and the night

4.2 GRADE – II

4.2 GRADE – II LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES		
THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Our Country: Pakistan - Map of Pakistan - Provinces of Pakistan - Significance of the National Flag	All the students will be able to: - recognize the map of Pakistan. - name the provinces and areas (AJK, GB and ICT) of Pakistan. - depict the cultural diversity of all provinces and areas of Pakistan. - recognize the significance of National flag.	- Collect pictures depicting the cultural diversity of Pakistan - Make a collage - Organize a presentation on different cultures of Pakistan
Villages and Cities Lives in the villages and cities: - Key Characteristics of a Village and City - Comparison of Village and City Life - Common Professions and Occupations in the Village/ City	- recognize that the people of Pakistan live in villages and cities. - identify key characteristics of a village (buildings, facilities, environment and the work people do)	Visit any nearest village/ Urban area/ town/ city and describe its key characteristics.
	- identify key characteristics of a city - compare village and city life	indicate choice of place to live and give reasons
	identify some common professions and occupations of a village/ city (tailor, butcher, cobbler, musician etc.)	
Role and Responsibilities - Role and Responsibilities of Government - Rights and Responsibilities of People/ Citizen.	- define government - identify some goods and services that government provides for the people (health, education, clean water, infrastructure, utilities, safety and security etc.)	Role Play: Dialogue between a government officer and a citizen regarding roles and responsibilities of government and other citizens.

4.2 GRADE – II

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
	- list three rights of the citizens (Right to food, free education, protection, equality and health care) - understand that everyone has a right to practice their own religion freely	
	- identify their responsibilities with respect to each right (careful use of food, water and other resources, regularity and hard work towards education, taking care of surroundings and hygiene, treating everyone equally, and following rules and regulations) - appreciate the rights and responsibilities of individuals within their community and in the wider world	
Religious Festivals in Pakistan - Eid-ul-Fitr & Eid-ul-Azha - Other Cultural and Religious Festivals	- understand why Muslims celebrate Eid-ul-Fitr and Eid-ul-Azha - describe how people celebrate Eid-ul-Fitr and Eid-ul-Azha	- Arrange Eid-Milan Party at school - Charity campaigns may be organized to inculcate the concepts of sharing and sacrifice
	identify other religious and cultural festivals of other faiths celebrated in Pakistan	Collect information about religious festivals of different faiths and share with the class
The Natural Environment Land: - Living and non-Living Things - Some Natural Resources - Importance of Natural Resources	recognize that the natural environment comprises of living and non-living things	Divide the students into groups who will select one natural resource each (within the school) and ask them to discuss and share the ways to conserve that (Sustainable consumption of resources)

4.2 GRADE – II

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
	- name some natural resources of land, water and air. - recognize the importance of natural resources. - list the ways in which people use natural resources	Visit the whole school and make list of living and non- living things.
Water - Water in our lives - Sources of Water - Uses of Water - Shortage of water - Sustainable consumption of water	- appreciate that life begins with water. - recognize the importance of water for living things.	
	- identify the natural sources of water. - identify the main sources of water in their locality.	- Integrate the following activities with ART period - Design a poster for careful use of water. - Draw main sources of water in their locality.
	recognize the importance of the resources of water.	
	narrate how water gets from a natural source to the taps in their home.	Flow charts, pictures, models and videos can be used.
	- list the daily activities in which they use water. - recognize that clean water should be used for drinking and cooking purposes - understand that boiling, filtering etc. are methods of purifying water - recognize that there are some areas that always face shortage of water	Role play: - Design a role play to create awareness among the students regarding hazards of using unclean water - Get information about the areas in the country where people are facing shortage of water

4.2 GRADE – II
LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES
KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Plants - Major Parts of a Plant and their functions - Plant and Seeds - Growth and Change in Plants - Uses of Plants	- identify major parts of a plant. (root, stem, leaf and flower) - list the functions of root, stem, leaf and flower	- Soak a few bean seeds in a jar, fill with mud and observe over a few weeks - Record/draw their findings. How did the seed change into a plant?
	identify different kinds of leaves found around them	- Collect different types of leaves and paste them on a chart with names - Trace the outlines of leaves on a chart and colour them - Cut out the coloured leaves and display in the classroom
	- identify the roots that are eaten by people - name a few plants around them which have flowers, and which do not have flowers	
	- identify the fruits which have seeds in them - recognize that some plants grow from seeds while others grow from stems or roots	Bring some plants or their pictures which grow from seeds/ stem/ roots
	identify that soil, light, air and water are needed to grow a plant	- Take two pots with growing plants. Provide one with all the factors necessary to grow while keep other away from light, water etc. - Observe the plants over time and record their findings
	highlight the importance of plants for climate change	Students to conduct a plantation activity in school and take care of the plants they have planted

4.2 GRADE – II
LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES
KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Animals - Animals on Land and in Water - Growth and Change in Animals - Places for Animals	list the animals they see in their surroundings (land and water)	
	- recognize the animals that live on land are different in features from those that live in water - recognize that all animals have young ones that grow into adults	- Visit the zoo/ farm /animals shed and observe what different animals look like? Share your findings with the class. - Alternatively cut out pictures of different animals and paste them on a chart to make a zoo.
	name different animals and their young ones. For example, horse and foal, cat and kitten, dog and puppy, hen and chick, frogs and tadpoles, butterflies and caterpillars etc.)	Color the pictures of animals and their young ones.
	identify that some young animals do not look like their parents (frogs and butterflies etc.)	Match pictures of young animals with their parents
	list the animals that feed their young ones and look after them	
	name different places where animals live (water, forests, mountains, deserts etc.)	

4.2 GRADE – II

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Uses of Earth's Resources - Importance of Resources - Natural Materials - Human Made Objects	recognize that natural resources are essential for survival of human beings (land for farming, river/ sea for fishing, air for breathing etc.)	- Soak a few bean seeds in a jar, fill with mud and observe over a few weeks - Record/ draw their findings. How did the seed change into a plant?
	- differentiate between the materials that are found naturally and the objects that are made from these materials by humans - recognize that people manufacture different things from natural resources to serve humanity	Group work: Take a round of the school and list natural and man-made resources.
Agriculture and Live Stock. - Major Crops in Pakistan - Processing (Making Products) - Live stock	- list the major crops in Pakistan. - recognize that people process the crops they grow for making products (cotton to thread to cloth to garments). - recognize and identify the importance of livestock.	- Collect the seeds of major crops for identification. (wheat, maize, rice, cotton and pulses.) - Collect pictures and make a list of livestock.
Conservation of the Earth's Resources - Wastage of Water and Land - Problems caused by Wastage of Water and Land - Ways to Save Water and Land	identify the ways in which human beings waste water.	
	- identify problems caused by wastage of water. - suggest ways to save water	Organize a speech contest/ poster making competition on conservation of resources
	recognize the importance of forests for human beings	
	- identify the ways in which the land is destroyed due to human activity (deforestation). - suggest ways to reduce deforestation.	

4.2 GRADE – II
LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES
KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Heat and Light - Common Sources (Natural and Human made) - Uses of Heat and Light - Methods of Producing Heat - Intensity of Heat and Light	- identify sources of heat and light in their homes, schools and surroundings. - group sources of light and heat into natural and human made.	- Observe & identify the light sources and list them. - Rub hands and observe how heat is produced.
	identify and describe methods of producing heat (burning and rubbing etc.)	
	list the uses of heat and light.	
	recognize that the intensity of heat and light is felt more as they come nearer to the source.	
Helping Others - Sharing Things - Ways of Helping others	- understand the importance of sharing things. - list the things they share with others (toys, books, stationery items, lunch with friends etc.)	
	identify from given pictures and stories the ways in which people help each other (at home, in classroom, in village/city, at the time of any need or disaster)	Narrate an incident when they helped someone in any way.
	identify from their daily life, the ways in which people are interdependent and how they help each other to make a difference in their own lives and the lives of others.	Teacher will provide different situations to students in groups. They will be asked to share their ideas how they are dependent on others. (It could be a role play, an oral presentation or charts presentation)

4.2 GRADE – II

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Professions/ Occupations around Us - Common Professions/ Occupations - Professions/ Occupations they like	- identify some professions from pictures (teaching, farming, medicine etc) - recognize the role of some common professions in their daily lives. - state which profession they like the most and why?	State what they would like to be when they grow up (role play)
Respecting Others and Appreciating their Diversity (elders, religion, ethnic groups, gender, social class) - Need to Respect all People - Ways to Respect all People	- recognize that all human beings are equal and important. - identify that all human beings are similar and different in number of ways including family, culture, climate, ethnicity and religion they should be respected	
	recognize the need to respect all people as they are born equal and with dignity	
	identify ways in which they can show respect for all	
	- identify occasions when it is important to wait for one's turn. For example, while speaking, in the school, on the bus stop, at canteen and ticketing counters etc. - understand that it is necessary to show respect for others' needs, interests, opinions and feelings	To demonstrate the importance of taking turns the teacher will place the students' notebooks on a table and ask the students to collect them. Teacher will monitor the behavior of the students and will remind them if necessary. It may be followed by a discussion on importance of taking turns.

