Curriculum for General Knowledge

Grades I – III

2017

MINISTRY OF FEDERAL EDUCATION & PROFESSIONAL TRAINING, ISLAMABAD

GOVERNMENT OF PAKISTAN

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Chapter 01: Introduction

1.1. General Knowledge Curriculum

The primary focus of the revised 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. The new revised curriculum for general knowledge aims to provide our students with high quality experience which is based on inquiry and hands on experience for the students.

It is comprised of concepts from science, social studies, and Islamiat/Ethics:

- Knowledge of science is drawn primarily from the domains of life science, physical science, earth and space science;
- Knowledge of social studies is drawn primarily from the social science disciplines of history, geography, economics, citizenship, government and culture; and
- Knowledge of Islamiat/Ethics is drawn from the disciplines of religious beliefs, social norms/customs, festivals and moral values.

The Curriculum for General knowledge is designed for the young students to develop basic knowledge, skills, interest, and habits of mind 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 individuals capable of understanding and evaluating information, developing knowledge, skills, positive attitudes and healthy habits, and of making informed decisions.

To ensure that students benefit from the curriculum, this Curriculum has been developed with the following emphasis:

- Broadening the learning space
- Strengthening the interface with pre-primary and secondary school curricula
- Integrating students' learning experiences
- Promoting life-wide learning
- Developing students' independent learning ability
- Enhancing interest and curiosity in science and technology
- Putting emphasis on students' affective development

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 been traditionally content-stressed thereby neglecting the basic thinking and process skills areas that essentially contribute to an individual's overall comprehension and application of the subject knowledge.

Therefore, following trends have been considered in the development of General knowledge Curriculum:

- To decrease number of topics and take a more ``Depth rather than Breadth" approach. In-depth understanding of concepts enables students to have a solid basis so as to build and acquire new knowledge and solve problems.
- To make the subject personally relevant to the lives of students so that they should experience an interest in the learning. For example, science students often complain that the science they learn at school plays no role in their lives, and they show little interest in continuing to discover science.
- To adopt a constructive approach towards learning. A constructivist curriculum is mostly built on major concepts by revisiting them with increasing sophistication at various levels. It not only encourages a logical developmental sequence of important knowledge, skills and in-depth understanding but also promotes learning in late grades.

1.3. Guiding Principles for the Curriculum Development

This General Knowledge Curriculum for Grades I-III is:

Consistent with the Nature of Learning: The Curriculum is designed to stimulate students' curiosity and develop their interest in learning and to enable the students to learn more about themselves and the world around them through activities. Young children are natural inquirers and problem solvers. 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 should continue to question, to explore and to investigate with increasing levels of insight and skill.

Coherent: This Curriculum has been designed so that, wherever possible, the ideas taught within a particular grade level have a logical and natural connection with each other and with those of later grades. Effort has been made to select the topics and the learning skills in a well-integrated manner and appropriate to each grade level. In addition, there is a progressive articulation of concepts, skills, and content. This spiraling is intended to prepare students to

understand and use more complex concepts and skills as they advance through the learning process.

Developmentally Appropriate: This Curriculum takes into account 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 experience.

A developmentally appropriate curriculum provides for all areas of a child's development viz: physical, emotional, social, linguistic, aesthetic, and cognitive and 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 (up to 10 years of age) not only influence their later functioning in school but also can have effects throughout life.

Comprehensive: This Curriculum does not cover all the topics that have been traditionally taught in the early primary classes. However, it provides a basic foundation of knowledge and skills in relevant content areas. Technological applications should be studied through contexts taken form daily life processes, materials and other social contexts. By emphasizing depth over breadth, This Curriculum seeks to empower students rather than intimidate them with a collection of isolated and eminently forgettable facts. Teachers are free to add related concepts, skills, and daily life applications but they are expected to achieve all the objectives specified in this Curriculum for the respective grade level in order to meet the eventual standards for the school education.

Feasible: This Curriculum can be taught with easily obtained resources and materials. Teacher Guide Manual is strongly recommended for teachers, which will contain sample lessons on each topic for each grade level. The Teacher 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 that General Knowledge Curriculum includes a broad range of contents across disciplines that are socially relevant, intellectually engaging, and personally meaningful to children. The Curriculum contents relate directly to students' needs

and interests. As such relevance of content areas to other endeavours will enable students to transfer skills gained form one area of instruction into their other subjects and into their lives outside the classroom. Therefore, this Curriculum provides skills in a context that enables students to experience the joy of learning.

Reliant upon Effective Assessment Practices: Students; achievement of the Standards and outcomes in this Curriculum are to be best assessed by using a variety of assessment instruments. 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 as a way 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 broad guidelines for teachers whereby they will accept the responsibility for actively supporting children's development and to provide opportunities for children 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 child. The guidelines also describe various aspects of the teachers' role in making decisions about classroom practices.

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 body. This Curriculum, therefore, emphasizes student exploration through inquiry, and thereby calls for a shift from teacher transmitting information to students constructing knowledge, which for teaching instruction will inter alia connect "lessons" with students' daily lives.

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 work best for all children requires knowledge about each child, knowledge of how children learn 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 contest.

Therefore, this Curriculum emphasizes the importance of teaching instructions that should maximize students' potential and enable them in understanding of the intertwined nature of learning. Also this Curriculum builds upon what children already know and are able to do (activating prior knowledge) to consolidate their learning and to foster their acquisition of new concepts and skills.

1.4. Purpose of the Curriculum

The Curriculum sets out what all students should know, understand, value and be able to do as a result of the programs they undertake in schools form Grade I to Grade III. Whereas the learning outcomes aim to ensure that all students in these grades will have the knowledge, understanding, skills and moral values necessary to participate and prosper in the dynamic world of 21st Century. Rather than being prescriptive about what must be taught, this Curriculum will be used to develop and implement the teaching and learning programs according to the needs and characteristics of the students.

Therefore, this Curriculum has been designed to:

- Identify knowledge, skills and attitudes that nurture the development of scientifically & technically literate and responsible individuals;
- Provide teachers with an overview of science, social studies and Islmiat/Ethics and to act as a companion document to implement the Curriculum focus;
- Briefly describe the nature of instructional environment in which effective learning can take place;
- Provide suggestions for the assessment and evaluation for students' learning and achievement; and
- Provide suggestions for the use of variety of learning resources.

Chapter 02: 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 literally dictates 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 presents a paradigm shift from the characteristics of traditional approaches to Inquiry-based approaches.

2.2. The student-centered Curriculum

Student is the Centre of learning. Learning experiences need to be relevant to students' daily living. 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 apposed to the traditional teacher-centered one, whereby teachers are desired to earnestly look after the students' learning needs instead of their teaching compulsions.

2.3. An outcomes-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 an 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 will be attained as students acquire General knowledge and use the processes defined and explained in this document.

Chapter 03: Content Organization

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

Therefore, a careful selection of topics/themes is made that will promote greater understanding instead of covering a "little bit of everything". Although the contents are organized 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 "life in the past" 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 Standard for General Science Curriculum Grades IV-V (2017) & Social Studies Curriculum Grades IV-V (2017) and Learning Themes form Islamiat Curriculum Grades III-V (2017).

Each theme 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 outcome 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 and Grade III for the Islamiat/Ethics.

3.1. Knowledge

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

- Our beliefs
- History
- Geography
- Economics
- Citizenship

- Life Science
- Physical Science
- Earth and Space Science

Note:

1. By the end of Grade II, students will have essential knowledge of Islamiat that serves the requirements of learning for Grade III. Islamiat is introduced as separate subject from Grade III.
2. By the end of Grade III, students will have essential knowledge of Science and Social Studies that will become foundation of learning for Grade 1V. Science and social studies are separate subjects from grade 1V.

3.2. Skills

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

Four broad areas of the skills are outlined. Each group of skills has been taken from the skills defined for Science Grade IV-XII. These will assist in the development of skills with their increasing scope and complexity of application in later 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 equipments.
C. **Analyzing and Interpreting:** These are the skills of examining information and evidence, of processing and presenting data so that it can be interpreted, and of interpreting, evaluating, and applying the results.
D. **Communication and Teamwork:** Communication skills are essential at every stage where ideas are being developed, tested, interpreted, debated/discussed, and agreed upon. Teamwork 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 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:

Appreciation of and interest in Science, Social Studies and Islamiat/Ethics:

Students will be encouraged to appreciate the role and contribution of science & technology, behavioral science and religion in their lives, and 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 Islamiat concepts. General Knowledge of these disciplines will contribute to attitudinal growth when students are involved in discussion and activities that stimulate their interest and curiosity, this increasing their motivation for learning and encouraging them to become interested in further education.

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 and respect for reason and evidence, initiative and perseverance, and creativity and inventiveness.

Collaboration: Students will be encouraged to develop attitudes that support collaborative activity. Students are provided with opportunities to work in groups and 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.

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

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 04: 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**
OUR BELIEFS • Oneness of Almighty 'Allah. • Creator of Mankind and All Things.	*All the students will be able to:* • Recognize that Almighty Allah has created us. • Recognize that everything in the world is created by Almighty Allah. • Name the creations of Almighty Allah (human beings, animals, plants, trees, stars, sun etc.).	• List and share some creations of Almighty Allah which they know.
	• Recite Kalimah Tayyibah with its Urdu and English translation (only for Muslims)	
	• Recite Ta'awwuz and Tasmiyyah with their Urdu and English translation (only for Muslims).	
MY SELF Introduction to Self • (Name, Age, Likes and Dislikes, Games, Favorite Food, What they want to be	• Describe their selves briefly.	• Work in groups and share some information about themselves with group members.

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
when they grow up) • Good qualities	• Identify good qualities in themselves (telling the truth; respecting elders and listening to their advice; getting up early in the morning). . • Recognize the good qualities in others.	
	• Identify the ways in which they are same and different from others with respect to physical characters and likes and dislikes. • Verbally narrate information about themselves and their likes and dislikes.	• Grouping students themselves on the basis of their likes and dislikes.
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.
	• Name the five senses.	
	• 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	• Express their likes and dislikes in terms of taste, smell, sight, hearing and touch.

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	colors; Smell: pleasant, unpleasant).	
Keeping Oneself Clean • Ways of Cleanliness. • Cleanliness and Health.	• Identify the ways and means 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 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 (Cough and diarrhea etc.) • Recognize the fact that germs can cause disease and list ways to avoid germs.	• Design messages related to health and cleanliness and share with family.
My Family and Friends • Family Members. • Respecting Family Members. • Key events in their parents' lives.	• Identify some family members (parents, brothers and sisters, grand-parents, aunts and uncles and cousins (paternal and maternal)). • List their friends at home and school as well. • Narrate the special qualities	• List family members that live with them. • Describe their favorite family member and why?