4.2 GRADE – II

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Forgiveness and Forgiving others - Avoid hurting others - Ways to reduce the Hurt. - Forgiving Others.	recognize what they say and do, can hurt others, and what others do and say, can hurt them (telling lies, pushing others, bullying using derogatory words etc.)	narrate any incident of forgiveness from the life of خاتم النبیین Hazrat محمد ﷺ
	- recognize that mistakes are a natural outcome of learning and nothing to be ashamed about or to make fun of - recognize that making fun of others can cause distress and hurt others.	
	- identify ways in which we can redress the hurt caused to others (ask for forgiveness, say sorry, do something special for them etc.) - recognize that when people hurt them, they must forgive them.	Share an incident from their personal lives when they forgave someone or requested someone for forgiveness
Being Just Fair - Fairness and Unfairness - Promoting Fairness	- identify fairness and unfairness in their daily lives. - identify ways of making unfair situations fair. - accept responsibility for treating others unfairly. - mend their behavior when it is proved unfair through realization. - understand that fair dealing must be exercised with everyone regardless of their social class, cultural and ethnic background (inclusion of all in games and group activities).	Tell any moral lesson-based story in the class and discuss the lesson learnt. (group activity)

4.3 GRADE – III

4.3 GRADE – III LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES		
THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Habitat • Kinds of Habitats • Eco system • Characteristics of Habitats • Human Activities and the Natural Habitats	All the students will be able to: • recognize that heat and light of the Sun helps to sustain life on Earth which is the only known planet where life exists.	
	• define the term habitat. • describe the different habitats for living things (polar regions, desert, forest, aquatic) • name plants and animals that live in each of the different habitats. • briefly introduce what an ecosystem is.	• Collect pictures of different habitats, relevant animals and plants
	• identify the environmental factors (temperature, light, water) that support life in a habitat.	• Place one plant in light, one in dark and one covered with polythene sheet and observe for a week.
	• identify the ways plants and animals have features suitable to their habitat (camel, fish, polar bear, cacti, lotus, pine trees etc.).	• Make an aquarium or any other habitat and present that to the class. (Project Work)
	• identify the ways human activities affect the natural habitats.	

4.3 GRADE - III

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Changes in Living Things Life cycle of some animals and plants	compare different stages of lifespan of plants and animals (from pictures, through observation / Video etc.)	Draw and sequence the stages of the life cycle of a plant/animal.
	identify the changes in the lifespan of an animal and a plant.	Draw or interpret diagrams of the life cycles of animal and plants, from their own surrounding, to identify the different stages.
The Sun - Sunrise and Sunset - Role of Sunlight in the Formation of Shadows - Using the Sun for Guidance	- describe the formation of shadows - recognize that the size and direction of the shadow can be used to estimate (guess) time	Fix a pole in school ground and observe the size of the shadow with the position of the sun and time of day.
	- identify that on Earth, the direction of sunrise is 'East' and the direction of sunset is 'West'. - identify South and North with respect to East and West, namely, South and North	
	name places towards North, South, East and West of the school/home.	Draw a map of your neighbourhood showing position of your school/home
Matter - States of Matter - Observing Matter	- identify matter and its states - recognize basic differences between states of matter, such as water, through physically observable properties (e.g. shape; size)	- Name a solid, liquid and gas around themselves - Use a balloon to help students understand how gas or liquid feels inside a balloon and how a solid balloon feels when it is empty

4.3 GRADE - III

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Energy and its sources Common sources and uses of energy	- recognize that energy is required for doing work. - understand that sources of energy are used for many things (move an object, heating, lighting, transportation, electric appliances etc.). - identify natural sources of energy (e.g. the sun, wood, flowing water, wind, coal, oil, gas).	Students will make a list of tasks performed in their daily life that require energy
Resources and type of resources - Types of Resources - Natural resources, Human Resources, and Capital Resources - Goods and Services - Buyers and Sellers - Scarcity	- define the term "resources" - state type of resources, natural resources, human resources and capital resources	
	identify natural resources (plants, animals, water, air, land, forests and soil) human resources (farmers, builders, painters etc.), capital resources (trucks, computer, factory buildings etc.) of Pakistan.	Collect the pictures of natural, human and capital resources. Paste on a chart or booklet and present in the classroom
	define the terms: goods, services, buyers and sellers.	Role play: Buyer and seller
	identify the main goods and services of their local area	Visit nearest market and list what is being sold there.
	recognize the need for interdependence as not all goods and services are available in their area.	
	define scarcity.	Group Activity: identify the scarce resources in their surroundings.
	recognize that people make economic choices because goods and services are limited.	

4.3 GRADE - III

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Conservation of Natural Resources - Changes in the Natural Environment - Pollution - Conserving the Natural Environment - Protecting the Endangered Animals - Extinct Animals (Dinosaurs)	- describe ways in which humans have changed the natural environment - define the term pollution - list different types of pollution (noise , air, water, land)	
	predict that what would happen if natural resources were all used up	Make a presentation on what would happen if there was no water/ gas/ electricity at school or in their locality
	suggest ways to save natural resources	Design a poster to communicate ways to conserve natural resources
	- identify the endangered animals of Pakistan. (Indus Dolphin, Markhor, Blackbuck etc.) - suggest ways to protect the endangered animals	Group Activity: Make a pictorial presentation on endangered animals
	identify animals, which are extinct (Dinosaurs etc.)	
Food - Plants' and Animals' Food - Basic Food Groups - Balanced Diet - Factors for Healthy living	- recognize that plants make their own food in the presence of sunlight - recognize that different animals eat different kinds of food	
	- identify certain food groups as fruits, vegetables, grains, dairy food, meat and dry fruit. - define a balanced diet.	

4.3 GRADE - III

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
	recognize that healthy living requires eating a balanced diet, keeping clean, sleeping well, and exercising regularly	Prepare a flyer to educate others of the importance of cleanliness for healthy living.
	identify the ways to get sufficient exercise to stay healthy.	Make a personal timetable mentioning time for study, exercise, play, leisure and rest.
Quaid-e-Azam - Major events in life of Quaid-e-Azam - Contributions	- introduce Quaid-e-Azam as the founder of Pakistan - narrate the major events in the life of Quaid-e Azam (date of birth, founder of Pakistan, few major contributions, and the date when he died).	Sketch out Quaid-e-Azam's character through Role play.
Allama Iqbal - Major events in life of Allama Iqbal - Contributions	- introduce Allama Iqbal as a personality who expounded the idea of Pakistan. - narrate the major events in the life of Allama Iqbal (date of birth, national poet, famous poems for children, and the date when he died).	- Recite any of Allama Iqbal's poem. - Interview your parents/ grandparents/ elder brother or sister to investigate about Allama Iqbal's life.
Changing World - Past and Present Things - Differences in Past and Present Things	recognize that present time is different from the past in terms of living style, food, communication, clothes etc.	
	identify how schools, communities, and transportation have changed over time (from the given pictures).	Collect and paste the pictures of past and present means of transportation.
	sequence events in a narrative in chronological order.	Visit a museum/ historical places and observe what changes occurred in people's lives.

4.3 GRADE - III

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Inventions - Common Inventions - Effects of Inventions on lives	describe what an invention is.	List a few favorite inventions.
	identify major recent inventions (e.g. aeroplane, computer, medicines etc.)	
	analyse recent inventions (electricity, computers, phone, internet etc.) have changed the life people.	Discuss how a future invention could change life of the people.
Force and Machines - Simple Machines - Push and Pull as a Force - Uses of Force - Force and Motion	define tool as an instrument to make people's work easier	Identify some tools of the past that are still in use today
	name and identify different forms of simple machines (inclined plane; lever; pulley; wheel - and - axel; wedge)	Draw some simple machines used in daily life (e.g. screwdriver; hammer; plier; scissors)
	recognize that push and pulls move things fast or slow. (push and pull as a force)	- Push and pull the door and explain the intensity of force and quantity of change. - Play tug of War to explain push and pull
	recognize from pictures of the past that force applied by humans and animals moved vehicles (Tonga, bullock cart, cycle, pushcart) while today vehicles are moved by machines (bus, motorcycle and car etc.)	
	recognize that greater the force, the greater the change in the motion of an object.	
	observe and describe how motion of vehicles can be changed by applying force (speed up, slow down, stop, change direction etc.)	