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	of some of their friends.	
	• Recognize that they should respect all family members and friends. • List things that their parents did differently in past from today.	• Conduct an interview with parents and grandparents to find out how things were different in the past 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.
	• Recognize the importance of following rules. • Identify the general rules of playing a game. • Observe the rules when playing a game. • Understand the importance of playing games and exercise for better health.	• Find out at least three rules of their favourite game.
What I want to be? • Common Professions. • Profession they want to choose.	• Identify some professions from pictures (teaching, farming, medicine). • Recognize the role of doctors and nurses in treating health disorders. • State what they would like to be when they grow up and why.	• State what they would like to be when they grow up (Role play).

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Gather information from other students in their class regarding what they would like to be when they grow up.	
PROPHETS • Names of Prophets (Hazrat Ibrahim (A.S), Hazrat Musa, (A.S), Hazrat Isa (A.S) and Hazrat Muhammad (Sallallah-u-'alaihiwaalihiwasallam)) • Life of Hazrat Muhammad (Sallallah-u-'alaihiwaalihiwasallam).	• Name prophets (Hazrat Ibrahim (A.S), Hazrat Musa (A.S), and Hazrat Isa (A.S) and Hazrat Muhammad (Sallallah-u-'alaihiwaalihiwasallam). • Recognize that Hazrat Muhammad (Sallallah-u-'alaihiwaalihiwasallam) is the last prophet of Almighty 'Allah.	
	• Narrate the biography/Seerat of Hazrat Muhammad (Sallallah-u-'alaihiwaalihiwasallam) (birth, early upbringing and character).	
	• Recognize that they should recite Sallallah-u-'alaihiwaalaihiwasallam whenever they read, say, and hear name of Hazrat Muhammad (Sallallah-u-'alaihiwaalihiwasallam). (only for Muslims)	
	• Recite with translation the short form of Darood.(only	

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	for Muslims)	

Neighbourhood
• What is Neighbourhood?
• Key Places in a Neighbourhood.
  • Kinds of Houses.
  • Cleaning homes.
	• Recognize that many families living in a locality make a neighborhood.	

	• Describe their neighborhood (in terms of people, mosque, shop, street, park etc.). • Identify key places on a pictorial map of a neighborhood. • Describe and draw a picture of their home. • Identify the different kinds of houses families live in (bungalow, mud house, hut, and apartment). • Identify what makes the neighborhood clean and dirty. • Understand the importance of keeping their homes and neighborhood clean and how dirty homes impact health	• Describe and draw a picture of their neighborhood.
OUR COUNTRY: PAKISTAN • Name of the country. • Flag of Pakistan..	• Recognize the full name of our country • Draw the flag of Pakistan. • Identify what the colours and symbols on the flag represent.	• Gather any information about their country and share with their class. • Find out how many students from different faiths study in their primary school to understand the significance of the white part of the flag

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
		and share in the class and assembly
School • People in School. • Activities in School. • Obeying Rules.	• Describe and draw a picture of their school. • Identify the people they interact with in school (teachers, students, principal, service providing staff etc).	
	• List the activities they engage in at school. • List the rules they follow in the classroom. • Understand why rules are necessary and follow class and school rules.	
	• Recognize that they make different friends in school and these friends can be from different social and religious background. • Recognize that they should respect everyone in their school (teachers, class fellows, service providing staff etc. regardless of their faith ethnicity and social background). • Understand the importance of keeping their school clean.	
Prayer	• Recognize that people pray	

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
• Mosque/Masjid. • ¯Azan and Namaz. • Name of Five Prayers. • Places of Worship for Other Religions.	to thank God for His blessings and bounties.	
	• Recognize that people pray in different ways. • Name the five prayers that Muslims offer daily. • Recognize ¯Azan as a call for Namaz.	
	• Find out about the Mosque/Masjid in their neighbourhood. • Inquire about other places of worship in their neighbourhood (church, temple, gurdwara, etc).	
	• Recognize that they should respect all places of worship and all religions.	
Park/Playground • Need for Parks. • Things in a Park. • Keeping Parks Clean.	• Identify the need for parks in a neighborhood (for playing, doing exercise, riding, meeting with friends and other people). • List different things in their Neighborhood Park/ playground.	
	• List ways to keep parks/playgrounds clean (don't throw rubbish and don't pluck flowers).	• Design the park they would like to go to.

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 Airports, Railway Station and Harbour.	• Identify the means of transportation which people use in their surroundings. • Differentiate between slow & fast means of transportation in their surroundings.	• Bring pictures of fast and slow means of transportation and share the difference. • Arrange the pictures from slowest to fastest means of transportation.
	• Identify slow & fast means of transportation from charts and pictures (cycle, aero plane, car etc).	
	• Identify the places where buses and trains stop, aero planes land and ships berth. • Describe the activities that take place at a bus stop, station, airport, and harbour.	
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 Every One. • Practicing Good Qualities. • Eating manners	• Greet everyone by saying Salam, Hello, Good Morning etc. • Use *please* and *thank* you when asking for and receiving something and sorry for mistake and excuse me to address.	

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Identify and list various aspects of good character (punctuality, speaking politely, kindness, honesty and truthfulness). • Recognize the importance of telling the truth, being honest, speaking politely, being kind etc. to others.	
	• Demonstrate the etiquettes of eating (don't waste food, eat with clean hands, don't drop food around). • Recite *Du'a* both before and after taking meal. • Understand the hazards of eating dirty food from outside their homes. • Recognize the importance of washing food items before eating.	• Work in groups and make a list of some additional good manners.
HOLY BOOKS • Name of the Holy Books and their Prophets. • Qur'an - the last Holy Book. • Qur'an - the Guidance for Mankind. • Respecting all Holy Books.	• Name the Holy Books revealed by Almighty 'Allah. • Identify the Prophet to whom almighty ' Allah revealed each Holy Book.	• Share any moral lesson learnt from their Holy Books.
	• Recognize that Qur'an is the last Holy Book revealed by Almighty 'Allah.	
	• Recognize that the Qur'an and other Holy Books tell us how to live a good life.	

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Recognize the importance of respecting all Holy Books.	
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.	• Identify the plants they see around them. • Recognize the differences between the plants they see around them.	
	• Recognize the importance of plants/trees as a source of food, shade, and shelter.	
	• Identify the things around them that are made up of plants/trees. • Identify the animals they see around them.	
	• Identify the differences between the animals they see around them.	• Bring picture of your favorite pet animal and write how you take care of it on a chart.
	• Identify the food which different animals eat.	
	• Recognize the importance of animals as a source of food, and transport.	
	• Identify the homes of animals (nest, burrow). • Differentiate between animals that can and cannot be kept at home.	

4.1 Grade – I Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Identify the measures for the better care of domestic animals. • Recognize that plants and animals need water, food, and air to live. • List ways in which they can take care of things around them.	
EARTH AND SKY **Earth** • Shape of the Earth. • Earth's features.	• 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.
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.	

4.2. Grade – II

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
BLESSINGS/Bounties of Almighty `ALLAH • Blessings/Bounties of Almighty 'Allah. • Brief Connotations in Arabic and their Meanings.	• Recognize that Almighty 'Allah gives us innumerable blessings/Bounties (home, family, food etc.).	
	• Recognize that everyone should thank Almighty 'Allah for His blessings/Bounties.	• Recite a poem to thank Almighty Allah, like Thank you God.
	• Recite brief connotations in Arabic that Muslims use in daily life with their meanings (Insha 'Allah, Ma sha Allah, Al-Hamdulillah, Yarhamukallah). (Only for Muslims)	
OUR COUNTRY: PAKISTAN **Map of Pakistan** • Map of Pakistan. • Provinces of Pakistan. • Significance of the National Flag.	• Recognize the map of Pakistan. • Name the provinces of Pakistan. • Recognize the significance of the national flag • Recognize that all countries have a flag.	• Collect pictures depicting the cultural diversity of Pakistan. Make a collage.
Quaid-e-Azam • Events and Contributions.	• 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.

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
Allama Iqbal • Events and Contributions.	• 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 Allama Iqbal's poetry.
VILLAGES AND CITIES **Lives in the villages and cities** • Key Characteristics of a Village and City. • Comparison of Village and City Life. • Common Professions in the Village / City.	• Recognize that the people of Pakistan live in villages and cities. • Identify key characteristics of a village (buildings, facilities, noise and the work people do).	• Visit any nearest village and describe its key characteristics.
	• Identify key characteristics of a city. • Compare village and city life.	
	• Describe a day in the life of villagers (male and female).	
	• List some of the common vocations/professions of a village / city (cobbler, musician, tailor, butcher etc.).	
	• List similarities and differences of their city or village with that of other cities or villages in different parts of the country/world.	
	• Indicate choice of place to	

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	live and give reasons.	
FASTING AND RELIGIOUS FESTIVALS • Fasting. • Ramazan.	• Recognize the importance of fasting for people of all faiths. • Recognize that people of all faiths fast at different times of the year.	• Find out when and how people of different faiths fast and share with the rest of the class
	• Recognize that Ramazan is the month of fasting for Muslims. • Identify what Muslims do during the month of Ramazan.	
Religious Festivals • ' Eid-ul-Fitr& ' Eid-ul- Azha. • Other Cultural and Religious Festivals.	• Describe how people celebrate ' Eid-ul-Fitr& ' Eid-ul-Azha.	• Arrange an Eid-milan Party at school.
	• Identify other cultural and religious of other faiths festivals celebrated in their village/ city.	• Find out details of religious festivals of different faiths and present to the class
Rights and Responsibilities of a Government • Providing Goods and Services. • Rights of People. • Responsibilities of People.	• Identify some goods and services that government provides for the people of the village/city (water, roads, electricity, education and hospitals).	
	• List three rights they have (Right to education, play, health care).	

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Understand that everyone has a right to practice their own religion freely	
	• Identify their responsibilities with respect to each right (go to school regularly and do homework, take care of play equipment and do not pluck flowers in parks, wash fruits and vegetables before eating, boil water, respect all religions and sects).	
THE NATURAL ENVIRONMENT Land • Living and non-Living Things. • Some Natural Resources. • Importance and Use of Land.	• Recognize that the natural environment comprises living and non living things. • Recognize the importance of trees and animals in our environment.	• Draw pictures of living and non living things in their surroundings.
	• Name some natural resources. • Recognize the importance of natural resources.	
	• Recognize the importance of the resources of land. • List the ways in which people use the land.	
Water • Water in our lives. • Sources of Water. • Uses of Water. • Shortage of water.	• Recognize the importance of water for living things.	
	• Identify the natural sources of water.	• Design a Role play for the safe use of water.