4.3 GRADE - III

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Making the World a Better Place: The Role of the Government and Citizens - Individuals and Community - Key Problems - Need of Government - Government and People - Good Citizenship	- define community and its importance. - describe the activities that individuals perform for the welfare of the community.	
	identify key problems in their local area (shortage of drinking water, pollution, lack of health and educational facilities, poor sewerage system etc.)	Group activity: inquire about a problem in the community, identify its causes, suggest solutions and take a responsible action to solve the issue. (one problem per group)
	recognize that citizens organize themselves to meet their needs	
	describe what the government does to meet the needs of the citizens	
	- suggest ways the government and people can work together to meet people's needs in the area - identify ways they can demonstrate good citizenship (playing fairly, helping others, following rules, taking responsibility for one's actions).	Prioritize three problems from the previous activity in groups and identify for local
	identify the personal traits of good citizens (trustworthiness, respect for law, responsibility, honesty, tolerance, gender equality and respect for others' rights).	Make a chart of the qualities of a good citizen.

4.3 GRADE - III

LEARNING THEMES AND STUDENTS' LEARNING OUTCOMES KNOWLEDGE, SKILLS AND ATTITUDES

THEMES	STUDENTS' LEARNING OUTCOMES	ACTIVITIES
Working out Disagreement - Common Conflicts/ Disagreement - Causes of Conflicts/ Disagreement - Impact of Conflicts/ Disagreement - Resolving Conflicts/ Disagreement - Preventing Conflicts/ Disagreement	recognize the disagreements / conflicts that occur at home, in school and in the local community.	
	identify the feelings of people in different conflicting situations.	Draw various face expressions to show different feelings (happy, sad, angry etc.)
	identify reasons for disagreements with friends and family members.	
	identify the ways in which people resolve conflicts/ disagreements at home, in school.	
	use discussion and problem-solving methods to work out disagreement.	Resolve a class conflict through a role play with different situations highlight the traits of tolerance, flexibility and pluralism. (Group Work)
Safety - Personal Safety - Indoor Safety - Outdoor Safety - Natural Disaster	- recognize the need of personal safety - understand the risk and danger associated with the use of electric appliances/ sharp objects/ fire. - practice safety measures while using electrical appliances. - list the various hazards they can face at home (bare wires, damaged roof, broken glass, fire, scissor etc.) - understand the ways of being careful and staying safe - identify some common disasters and ways to stay safe. - understand that they should not hide anything from their parents/ teachers/ guardians to stay safe from any unexpected situation.	- Demonstrate through a role play how to rescue themselves and others during a disaster (Earthquake, flood and fire). - Show a video to the students related with stranger danger and generate discussion - Identify potential hazard areas in their school and home (bare wires, broken glass etc.) and recommend ways to make their home and school safe

CHAPTER



**TEACHING
AND LEARNING**

5.1 THE ROLE OF TEACHER

Teachers have extremely important responsibilities in implementing the main objectives of the curriculum. This means that when teachers design teaching and learning strategies, they must ensure that these strategies include learning opportunities and enriching experiences for their students aimed at and achieving the learning outcomes set out in the curriculum.

It is established that what students learn is fundamentally connected to how they learn it. Therefore, there is a need for new forms of classroom organization, communication, and instructional strategies where the teacher is a facilitator of learning whose major tasks include but are not limited to:

- Creating a classroom environment that reflects a constructive, active view of the learning process that supports learning and teaching.
- Designing effective learning experiences that help students achieve expected learning outcomes.
- Stimulating and managing classroom discourse in support of student learning.
- Learning about and then using student's motivations, interests, abilities, and learning styles to improve learning and teaching.
- Selecting teaching strategies from a wide repertoire.
- Assessing students' learning, including their participation in classroom activities for making ongoing instructional decisions.

5.2 THE CHANGING NATURE OF TEACHING AND LEARNING

Traditional Instructional Practices generally have shown that:

- Most of the classroom time is spent on teachers lecturing, students listening and reading textbooks.
- Teachers use the same set of practices for every lesson. They do not review the previous day's lessons, state their objectives, present, demonstrate, model, check for understanding, provide guided practice, and use closure.
- There are fewer connections between school learning and the everyday world.
- Knowledge of subject becomes an exercise of rote learning.

In such an environment, the role of the student is to memorize information, conduct well-regulated experiments, and perform activities using a specific prescribed procedure and then be tested on their ability to repeat these tasks or remember specific facts.

In the light of current understanding about the nature of learners and learning, the roles and responsibilities of students and teachers in the learning process are changing. The way in which learning is defined has expanded from simply recalling of facts or definitions to being able to find connections between facts to build conceptual understanding. Teaching for conceptual change requires knowledge about the preconceptions of the students. It helps them to purposefully design, intellectually engaging explorations that encourage students to confront and refine their own ideas. The teaching strategies described in this curriculum are intended to support these changing emphases and classroom learning.

The purpose of this curriculum is therefore, not to memorize the “right” answer by the students but for them to move along a learning continuum toward a deeper understanding of concepts and processes. While students engage in constructing their own understanding of each concept, the primary role of teaching is not to lecture, explain, or otherwise attempt to ‘transfer’ knowledge, but to create situations for students that will encourage their making the necessary mental constructions.

5.3 THE GUIDING PRINCIPLES OF LEARNING

Teachers need to keep themselves abreast of recent trends in teaching and learning. They need to learn, analyze, and appraise, new developments in this field. For example, developmentally appropriate instructions describe an approach to education that focuses on the child as a developing human being and a lifelong learner. This approach recognizes the child as an active participant in the learning process: a participant who constructs meaning and knowledge through interaction with others, friends and family, materials and environment. The teacher is an active facilitator who helps the child to understand meaning of the various activities and interactions encountered through the teaching-learning process. It requires teachers to make decisions in the classroom by combining their knowledge of child development with an understanding of the individual child to achieve desired and meaningful outcomes. Teachers ought to value the basic principles of active learning; some of these are:

1. **Learning Involves the Whole Mind and Body.** Learning is not all merely “head” learning (conscious, rational, “left-brained,” and verbal) but involves the whole body/ mind with all its emotions, senses and receptors.
2. **Learning in Creation, Not Consumption.** Knowledge is not something a learner absorbs, but something a learner creates. Learning happens when a learner integrates new knowledge and skills into their own existing structure. Learning is literally a matter of creating new meaning, new natural networks, and new patterns of electro/ chemical interactions within one’s total brain/body system.
3. **Collaboration Aids Learning.** The good learning has a social base. We often learn more by interacting with peers than we learn by any other means. Competition between learners slows learning. Cooperation among learners speeds it.
4. **Learning Takes Place on Many Levels Simultaneously.** Learning is not a matter of absorbing one thing at a time in linear fashion, but absorbing many things at once. Good learning engages people on many levels simultaneously (conscious and Para conscious, mental and physical) and uses all the receptors, senses and path, it can go into a person’s brain/ body system. The brain, after all, is not a sequential, but a parallel processor and thrives when it is challenged to do many things at once.
5. **Learning from Doing the Work Itself (With Feedback).** People learn best in context. Things learned in isolation are hard to remember and quick to evaporate. We learn how to swim by swimming, how to manage by managing, how to sing by singing, and how to sell by selling.
6. **Positive Emotions Greatly Improve Learning.** Feelings determine both the quality and quantity of one’s learning. Negative feelings inhibit learning. Positive feelings accelerate it. Learning that is stressful, painful and dreary cannot form the basis for learning that is joyful, relaxed and engaging.

7. The Image Brain Absorbs Information Instantly and Automatically. The human nervous system is more of an image processor than a word processor. Concrete images are much easier to grasp and retain than verbal abstractions. Translating verbal abstractions into concrete images of all kinds will make those verbal abstractions faster to learn and easier to remember.

5.4 TEACHING STRATEGIES

Research suggests that high quality student learning is most likely to occur when students are engaged in the construction of personal knowledge and in work that has value (application) beyond the school.

The key instruction of General Knowledge Curriculum is that " Students will value and use their learning as a process of obtaining knowledge, based upon observable evidence." Teachers can use a variety of teaching strategies to enhance students' learning; however, these must relate to outcomes of the General Knowledge Curriculum to be consistent with the teaching role to be adopted. Suggested (not limited) teaching strategies for achieving the outcomes of learning are described below:

A. Inquiry- based teaching method

Inquiry is an approach to learning that involves a process of exploring the natural or material world that leads to asking questions and making discoveries in the search for new understandings. In other words, it provides experiences that help students acquire concepts, skills, abilities and understanding of inquiry. Inquiry-based teaching approach takes children to new levels of awareness and environment of learning. As a student-centered activity, inquiry gives children ownership of the learning process and inspires them to become more independent learners. As students engage in critical thinking and problem solving, questioning, probing, and discovering answers, they gain a more meaningful and long lasting understanding of concepts and processes.