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Identify the 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.	
	• List the daily activities in which they use water. • Recognize that clean water should be used for drinking and cooking purposes. • Understand that boiling and filtering are methods of purifying water.	
	• Recognize that there are some people who always face shortage of water.	
Plants • Major Parts of a Plant and • Their functions. • Plant and Seeds. • Growth and Change in Plants. • Uses of Plants.	• Name the plants that grow in their surroundings. • Identify major parts of a plant.	
	• List the functions of the root, stem, leaf and flower.	• Soak few gram seeds in a jar fill with mud and observe.
	• Identify the different kinds of leaves found around them.	• Collect different types of leaves and paste on chart with names. • Trace the outlines of leaves on a chart and colour them.

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
		Cut out the coloured leaves and display in the classroom.
	• Identify the roots that are eaten by people. • Name the plants around them which have flowers and which do not have flowers.	
	• Identify that all fruits have seeds in them. • Recognize that some plants grow from seeds.	
	• Identify that soil and water is needed to grow a plant.	
	• Identify the ways in which plants are used (food, clothing, shelter etc.).	
Animals • Animals on Land, Air and in Water. • Use of Animals. • Growth and Change in Animals. • Places for Animals.	• List the animals they see in their surroundings (land, air and water).	
	• Recognize that animals that live on land are different in features from those that live in air and water. • Recognize that all animals have young that grow into adults.	• Visit the zoo, observe how they look like and share in the class. • Alternatively cut out pictures of different animals and paste on a chart to make a zoo.
	• Name different animals and their young ones (horse and foal, swan and cygnets, frogs	

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	and tadpoles, butterflies and caterpillars).	
	• Identify that some young animals do not look like their parents (frogs and butterflies).	
	• List the animals that feed their young and look after them until they are grown.	
	• Recognize that there is a need for shelter for living things. • Name different places where animals live.	
Uses of Earth's Resources • Need to Use the Resources. • Natural Materials. • Human Made Objects.	• Recognize that human being use the resources of the Earth to meet their needs (land for farming, river/ sea for fishing etc.).	
	• Recognize that people work to earn for living and through their work help each other. • Understand that all professions should be respected	• Visit their neighborhood to identify what kind of jobs their neighbors do.
	• Differentiate between the materials that are found naturally and the objects that are made from these materials by humans.	

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
Agriculture • Major Crops in Pakistan. • Processing (Making Products). • Animal Rearing in Pakistan.	• List the major crops grown and animals reared in Pakistan. • Recognize that people process the crops they grow for making products (cotton to thread to cloth to garments).	• Collect the seeds of major crops.
	• Identify the natural source of common products sold in the market (biscuits made from wheat).	
Conservation of the Earth's Resources • Wasting Water and Land. • Problems caused by Wastage of Water and Land. • Ways to Save Water and Land.	• Identify the ways human beings waste water.	
	• Identify problems caused by wastage of water. • Suggest ways to save water.	
	• 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.	
Heat and Light • Common Sources	• Identify sources of heat and light in their homes, schools and surroundings.	• Observe & identify the light sources and list them. • Rub hands and observe how

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
(natural and Human made. • Uses of Heat and Light. • Methods of Producing Heat. • Intensity of Heat and Light.	• Group sources of light and heat into natural and human made.	the heat produces.
	• Identify and describe methods of producing heat (burning and rubbing).	
	• 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.	
DEVELOPING A GOOD CHARACTER Learning Good Character from the Lives of Prophets • Biography/ Seerat of Hazrat Muhammad (Sallallah-u-'alaihiwaalihiwasallam). • Examples from the Lives of Hazrat Musa (A.S) and Hazrat Isa (A.S).	• Narrate events from the Biography/ Seerat of Hazrat Muhammad (Sallallah-u-'alaihiwaalihiwasallam).	
	• Narrate events from the life of Hazrat Musa (A.S) and Hazrat Isa (A.S).	
	• Identify examples of good character from the life history of Hazrat Muhammad (Sallallah-u-'alaihiwaalihiwasallam) (truthfulness, love, forgiveness).	
Helping others • Sharing Things.	• Understand the importance of sharing things. • List the things they share	

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	with others (toys, books, stationery, 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).	
	• Narrate an incident when they helped someone by sharing food, toys, books, etc. • Identify ways in which people are interdependent and how they help each other to make a difference in their own lives and lives of others.	• Demonstrate how to help his/her class fellow in completing class work.
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 being are equal and important. • Identify ways in which people are similar and different.	
	• Recognize the need to respect all people as they are born equal and with human dignity.	
	• Identify ways in which they can show respect for others. • State the importance of taking turns.	

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Identify occasions when it is important to wait for one's turn. • Take turns when speaking and respect the rights of others to speak. • Understand the importance of queuing up and waiting for one's turn. • Understand that different individuals have different opinions and respect others ideas and opinions.	
Forgiveness and Forgiving others • 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, using derogatory words).	
	• Understand that mistakes are a natural outcome of learning and nothing to be ashamed about or to make fun of. • Understand 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.)	

4.2 Grade – II Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Recognize that when people hurt them, they have to forgive them.	
Being Just and Fair • Fairness and Unfairness. • Promoting Fairness.	• Identify fairness and unfairness in stories. • Identify ways of making unfair situations fair. • Accept responsibility for treating others unfairly. • Change behaviour when it is shown to be unfair. • Understand that fair dealing must be exercised with everyone regardless of their social class, cultural background and ethnic background (inclusion of all in games and group activities).	• Tell any moral lesson based story to a group and discuss the lesson learnt.

4.3. Grade – III

4.3 Grade – III Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
THE EARTH *AS A* LIVING PLANET **Habitats** • Definition of 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 help to sustain life on Earth.	
	• Define the term habitat. • Describe the different habitats for living things (polar regions, desert, forest, sea and rivers). • Define the term eco system.	
	• 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.
	• Name plants and animals that live in each of the different habitats. • Identify the ways plants and animals adapt to their habitat (camel, fish, polar bear, cacti, lotus, pine trees etc.).	• Make an aquarium for the class.
	• Identify the ways human activities affect the Natural habitats. • Describe the effects of human activity on the habitats.	
Changes in Living Things Life cycle of some Animals and plants.	• Compare young plants and animals with their parents (from pictures, through observation etc.). • Recognize that plants and	

4.3 Grade – III Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	animals change in form as they go through different stages of their life cycles.	
	• Identify the changes that animals and plants undergo during their life (hen, sunflower).	
	• Interpret diagrams of the life cycles of animal and plant to identify the different stages.	• Collect and paste pictures of some animals and their babies.
	• Sequence the stages of the life cycle of a plant/animal. • Identify the stages of life cycle of plants (germination, growth and development, reproduction and seed dispersal). • Identify and describe different strategies that increase the number of offspring that survive (e.g. a plant producing many seeds, mammals caring for their young ones)	
	• Illustrate the life cycle of an animal and a plant.	
Sun • Time and Directions. • Shadows. • Reflection and rainbows.	• Recognize that while living on the Earth we see the sun rising in the East and setting in the West.	
	• Name the four cardinal directions.	
	• Name places towards North, South, East and West of the school/home.	

4.3 Grade – III Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Describe the size of the shadow with the position of the sun.	• Fix a pole in school ground and observe the size of the shadow with the position of the sun.
	• Recognize that the size of the shadow created by the position of the sun was used to tell the estimated time. • Recognize familiar physical phenomena (reflections and rainbows) to the behavior of light.	
Energy and energy transfer • Common sources and uses of energy	• Identify sources of energy (e.g the sun, flowing water, wind, coal, oil, gas) and understand that energy is needed to move object and for heating and lighting.	
NATURAL, HUMAN AND CAPITAL RESOURCES **Kinds &uses of Natural Resources** • Natural resources, Human Resources, and Capital Resources. • Goods and Services. • Buyers and Sellers. • Scarcity.	• Define the terms 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.).	• Collect the pictures of natural human and capital resources.
	• Define the terms: goods, services, buyers and sellers.	
	• Identify how a good or service is made available.	
	• Identify the main goods and services of their local area	• Visit nearest market and list what is being sold there.

4.3 Grade – III Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
	• Recognize the concept of specialization (being an expert in one job or service or product).	
	• Recognize the need for interdependence as not all goods and services are available in their area.	
	• Define scarcity.	
	• Recognize that people make economic choices because goods and services are limited.	
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 etc)	
	• Predict that what would happen if natural resources were used up.	• Make a poster to show what would happen if all the natural resources are used up.
	• Suggest ways to save natural resources.	• Design a poster to communicate ways to conserve natural resources.
	• Identify the endangered animals of Pakistan. • Suggest ways to protect the endangered animals.	
	• Identify animals, which are extinct.	
	• Recognize that different	• Prepare a flyer to educate

4.3 Grade – III Learning Themes and Students' Learning Outcomes Knowledge, Skills and Attitudes		
Themes	**Students' Learning Outcomes**	**Activities**
Food and Feeding • Animals' food. • Animals' Teeth and their Food. • Basic Food Groups. • Balanced Diet. • Factors for healthy living (Cleanliness, Proper Sleep, and Exercise).	animals have different diets. • Identify that the shape of teeth helps animals to eat their particular foods. • Recognize that healthy living requires eating a balanced diet, keeping clean, getting a good night sleep and exercising regularly.	others of the importance of cleanliness for healthy living.
	• Classify foods into the basic food groups. • Define a balanced diet.	• Prepare a chart of basic food groups.
	• Identify foods for the three meals of a day to prepare a balanced diet.	• Mark the missing food group in their diet.
	• Recognize the importance of appropriate rest and a good night's sleep for healthy living.	
	• Identify the ways to get sufficient exercise to stay healthy.	
PAST AND PRESENT **Past and Present Things** • Differences in past and present things.	• Recognize that present time is different from the past.	
	• Identify how schools, communities, 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 and observe what changes occurred in people's lives.