CHANGING EMPHASES TO PROMOTE INQUIRY	
LESS EMPHASES ON	MORE EMPHASES ON
Activities that demonstrate and verify content	Activities that investigate and analyze questions
Investigations confined to one class period	Investigations over extended periods of time
Process skills out of context	Process skills in context
Emphases on individual process skills such as observation or inference	Using multiple process skills (manipulation, cognitive, procedural)
Getting an answer	Using evidence and strategies for developing or revising an explanation
Providing answers to questions about content	Communicating explanations
Analyzing and synthesizing data without defending a conclusion	Analyzing and synthesizing data after defending conclusions
Doing few investigations in order to leave time to cover large amounts of content	Doing More investigations in order to develop understanding, ability, values of inquiry and knowledge of subject content
Concluding inquires with the result of experiments	Applying the results of experiments to arguments and explanations
Management of material and equipment	Management of ideas and information

Traditional educational systems work in a way that discourages the natural process of inquiry. Students become less prone to ask questions as they move through the grade levels. In traditional system students learn not to ask too many questions, instead to listen and repeat the expected answers.

The inquiry-based classroom highlights that:

- **Learning is student-centered.**

Inquiry shifts ownership of learning process from the teacher to the students, making the process through which students learn concepts and develop skills as important as the content. In this setting, the teacher acts as a facilitator in the inquiry process.

- **Students engage in inquiry by asking questions and devising answers.**

Inquiry requires students to describe objectives and events, ask questions and devise answers, collect and interpret data and test the reliability of the knowledge they have generated. They also identify assumptions, provide evidence for conclusions and justify their work.

- **Teachers ask questions that encourage inquiry and stimulate thinking.**

To guide students through inquiry, teachers engage in open-ended questions such as "How do you know?" and "How does your data support your conclusion?" in order to encourage further probing and discovery.

- **Students are engaged in problem solving by constructing meaningful experiences.**

Because students follow a scientific approach, engaging in meaningful problem solving, they can construct meaning out of their experiences. Endeavors include hands-on exercises as well as critical and logical thinking activities.

- **Students gain a greater understanding of the purpose of learning.**

Inquiry allows teachers to create a framework where students understand "how" and "why" to ask questions. Students reflect on the lesson and explain why it is important and gain a greater understanding about the inquiry process and how it relates to learning.

- **Inquiry-based learning promotes a creative learning environment using both groups and individual discovery techniques.**

Inquiry involves setting short and long term goals and adapting them to students' interests. Within this framework, teachers involve students in hands-on activities, whole classroom, or group collaboration. This learning environment allows students the freedom to explore and investigate while making connections and drawing conclusions.

- **Students interact purposefully with each other and with the teacher, leading to effective communication.**

Inquiry-based teaching encourages students to collaborate with one another, communicate ideas and thoughts, ask questions, justify answers and search for advice from others.

- **Assessment for learning.**

Inquiry takes the focus off memorization and instead promotes assessing students' ability to understand reason and use their knowledge. Assessment can be achieved through questioning, observing, using checklists, portfolios, student journals, student work samples, hands-on assessments etc.

Assessment provides students with constructive feedback on how well they are meeting expectations and in addition gives response on how well the classroom "lessons" are going.

B. Major Inquiry Skills

The skills of inquiry include observing, asking questions, proposing ideas, experimenting, and interpreting the evidence that is gathered.

An inquiry may be initiated in a variety of ways. It may be based on a question brought to the classroom by a teacher or students; or it may arise out of an activity, an interesting observation, an unexplained event or pattern that appears worth pursuing. Engagement in inquiry is not a linear process; it can have a variety of starting points and the steps followed may vary from one inquiry activity to another. When an unexpected observation is made or a procedure does not work, there is opportunity for new idea to emerge a new set of procedures to be followed.

1. Questioning

Questioning is one of the basic tools for inquiry skill that students need.

Questioning in the classroom reflects students' innate curiosity and practical-mindedness. It can lead them to deeper understanding of any phenomena than what they would get just by reading about it.

There are various strategies for helping students to ask questions. For example: Provide them with an observable phenomenon to ask question about. Initially, some coaching will be necessary. Teachers can, for example, ask students to focus their attention on a particular aspect of what they are asked to observe. This works best when the phenomenon being observed is active in some way. Students should be invited to formulate questions that occur to them as they watch and afterwards explain what they observed and suggest possible follow-up investigations.

Good questions share the following characteristics:

- The questions should be relevant and in a clear and simple language.
- The questions should be concise avoiding any extra details.
- The questions should stimulate thinking.
- The question should be guiding but not leading.
- The questions should be one-dimensional
- The questions cannot be too personal.

2. Conducting Investigation

Once students have decided on questions and hypotheses they wish to address, they should be encouraged to design experiments that test their hypotheses.

As students conduct their experiments, the teacher should continue in a role of a mentor or as facilitator, giving as little direction as possible. Questions and issues can be brought up as situations demand. Every effort should be made to let students make decisions and draw conclusions. Students should also devise their own way to report their findings to others.

Inquiry is an involving process. Students may not always arrive at the complete answer, but the point is they experience things which are new and different, conduct investigations, supply evidence to support ideas, connect with scientists and experts, keep record of thoughts and conclusions, and continue asking questions.

A note for teachers:

When working with younger, shy, or alienated students and with those who are new to this sort of approach, teachers can ask leading questions or even spoon feed them questions to get started.

C. Learning-by-Doing Approach

Hands-on activities actively engage the learners in learning. If they are physically involved, they are likely to be mentally involved too. They are thinking about what they are doing. This is called “hands-on, minds-on” or the “learning-by-doing approach”. Students learn concepts more when they are able to appreciate what they are doing. If they practice only calculating answers to predictable exercises or unrealistic “word problems” then that is all they are likely to learn. Similarly, students cannot learn to think critically, analyze information, communicate thought provoking ideas, make logical arguments, work as a part of team, and acquire other desirable skills unless they are provided an opportunity and encouraged to do those things over and over in different contexts.

Why learning-by-doing approach?

We remember:

20% of what we read;

20% of what we hear;

30% of what we see;

50% of what we see and hear;

70% of what we see, hear, and discuss; and

90% of what we see, hear, discuss, practice and teach.

Advantages of learning by doing approach

- Multiple teaching/learning methods can be integrated.
- Always student-centered.
- Process of “discovery” builds self-esteem.
- Learning is more fun for students; teaching is more fun for teachers.
- Different life skills can be learned, instead of only a single set of knowledge.

However, this approach requires systematic preparation, patience and guidance by teacher, as there is often no single, “right” answer.

The teacher’s role in learning by doing process

First, it is important to review the materials and practice the activities to be taught. The teacher should never freely give the answers to a problem/ question. Instead, the teacher facilitates the students in this process.

- a. Experience (doing) – Describe the experience or activity students do, they are told or shown “how”.
- b. Share (What happened?) – Develop questions that teacher will ask the students about their experience and their reaction to it after they have completed the activity.
- c. Process (What’s important?) -Develop questions that teacher will ask the students about something they felt important about the experience.
- d. Generalize (So what?)- Develop questions that will ask the students how the experience related to their own lives.
- e. Apply (How what?) Develop questions that ask the students how they could apply what they learnt to a similar or different situation.

D. Demonstrations

In-class demonstrations are an important part of teaching as demonstrations can make ongoing lessons a fun and entertaining experience, and can also stimulate students’ interest and curiosity. To make in-class demonstrations effective in promoting conceptual understanding, active participation and interaction of students is important.

Conducting Interactive Demonstration

- Determine the purpose of demonstration and what is to be achieved.
- Conduct the demonstration yourself to ensure the results are as you want.
- Prepare curricular materials or worksheets and ensure they are designed to promote student-student as well as student-teacher interactions in the classroom.
- Perform the demonstration

Once the demonstration is complete, let students complete their worksheet activities. An interactive demonstration could be made up of a number of conceptually linked mini-demonstrations to address important conceptual issues and worksheet activities require students to write predictions, draw diagrams and answer a set of multiple-choice questions.

Conduct a whole class discussion and provide explanations to clarify or extend students’ learning.

Teachers think that they need a lot of sophisticated, expensive resources to teach any subject. While teaching and learning does require purchases, much of the General Knowledge Curriculum contents can be taught with simple, inexpensive and readily available materials: such as paper clips, soda straws, papers, balloons, rubber bands, paper cups, clay etc. Similarly, outdoors (farms/gardens/parks) are perfect resources for learning. From examining bugs on a sidewalk to observing how a tree changes through the seasons, the outdoors provides a wealth of learning opportunities. Children can learn about plants and animals, shadows, weather, seasons, traffic signals, religious and cultural festivals and many more concepts outside the classroom.

e) Cooperative Learning

Cooperative learning is a strategy in which students work together in small groups to maximize their own and each other’s learning.

In cooperative classrooms, students have two responsibilities:

- to learn and complete assigned tasks and,
- to make sure that all members of the group do so as well.

A source of academic, social and psychological benefits is associated with working collaboratively in groups such as improved self-esteem, increased on-task time, increased higher order thinking, better understanding of material, ability to work with others in groups and improved attitudes towards schools and teachers. Cooperative learning creates opportunities for students to master the social skills, necessary for living productive and satisfying lives.

An example of cooperative learning structure is described below:

Think-Pair-Share

To follow think-Pair-Share strategy, teachers have to first pose a question or create a problem situation to the class that requires students to think critically.

- Students 'Think' alone to answer the question for a specified amount of time. Students write their answer to show what they thought about the questions individually.
- Students 'Pair' up with another student acting as a partner to discuss the question/problem, listen to and expand on one another's ideas.
- Students 'Share' their possible answers/solutions to the questions/problem with the entire class.

Think-Pair-Share structures are effective only when students participate equally in practicing social skills, and individually demonstrate what they have learned from their partners.

Success on the academic task is assessed by the randomly asking questions to students, checking their work, or through individual tests or quizzes. For the social skills task, students are evaluated through teacher observation and students' evaluation of their own and group effectiveness.

f) Role -Play

Role-playing is a teaching strategy in which students learn by acting and observing, where some students act out a scenario in front of the class. Students learn the content being presented and also develop problem solving, communication, initiative and social skills. As students examine their own and others' feelings, attitudes and perspectives, they develop an understanding of themselves and others. If students are asked to write the content of role-plays themselves rather than simply enacting roles handed to them it will enable them to connect and process information, and be creative. However, for early grades students, teachers have to facilitate them in conducting role-plays.

Conducting Role-Plays

- i. Determine the purpose of role-play, appropriateness to the objectives, and its suitability for the age group.
- ii. Write a role-play
- iii. Teacher or students develop a realistic situation and decide how to portray it (newscast, courtroom scene, press conference, puppet show, talk show, panel discussion, drama).
- iv. Define the problem or issue in the situation that the role-players have to deal with.
- v. Determine the number of role-players needed.
- vi. Develop short, specific roles for each person.
- vii. Determine the time for each role play.
- viii. Develop a set of questions for the post role-play discussion.

While students are acting, ensure that the rest of the students are attentive and observe the role-play. Teachers must allow students enough time to read and understand their role and prepare to enact it. Also, teachers may involve the rest of the class by having them suggest questions for the discussion to follow.

After the role-play, teacher reviews it with the class then opens the discussion of the class ensuring they discuss only the role-play's content. If discussing a problem, students can explore alternative solutions to it. Summarize the role-play, focusing on student's understanding of the problem/issue that was being dramatized and/or attempt to solve the problem.

The teacher can assess concept understanding, ability to communicate an issue/ problem, etc. through observation and asking questions. The social skills, developed while preparing and conducting the role-play, can be assessed through a checklist.

g) Other Classroom Teaching and Learning Practices

The suggested Classroom teaching strategies are not intended to be exhaustive. It is expected that teacher will also identify other research-based instructional designs and practices that are appropriate to their students and can prompt students to focus on the salient features of their experiences, observations, and the concepts they are working with to support critical engagement and movement towards desired learning outcomes. Model building, consequence maps, concept mapping, brainstorming, predict-observe- explain, small group research, use of information technology, drill and practice, process writing, storytelling, show and tell, class discussion, creative writing, computer simulations, posters, etc. are some of the practices that may be used to ensure that students have quality learning experiences.

Safety Practice

Activity-based, hands-on processes provide an exciting method of teaching and learning. However, experiments and demonstrations may involve inherent risks for both the teacher and the students. Thus teachers/ schools should make every effort to create a positive environment in which risk can be evaluated and reduced to an acceptable, safe level. Fieldwork and field trips need special vigilance with respect to traffic and road safety.

CHAPTER



**ASSESSMENT
AND EVALUATING
STUDENTS' LEARNING**

Assessment provides a way to measure students' demonstration of learning. It helps teachers answer the questions: "How much did they learn?" and "How well did they learn it?" and "How well did we teach it?" It determines their progression through their learning experiences and enables them to demonstrate that they have achieved the intended learning outcomes.

Cognitive learning theories emphasize that learning is not linear, that is instead of building knowledge bit by bit from fundamental elements into more complex, higher-order thinking, and it is a process of connecting prior understanding with new learning. Consequently, an assessment strategy that measures the acquisition of facts and elements cannot serve a constructive model.

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

The early years of schooling (Age 5-8) are an important period for development. It is in these early grades that children learn to read and write, acquire a basic understanding of content areas, and develop important dispositions toward learning. It is also a time to begin the process of assessing children's performance related to learning outcomes that is consistent with how young children demonstrate their knowledge and skills.

6.1 THE CHANGING PARADIGM IN EDUCATIONAL ASSESSMENT

This curriculum establishes that the ultimate outcome for the school education is that students will learn the skills and competencies needed to succeed in today's world such as the skills of inquiry, reasoning, problem solving, decision-making and working collaboratively. To meet these outcomes, teachers need to provide students with learning experiences that are more authentic. If we want an accurate appraisal of how well teachers are helping students to achieve these outcomes, they must make changes in assessment that reflect the changes in curriculum and instruction.

Conventional assessments driven by standardized multiple-choice tests, matching terms or a short-answer tests, although can adequately assess factual knowledge and basic skills, often fail to assess students' acquisition of higher-order thinking skills such as critical and creative thinking, and problem solving. Traditional assessment also does not evaluate students' learning process. Moreover, this approach may not increase students' desire to learn as they know that what will probably be tested is their factual recall or simple analysis.

Alternative assessment, which uses strategies such as performance, portfolio, students' self-reflections and peer review, is considered as a valuable addition to standardized assessment. The rationale of alternative assessment is to gather evidence from real-life, use multiple assessment strategies to assess learning, and provide ongoing feedback to students.

Alternative assessment is a better way to determine how well students are learning (and how effective instruction is) than traditional forms of assessment. Research on assessment suggests that a constructive alignment between instruction, learning, and assessment is vital.

6.2 INCORPORATING ASSESSMENT INTO LEARNING PROCESS

Linking assessment to instruction i.e., embedding it in the process of learning is central to full implementation of this Curriculum. To allow students to construct learning in the classroom through authentic experiences, assessment must be:

1. mainly open-ended, allowing for discussion and revision of new understanding.
2. tolerant of divergent thinking of students and promote the notion of no “one right answer”.
3. presented in alternative mode, not just paper-and-pencil responses to limiting questions.
4. designed to foster analysis, comparison, generalization, prediction, and modification according to the grade and development level.
5. capable of promoting collaboration and team effort in demonstration of competence.
6. ongoing and cumulative, showing growth over time.

Therefore, assessment should be carried out regularly through the use of different techniques such as oral questioning, observation checklist, and assignments, practical and written tests. When assessment is carried out on continual basis, the teacher has the feedback required to plan their day-to-day teaching.

On the basis of assessment data, a teacher can decide whether to proceed to the next teaching lesson/ theme, carry out remedial teaching, set enrichment exercises/ drills or modify teaching methods. Hence the process of evaluation can help a teacher raise students’ performance by identifying the needs of students and taking the right steps in meeting these needs.

Assessment practices also communicate what is important and what is valued at early education (Grades I-III). For example, assessments that emphasize the acquisition of factual knowledge imply that facts are important, whereas inquiry-centered assessments indicate that scientific inquiry is important. The methods used to gain information about achievement should define what students must learn.

The primary purpose of classroom assessment for these grades is not solely to evaluate and classify student performance, but to inform teaching and improve learning, and to monitor student progress in achieving year-end learning outcomes. The intent is to find out whether a student knows and understands sufficiently to apply knowledge and skills effectively after a period of instructions.

6.3 THE LEARNING ASSESSMENT PROCESS

In order to apply assessments effectively to determine whether student learning is expanded or improved, an assessment plan needs to be developed that incorporates assessment opportunities throughout the learning process. In the early grades, to be effective, assessment cannot be an afterthought or an instructional add-on. It needs to be embedded, contextualized, and executed within the learning process. Effective teachers should outline the process for developing and implementing an assessment plan for measuring students' learning.