Inventors and Inventions • Common Inventions (past and present). • Effects of Inventions on lives. • Famous Inventors.	• Explain why inventors are important.	
	• Identify the qualities/attributes of an inventor.	
	• Identify major objects invented and their inventors over the last century.	
	• Imagine and narrate how life would be without any one major invention.	Discuss and in groups what they like to invent.
	• Classify inventions that improved farming, household chores, space exploration and communication.	
	• Compose a paragraph about their favorite invention.	
	• Predict how an invention could change life in the future.	• Discuss the most important invention in their lives.
	• Identify recent inventions (personal computers, fax machines, microwaves, CDs etc.) and how they have changed the way people work and play.	• Collect the pictures of recent inventions.
	• Gather and organize information and write a report about a recent invention.	
Tools and Machines • Common Tools Used in the Past. • Using Tools to make work easier. • Force as Push and Pull . • Uses of Force.	• Recognize that people in the past used tools to make their work easier. • Name the tools from the past given in the pictures and describe their functions. • Recognize that people today use different tools and	

• Simple Machines. • Force and Motion.	machines to make their work easier.	
	• Name some simple machine they see/use at home (scissors, hammer, pliers).	• Draw some tools being used in daily life.
	• Explain how simple machines make work easier.	
	• Recognize that the position and shape of an object can be changed by a force (push and pull).	
	• Recognize that push and pulls move things fast or slow.	
	• Recognize from pictures of the past that force applied by humans and animals moved vehicles while today vehicles are moved by machines (Tonga, bullock cart, cycle, pushcart, bus, motorcycle and car.	
	• Observe and describe how motion of vehicles can be changed by applying force (speed up, slow down, change direction etc.).	
	• Recognize that greater the force, the greater the change in the motion of an object.	
MAKING THE WORLD A BETTER PLACE The Role of the Government and Citizens • Individuals and Community. • Key Public Issues. • Need of	• Describe the activities that individuals perform for the welfare of the local community.	
	• Identify key public issues in their local area (drinking water, school, sewage system etc). • Understand what basic	

Government. • Government and People. • Good Citizenship.	human needs and rights are. • List three rights they have(rights to education , play ,health care.	
	• Inquire into one issue, identify its causes, suggest solutions and take a responsible action to solve the issue.	
	• Recognize that people organize themselves to meet their needs.	
	• Describe what government does to meet the needs of the people.	
	• Suggest ways the government and people can work together to meet people's need in the area.	• Discuss main issues in a group and assign three major tasks for local Government.
	• Identify ways they can demonstrate good citizenship (playing fairly, helping others, following rules, taking responsibility for one's actions).	
	• Identify the personal traits of good citizens (trustworthiness, respect for law, responsibility, honesty and respect for the rights of others.	
Working out Disagreement • Common Conflicts. • Causes of Conflicts. • Impact of Conflicts. • Resolving Conflicts. • Preventing	• Know that difference exist across space and time. • Identify the disagreements/conflicts that occur at home, in school and in the local community (from stories and role plays).	• Resolve a class conflict through a role play.

Conflicts.	• Identify the feelings of people in different conflicting situations.	
	• 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.	
Safety • **Indoor Safety** • **Outdoor Safety** • **Natural disaster**	• Understand the risk and danger associated using electric appliances. • Practice safety measures while using electrical appliances. • List the various hazards they can face at home(naked wires , damage roof, broken glass) • Understand the ways of being careful and staying safe in the classroom • Recognize the fact that some natural and manmade disaster can be dangerous for human beings • Recognize basic features of natural disasters such as earthquakes, floods and fire.	• Demonstrate through a role play how to rescue themselves and others during a disaster.

Chapter 05: Teaching and Learning

5.1. The Role of Teacher

Teacher has highly important responsibilities in implementing vital trends in the curriculum. Implementing the curriculum means that when teachers design and develop learning and teaching strategies to suits the needs of their students, they must ensure that these strategies include learning opportunities and enriching experiences for their students aimed 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:

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

5.2. The Changing Nature of Teaching and Learning

Traditional Instructional Practices generally have shown that:

- The majority of classroom time is spent on teachers lecturing, students listening, and students 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 guide practice, and use closure.
- Fewer connections between school learning and the everyday world.
- Knowledge of subject becomes an exercise in naming and memorize.

In such an environment, the role of the student is to memorize information, conduct well-regulated experiments, and performs activities using a specific prescribed procedure and is then 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 among facts to build conceptual understanding. Teaching for conceptual change demands for knowing the preconceptions that students bring to the classroom and purposefully designing, 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 or classroom learning.

At early grades the purpose of this curriculum is not memorize the ''right'' answer but for them to move along a learning continuum toward a deeper understanding of concepts and process. 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 student 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. They need to learn, analyze, and appraise, new development in the teaching and learning. For example, developmentally appropriate instructions describe an approach to education that focuses on the child as a developing human being and lifelong learner. This approach recognized 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 accelerated 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, 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 his or her existing structure of self. 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 on little 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 and senses and path, it can into a person's brain/body system. The brain, after all, is not a sequential, but a parallel processor and thrives 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 sign by signing, and how to sell by selling. The ''real'' and the ''concrete'' and far better teachers than the hypothetical and the abstract minded.
6. **Positive Emotions Greatly Improve Learning.** Feeling 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 can't hold a candle to learning that is joyful, relaxed and engaging.
7. **The Image Brain Absorb 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 a 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 '' Student will value and use their learning as a process of obtaining knowledge based upon observable evidence.'' Teacher 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 as fellow.