Following is a process, as an example, to follow for the development and implementation of assessment:

- 1) Select learning outcomes from a course of a study and Grade level.
- 2) Design assessment to measure learning outcomes.
 - i. Determine the outcomes to measure,
 - ii. Determine the purpose for the assessment,
 - iii. Determine the assessment method to employ, and
 - iv. Determine the kind of assessment data you need to collect.
- 3) Design learning activities based upon learning outcomes.
- 4) Include assessment activities within the learning designs.
- 5) Deliver learning.
- 6) Assess learning and learning activities.
- 7) Gather and format data generated from assessment activities.
- 8) Interpret the assessment data.
- 9) Use assessment data to make decisions at the students, classroom, and course level.

Teachers can modify this process depending upon their professional competencies and needs of the students. However,

Assessment should be:

- inclusive of a range of practices to allow for diverse learning styles of students
- continuous, productive and constructive
- able to monitor and guide students' progress towards attainment of outcomes
- appropriate to and based on the learning experience of all students
- comprehensive
- valid and reliable
- effective and manageable
- able to promote improved teaching strategies
- monitoring strengths and areas for further development
- consistent with teaching strategies
- involving negotiation between teachers and students
- able to involve students in their own record-keeping
- taking account of students' self-assessment, and
- in understandable language.

6.4 Assessor(s)

The teachers, the students doing self-assessment, or the student(s) assessing a peer or group, are assessors.

a) Teacher Assessment

The teacher assesses individual students or groups of students using a variety of assessment tools to implement the various assessment strategies.

b) Self-Assessment

Through self-assessment, students can get a good idea of what they are expected to accomplish and how they can demonstrate their knowledge. Students perceive the relationship among content acquisition, skill proficiency and assessment opportunities. By setting their sight on a demonstration, students can more readily see the connection and the relevance of their work.

In addition, students record their observation and write reflective notes about how learning experiences help them to understand the concepts and principles.

The students assume the role of researchers and use critical thinking skills as they find facts and make inferences to reach more conclusions. They are not receiving information passively and then simply giving it back to the teacher after memorizing it. At early grades, students apply established criteria to reflect upon and/ or assess their own progress and achievement with the role of teacher as a facilitator.

Through the development of self-assessment skills, students can learn accuracy and accountability. Other virtues of self-assessment are:

- The ability to perform self-assessment is a critical programming goal that has implications for lifelong learning.
- Self-assessment helps students develop understanding of the established criteria. This is particularly true with respect to psychomotor skills for which a cognitive understanding is a necessary step towards good performance.
- Self-reflection is a part of self-assessment which includes personal responses and reflections about oneself or the learning process (e.g, using questionnaires, surveys, interest inventories, description of likes/ dislikes, responses to performance results etc.). These reflections and responses can be recorded and included in student learning logs, journals and portfolios.

c) Peer Assessment

Peer assessment is an effective way to collect a great deal of reliable information in a short time. Evaluating the work of others is a valuable learning experience for the student who is doing the assessment. While students make systematic judgments about each other's performance relative to stated criteria for the student learning outcomes, it extends the teacher's knowledge about an individual or group. However, peers must be knowledgeable about the criteria for assessment, willing to take their responsibility seriously, and treat others with respect.

In assessing their peers, students need to start with a limited role and use simple checklists, rating scales, and frequency indexes.

d) Group Assessment

Group assessment is similar to peer assessment; however, group assessment involves using group of students to assess other groups or using one student to assess a group.

6.5 CLASSROOM ASSESSMENT STRATEGIES

Assessment is an integral part of classroom activity. It involves analyzing students' work in light of given criteria and paying attention to what they are thinking, attending as much to their reasoning as to what they don't understand. It involves engaging students as active participants in an assessment activity or conversion, so that it becomes something they do, not merely something done to them.

Classroom assessment strategies provide ongoing feedback for the learners and the teacher on what is making sense and what learners don't understand. They provide information for the teachers on adjustments and modifications that need to be made to a course or learning plan.

Teachers learn about students' progress not only through formal tests, but also through moment-by-moment observations of students in action. They often conduct assessment through instructional activities. To assess students' knowledge, skills, and attitudes, teachers require a variety of tools and approaches.

Some of the classroom assessment strategies are described as follow.

a) Observation

Observation provides a way of gathering information fairly quickly while a lesson is in progress. When used formally, the students would be made aware of the observation and criteria being assessed. Informally, it could be frequent but brief check on a given criterion.

Observation may offer information about students' participation level for a given task, use of piece of equipment or application of a given process. It is important to document observations by keeping records.

Assessment tools that assist with recording information and maintaining records include checklists, rating scales, scoring rubrics, frequency index scales, inventories, anecdotal notes, codes, and self-adhesive notes or grids.

Observation guidelines for teachers:

- Observe a certain number of students per class rather than all students.
- Focus on one skill at a time.
- Display scoring rubrics, rating scales, and checklist criteria.
- Use computer/ information technology to assist in recording observations (subject to availability).

b) Performance Tasks

Performance tasks (skill demonstration, games, routines, drawings, projects, presentations) are activity-based tasks, used to observe student acquisition and/ or application of knowledge, skills and/ or attitudes where:

- students perform, create, construct, produce, or do something
- deep understanding and/ or higher order thinking skills are needed
- significant work is involved that usually takes days/ weeks to complete
- it calls on students to explain, justify, and defend
- performance is directly observable
- criteria is specified and explained to students along with the task
- there is no single best product or correct process
- usually students work with real-world contexts and constraints

Performance-Based Assessment

- Can assess communication, presentation, psychomotor skills.
- Through product, can assess performance of process/ skill, and also see what learning students got from it.
- Teaching and learning occur during the assessment.
- Students find real-life application and contexts engaging.
- Provide a different way for students to show what they know and can do.
- Students learn how to ask questions, and since such tasks often involve group work, to work effectively with others.
- Emphasis on higher order thinking and application - allows in-depth assessment of main content ideas.
- Forces teacher to establish specific criteria to identify successful performance
- Encourage re-examination of instructional goals.

Assessing performance is most often achieved through observing. However, assessment tools such as scoring rubrics and rating scales also include performance criteria. These tools, as well as anecdotal notes and checklists completed by the individual student, peers, groups, and/ or the teacher, help measure the level of student performance, progress and achievement.

c) Questioning/ Interviews

General Knowledge Curriculum promotes in-depth understanding of concepts. Interviewing a student allows teacher to verify that learning has taken place beyond simply recall of facts. Interviews may be brief discussions between teacher and student or they may be more extensive and include student, peer/ parent and teacher. It is helpful for students to know which criteria will be used for assessing formal interviews. This assessment technique provides an opportunity to students to enhance verbal presentation.

- Interview allows a student to display ability to use information and clarify understanding.
- Effective questioning (e.g., open-ended, divergent, convergent) promotes critical thinking and allows teacher to identify what the student knows and what the student needs to learn.

- Questions can be delivered formally or informally through interviewing carried out as a station activity or through whole-class questioning.
- Students' responses can be given in writing or through a variety of methods (e.g., human opinion lines, thumbs up/ down sideways signals, stand-up/ sit-down indicators).
- Responses can be recorded using class checklists or other record-keeping methods.

d) Journals/ Learning Logs/ Reflections

Journal writing and learning log entries provide opportunities for students and record their personal thoughts, reflections, choices, feelings, progress, and/ or participation, patterns and changes related to active living participation chart, recess participation records, personal goal-setting plans, and so on.

By recording feelings, perceptions of success and responses of new concepts, a student may be helped to identify his or her most effective learning style. Knowing how to learn in an effective way is useful information. Journal entries also give indicator of developing attitudes towards concepts, process and skills, and how these may be applied in the context of society.

Self-assessment, through a journal, learning log or reflection allows a student to think about strengths and weakness, attitudes, interests and new ideas.

e) Portfolio

Portfolios offer another option for assessing students' progress in meeting Curriculum Outcomes over a more extended period of time. This form of assessment allows the student to be central to the process. There are decisions about the portfolio, and its contents, which can be made by the student and teacher together. What is placed in the portfolio, the criteria of selection, how the portfolio is used, how and where it is stored, and how it is evaluated, are some of the questions to consider when planning to collect and display students' work in this way. Items in portfolio may take the form of audio-video productions, demonstrations, laboratory reports, research projects, work of art, written reports, to name a few.

The portfolio should provide a long-term record of growth in learning and skills. This record of growth is important for individual reflection and self-assessment, but it is also important to share with others. For all students, but particularly younger students, it is exciting to interview a student regarding portfolio and see the record of development over the time.

f) Paper and Pencil Tasks

Paper and pencil tasks may involve answering multiple-choice, true or false, open-ended, or matching questions, completing and drawing, or labeling a diagram. These techniques can be formative or summative.

These can be in written form for display or direct teacher assessment. Whether as part of learning, or a final statement, students should know expectations for the exercise and rubric by which it will be assessed. Written assignments and tests can be used to assess knowledge, understanding and application of concepts. Test items tend to assess knowledge of factual information and application of basic skills in isolated, de-contextualized ways rather than assessing the application of the knowledge and skills in meaningful, everyday situations.

Because formal written tests have limitations in measuring movement-based learning outcomes, the use of paper and pencil tasks should be limited at early grades.

6.6 ASSESSMENT TOOLS

Assessment tools are instruments for measurement or making judgments, based on the interpretation of evidence, to determine how well the students are performing. They include the performance criteria to determine the level of students' progress and achievement. Examples of the assessment tools are checklists, rating scales, scoring rubrics, frequency indexes, inventories, and anecdotal notes.

a) Checklist

- A checklist is an assessment instrument used to record of presence or absence of specific, pre-selected concepts, skills, processes, or behavior and attitudes.
- It includes a list of specific criteria and/ or descriptors for behaviors and/ or performance related to student learning outcomes and attitude indicators.
- The criteria and descriptors use in checklists should be clear, specific, easily observable, and understood by the students. Students are encouraged to assist in the development of criteria and descriptors. Teachers or students can readily add new items to generic forms for various assessments.

b) Rating Scales

- Rating scales include clear and concise list of criteria that allows students' performance to be judged along a continuum.
- Rating scales can be descriptive (e.g., always frequently, rarely), graphic, and/ or numeric (e.g., 5,4,3,2,1 with 5 being highest and 1 lowest.)

c) Scoring Rubrics

- Separate sets of descriptors/ criteria for each performance level reflect learning outcome components and distinguish the quality of a performance or product. Rubrics usually have three to five levels.
- Students assist with the development of criteria for each performance level where possible so that there are clear expectations for students at the outset of a project/ assignment, performance, or demonstration.
- Rubrics provide more detail than do rating scales or checklists. However, Scoring rubrics are time consuming to construct. They should be created for large products and processes.
- Scoring rubrics may range from two to five points:
 - two- point rubrics (e.g., yes, no/ developing, developed/ okay, improvement desired)
 - three point- rubrics (e.g., proficient, competent, improvement desired/ powerful, capable, developing/ mature formative, initial/ outstanding, acceptable, progressing)
 - four - points rubrics (e.g., outstanding, good, okay, novice/ exemplary, competent, developing, emerging)
 - five-point rubric (e.g., consistently, frequently, sometimes, with direction, rarely/ awesome, very good, satisfactory, minimal, non-existent)

There are two types of rubrics

- **Holistic rubrics** score the students' performance as a whole and combine a variety of essential performance elements in order to determine the overall level of competency (e.g. one rubric is used to assess several elements such as cooperation, participation, fair play, and communication skills)
- **Analytical rubrics** outline essential elements so that student receives feedback on the level of performance for each essential element (e.g., a separate rubric is used for elements of fair play that includes respect for opponents, rules, and officials, self-control and equitable playing)

d) Frequency indexes

A frequency index indicates how often various skills, behaviors and/or attitudes occur. Teacher may use a class list to add check marks each time a student performs or demonstrates a certain characteristic. For example, the students perform or demonstrate a certain characteristics i.e., the student:

- properly performs an activity/ role situation in the class room;
- assist fair or unfair play;
- works well with others;
- is active or inactive; and
- follows safety procedures and school/ games rules.

e) Inventories

An inventory is given to student in order to find out prior knowledge, past experience, abilities, and/ or current interest in an activity/ area.

An inventory can be either verbal (informal inventory) or written, and can consist of a series of questions or statements requiring responses. For example, teacher may use questionnaires, surveys, and/or a show of hands on specific topic areas (e.g., sports interests, food intake and physical activity participation in leisure time).

f) Anecdotal Notes

An anecdotal note is a brief, narrative description of observations that provide information regarding a student's learning/ development/ behaviors/ needs. It captures observations that might otherwise be lost.

Anecdotal recording can be time-consuming and therefore, requires an organized, efficient approach. Teachers may find it helpful to use:

- a list of students for each class, divided into three columns: date, observation, planned action.
- brief, focused and objective notes.
- codes for quick recording (e.g.) C-cooperation, FP-fair play, IA- inattentive)
- self – adhesive notes for comment forms that students fill out, including date, name, and description of behavior (positive or negative). Notes can be placed on a class record-keeping sheet.
- computer technology (e.g. software programs for creating class recording lists).

Assessment of Affective Traits and Dispositions

Affective traits and dispositions are the attitudes, values, motivation, social relationship, classroom environment, and concept of one's own academic ability. They are those factors (of the student, teacher, and classroom) that affect the way students learn.

Positive, well-developed affective traits motivate students to learn effectively now and in the long-term. Students have a better self-concept, higher productivity and become more involved citizens of their society. In addition, they learn or analyze themselves and refine behaviors and disposition. (All teachers know that the students with positive affective traits, learn better, and are more confident. But few, if any, teachers assess affective targets. Reasons include the subject matter-knowledge and skills – are seen as the primary focus of education in schools; the difficulty of defining affective targets because they are personal and different for individual students; assessment is influenced by transient to please teachers).

Affective traits can be assessed through self-reporting, teacher's observation and peer evaluation. No assessment technique/ tool is a perfect device to assess students' achievement. Thus, several techniques may be utilized collectively to evaluate total growth of students in:

- intellectual growth
- moral achievement
- physical development
- emotional growth
- social growth
- social development

CHAPTER



**TEACHING -
LEARNING RESOURCES**

In general, student-teacher interaction in most classrooms is limited to reading, writing and speaking where textbook is the only teaching and learning tool. In addition to the textbooks, teachers, in order to support the learning, must use many other resources that can be available, accessible and affordable.

The teaching and learning resources include: textbooks, teacher's guide/manual, student's workbooks, visual aids such as charts, models, videotapes, computer software, internet websites, online libraries, community (field work, Guest Speakers etc).

7.1 GUIDELINES FOR WRITING A TEXTBOOK

A textbook is an important teaching and learning resource and one of the most extensively used resources in classrooms. Both the quality of contents and presentation must be of the highest quality for primary school children in the early grades. Young learners draw upon immediate personal experiences as a basis for exploring concepts and skills. They enjoy hearing stories of both the recent and distant past. They enjoy learning about events through the autobiographies and biographies of historical personalities, therefore, for early grades, short pictorial representation, exposure to various media and firsthand experience through activities, must be included in the teaching and learning resources. Since the textbook serves as a framework for teaching throughout the year, following are essential features for a textbook, which need serious consideration:

1. A textbook must include an introduction to the textbook, explaining how to use the textbook.
2. Table of contents including subtopics.
3. The textbook must be in line with the National Curriculum, covering all SLOs.
4. The book must be attractive and engaging.
5. Written text needs to be kept at minimum, particularly for Grade I and II.
6. Content and illustrations must be culturally, contextually and age appropriate.
7. Activities must be simple and within students' capabilities.
8. All text and material must be accurate, up-to-date and error-free.
9. End-of-the-Chapter exercises must include a variety of assessment styles based on levels of Bloom's Taxonomy. These should encourage students to think, develop skills, use information for a variety of purposes.
10. Exercises/questions must be contextually relevant (feasible to use in classrooms, affordable, examples from context to increase relevance and meaning).
11. Textbooks should not include any content/ material repugnant to the national integrity and harmony.
12. Textbooks should be free from all kinds of biases including, gender, religion, occupation, social background etc.
13. Relevant internet links and other online resources may be included.
14. Glossary of the new vocabulary must be included.

7.1.1 Guideline for planning and writing a chapter

This curriculum requires a new way of writing a chapter in the textbook. The textbook author is free to decide the titles of each chapter and can choose to cover students' learning outcomes (SLOs) from any themes in developing the content of the chapter.

The textbook author must also keep in mind that a number of SLOs cannot be addressed in the text (as if this is done it would lead students to simply memorize the text and not serve the realization of the curriculum). These SLOs could be realized through questions and practical activities within and at the end of the chapter exercises.

For example, students could be given a question that takes them to predict about scarcity of natural resources with reference to growth of living things. Similarly, an activity could ask students to engage in any inquiry and design a poster to communicate ways to conserve natural resources as a product of the inquiry.

- Learning outcomes must be given at beginning of each chapter.
- Identify topics and subtopics that will be included (develop an outline)
- Decide on key ideas, facts, concepts, skills and values that can be developed.
- Decide about potential illustrations.
- Illustrations must clearly convey the desired concept.
- Activities must demand from students to do inquiry and problem solving according to grade level.
- Ensure that the content is up to date, accurate and developmentally appropriate.
- Contents must be in line with chapter outcomes.
- Gender balance must be maintained while developing the text.
- Language must be consistent, culturally appropriate and grammatically correct (as if talking to a group).
- Language must not be disparaging, patronizing or have stereotypes about any religion, ethnic group, gender, for people of differing abilities or any other community.
- Language must engage and hold reader's attention.
- For Grades I and II, text must be kept to minimum level.
- Recall previous learning, where possible.
- Structure the writing so that the sentence is simple, paragraphs deal with single ideas etc.
- Interesting information in the form of tid bits, fact file, point to ponder etc. must be given.
- Write a summary/ concept map at end of each chapter, reviewing key knowledge and skills.
- End-of-chapter exercises
- Recall and integrate previous learning
- Engage students and develop their creativity
- Move from lower to higher order thinking
- Focus on multiple intelligences
- Keep the text contextually relevant in line with local teaching and learning.
- Provide website links for further research

7.1.2 Guidelines for choosing a textbook

Following indicators can be used to determine the quality of a textbook.

1. Does the book follow the outcomes of the curriculum?
2. Is the content accurate and up to date?
3. Are important skills developed?
4. Do the illustrations (maps, pictures, drawings, graphs) help understand the content better?
5. Do the end-of-the-chapter exercises encourage students?
 - a. To think
 - b. To develop their skills
 - c. To be creative
 - d. To be research oriented
6. Activities?
 - a. Are activities suitable for the needs of the learners?
 - b. Do activities include student participation in real life issues?
 - c. Do activities promote 21st century skills?
7. Is a variety of assessment strategies suggested? (e.g., binary and multiple choice items, completing picture/ map items, project work, exhibitions, interpretive exercises, open-ended and divergent responses, etc.)
8. Does it motivate students to think?
9. Do the text, questions and suggested activities stimulate interest that would lead to further study?
10. Is the book free from biases?
 - a. Religious | b. National/Ethnic Origin | c. Gender | d. Occupation | e. Class etc.
11. Do the textbooks present issues from different perspectives?
12. Does it include current issues, problems, latest information and happenings?
13. Is a teacher's guide/ teaching notes included?
14. Is it attractive and appealing to children?
15. Is the language readable, understandable, and easy to follow? Is it appropriate for the level of target learners?
16. Are the contents relevant to the needs, age and level of understanding of the student?
17. Is there an introduction and summary?
18. Does it have an introduction explaining its organization, table of contents etc.?
19. Are there suggestions for further reading in the area or websites for further information?

7.2 GUIDELINE FOR WRITING A WORKBOOK

Workbooks are books that contain writing activities and exercises that build upon each chapter in the textbook. Workbook exercises help students to develop conceptual understanding of the concepts dealt with in the text, to develop skills and to apply knowledge to new situations.

Basic features of a workbook

A workbook should have:

- Various exercises and activities for each chapter, topic, subtopic.
- Exercises and activities that will enable student to develop and practice the content knowledge, skills and higher order thinking.
- Accurate and variety of exercises.
- Clear and explicit instructions i.e., easy for students to understand and follow.
- Clear illustrations/ examples/ explanations to show what children are supposed to do, and/or what product looks like.
- Enough space for students' responses (where appropriate).
- Relevant material and age appropriate vocabulary.
- Exercises and activities with a variety of purposeful, stimulating, challenging and innovative items to encourage students to review and practice the knowledge and skills they have learnt.
- Exercises that include both constructed and restricted response items.
- Activities, which requires readily available, acceptable, and affordable materials and resources.

7.3 OTHER EDUCATIONAL RESOURCES

Educational Tours (visits): Keeping in view that students link their learning experiences with real-life situations pertaining to environment, community, resources and local expertise, explorative activities for examples, a quick field trip/ visit to the schoolyard or nearby field/park, railway station etc are recommended. All such activities are characterized by active student involvement in attempting to find answers to questions about the natural and constructed world. For this, teacher has to plan the tour and Identify and contact appropriate authorities (seek parents', principal's written permission at school and management at place of visit). Explain about the purpose of the tour. Develop a task sheet to be completed by students. Evaluate and record the students' outcomes.

Guest Speakers: Guest speakers from laboratories/ factories or some community personnel (not only professional but people with special skills such as carpenter) can be invited to the school that could help students develop interest in learning.

Non-Print Resources: There are an increasing variety of resources such as video, offer simulations and models of real-life situations that permit the investigation of phenomena that are not easily available because of cost, safety, or accessibility.

Use of Technology: Computer and related technology offer students a very important resource for learning the concepts and processes of science through simulations, graphic, sound, data manipulation, and model building.

7.4 A GUIDELINE FOR DEVELOPING “TEACHER’S GUIDE”

Textbooks should ideally be accompanied by a teachers’ guides that is aimed at informing teachers about how the textbook is written and how best to use it to facilitate student learning. Teachers’ guides include detailed explanations of key concepts and the methodologies to teach particular topics. They provide further examples that could be given to facilitate learning, relate concepts with daily life situations and to reinforce development of attitudes and values. Teachers’ guides serve to educate teachers and thus can be seen as a mean of helping teachers develop professionally. A teacher guide should include introduction to guide explaining how to use it. It must be easy to understand and use, expand and develop teacher’s repertoire of knowledge and skills.

Basic features of a teacher’s guide

A teacher’s guide:

- Helps teachers to plan and sequence the lesson in order to teach the text effectively.
- Provides teachers with relevant background knowledge essential for teaching the concepts.
- Outlines the learning outcomes to be achieved from each planned lesson.
- Identify teaching strategies appropriate to the context of teaching and learning according to the textbook.
- Provides step by step guidelines for teaching strategies that are suitable for teaching knowledge, skills, and dispositions in each chapter.
- Identifies what extended activities students could do with teacher’s help to reinforce and build upon the target knowledge, skills and dispositions.
- Identifies the resources needed for teaching strategies and extension activities.
- Identifies sources of information teachers can use to develop their knowledge (content and pedagogical).
- Explains how and where teachers can develop low-cost or no-cost resources.
- Includes Materials that teachers can photocopy (PCM), use themselves or for students.
- Identify constraints and strength of each strategy or activity, especially if likely to be new for teacher.
- Includes various assessment strategies (strengths, weaknesses, how to implement etc.) and give examples of questions/ tests.
- Provides teachers with choices of strategy/ activity for each chapter (let them decide which to use).
- Needs to be error free and contextually relevance.
- Includes Relevant website links
- Includes revised Bloom’s Taxonomy Pyramid to support the teachers in designing tasks and questions in line with the progression in the lesson.
- Includes some other resources/ websites/ appropriate online resources at the end of each topic/ theme.

7.5 TEACHER TRAINING AND PROFESSIONAL GROWTH

Teachers are important variable for effective implementation of Outcomes of any Curriculum. In order that education can make a meaningful contribution towards the national development efforts and become more relevant by linking it with real-life problems and environment, additional competencies are needed for the teachers to play their new role as they are not to be seen only as someone “imparting instructions” but as a guide and facilitator for the students.

Teacher training programs therefore need to be critically analyzed and restructured to provide for experiences, which will help develop these competencies. The efforts for reforming teaching and learning strategies in the interest of promoting students’ understanding must be long-term and must explore teachers’ prior knowledge and experience. Teacher professional development must utilize collaborative problem-solving approaches, and must work toward the redefinition of student’s and teacher’s roles in the classroom.

Teacher training programs, training for pre-service as well in-service teachers must among other factors, focus on these guidelines:

7.5.1 Comprehensive understanding of teaching methods

Teachers should have full command over different methods of teaching. For example, promoting inquiry by participating in “inquiry experiences” similar to those they will eventually provide for their students. They must have understanding of elements of constructive teaching practices and various inquiry approaches. Knowledge of methodologies must be accompanied by a full understanding about the philosophy and rationale of each teaching method.

7.5.2 Use and application of different methods in different situations

Teachers need to use and apply different strategies of teaching and learning according to different situations, age appropriateness, and students’ prior knowledge. Experienced and effective teachers know that their method and style needs to be adapted and transformed to fit the local situation and external factors that may impinge on a lesson.

7.5.3 Resource Management

Teachers must be trained to develop skills for managing the new and existing resources that they may require to enrich their teaching styles. Teachers need to arrange resources that are required for activities that enhance concepts of students and match these with the level and interests of the learners.

7.5.4 Time Management

Time management is essential for implementation of teaching and learning practices. Teachers should be able to effectively manage time while working with small and large groups, for inquiry/ investigative activities, role-plays as well as for assessing and evaluating students’ learning and its documentation.

Teachers must be taught to evaluate their own teaching practices and subject knowledge in the light of information about the content standards and students’ learning outcomes. They improve their teaching practices by soliciting feedback and engaging in cycles of planning, teaching, reflecting, discerning problems, and applying new trends and strategies. Teachers use reflection and feedback to formulate and prioritize goals for increasing their subject knowledge and teaching effectiveness.

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