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 word it provides experiences that help students acquire concepts, skills and abilities of inquiry, and understanding about inquiry. Inquiry teaching takes children to new levels of awareness and environment of science. 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 answer, they gain a more meaningful and longer 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.
Individuals and groups of students analyzing and synthesizing data without defending a conclusion.	Groups of students 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 experiment.	Applying the results of experiments to scientific arguments and explanations.
Management of material and equipment.	Management of ideas and information.

Traditional educational systems have 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.

Here student learns not to ask too many questions, instead to listen and repeat the expected answers.

The inquiry-based classroom highlights that:

- **Learning is student-focused.**

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

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

Inquiry requires student 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, constructing meaningful experiences.**

Because students act as scientist, 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 important-and gain a greater understanding about the inquiry process and how it relates to learning.

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

Inquiry involves setting short and long term goal and adapting them to students, interests. Within this framework teachers might involve students in hand-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 the teacher, leading to effective communications.**

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

- **Assessment in ongoing.**

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 simples, hands-on assessment etc.

Assessment provides students with feedback and how well they are meeting expectation and in addition gives feedback on how well classroom ''lessons'' are going on.

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 student; 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 verity of starting point 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**

One of the inquiry skills that students need to learn is, asking questions.

Questioning in the classroom reflects students' innate curiosity and practical-mindedness. It can lead them to deeper understanding of the world that 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 work 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 afterward to explain what they observed and suggest possible follow-up investigations.

Good questions share the following characteristics:

- The questions must be answered
- The answer cannot be a simple fact.
- The answer can't already be known.
- The questions must have some objective basis for an answer.
- The question cannot be too personal.

2. Conducting Investigation

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

As students conduct their experiments, the teacher should continue in a role of mentor or guide, giving as a little direction as possible. Question 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 other class members.

Inquiry is as involving process. Student may not always arrived at the complete answer, but the point is they experience things that new and different, conduct investigations, supply evidence to support ideas, connect with scientist and experts, keep written record of thoughts and conclusions, and continuing 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, you may have to ask leading questions or even spoon feed them questions to get started. Don't get discouraged. Once they catch on, you'll see their enthusiasm and curiosity grown).

B. Learning-by-Doing Approach

Hands-on activities get children actively involved in science. 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''. Therefore students learn to do well only what they have appreciate doing. If students are expected to apply ideas to involve situations, then they must appreciate applying them in novel situations. If they practice only calculating answer to predictable exercises or unrealistic ''world problems'' then that is all they

likely to learn. Similarly students cannot learn to think critically, analyze information, communicate scientific ideas, make logical arguments, work as a part of team, and acquire other desirable skills unless they are permitted and encourage to do those things over and over in many 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, and practice.

Advantages of learning by doing approach

- Multiple teaching/learning methods can be integrated.
- Very student-centered.
- Process of ''discovery'' build self-esteem.
- Learning is more fun for students, teaching more fun for teachers.
- Other life skills can be learned, instead of only science contents.

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. As a group leader, the teacher should never freely give ''the answers'' to a problem/ question. Instead, the teacher helps direct 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 was 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.

C. Demonstrations

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

Conducting Interactive Demonstration

- Determine the purpose of demonstration and what want to achieve.
- Conduct the demonstration yourself to ensure the results are as you want.
- Prepare curricular materials or worksheets and ensure they 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-demonstration to address important conceptual issues and worksheet activities requires 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 extended students' learning.

A lot of teachers thing that they need a lot of sophisticated, expensive equipments to teach science and other subjects. While teaching and learning does require purchases, e.g. magnets for experiences with magnetism and cells, bulbs, and wire for electricity investigations, or maps, globe for social studies concepts, much General Knowledge Curriculum contents can be taught with simple, inexpensive and readily available materials: such as paper clip, soda straws, papers, balloons, rubbers bands, paper cups, clay etc. Similarly, outdoors (frame/garden/parks) is perfect resource 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 and many more concepts outside the classroom.

D. 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 material 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 use the master social skills necessary for living productive and satisfying lives.

An example of cooperative learning structure is described below:

Think-Pair-Share

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

- Student 'Think' alone but answer to 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 practice social skills, and individually demonstrate what they have learned from their partners.

Success on the academic task is assessed by the randomly asking students' questions, 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.

E. 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 student 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 about the conducting the 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 student 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 sit quietly and observe the role-play. Teacher must allow students enough time to read and understand their role and prepare to enact it. Also teacher have to involve the rest of the class by having them suggest questions for the discussion to follow.

After the role-play teacher reviews the role-play with the class. Then open 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 develop in preparing and conducting the role-play can be accessed through a checklist.

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 practice that are appropriate to their students and can prompt students to focus on the silent features of their experiences, observations, and the concepts they are working with to support critical engagement and movement toward desired learning outcomes.

Model building, consequences 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 learning. However, experiments and demonstrations may involve inherent risks for both the teacher and the student. Thus teacher/schools should make every effort to create a positive environment in which risk can be evaluated and reduced to an acceptable, safe level. Field work and field trips special vigilance with respect to traffic and road safety.

Chapter 06: Assessment and Evaluating Students' Learning

6.1. Assessment and Evaluation

Assessment provides a way to measure students' demonstration of learning. It helps us answer the questions: ''How much did they learn?'' and '' How well did they learn it?'' and ''How will did we teach it?'' it determines their progression through their learning experiences and enable 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 and making value 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 (Age5-8) 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.

Traditional methods of assessment, such as standardized tests, which require one line answer.

6.2. 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.

Traditional assessment, which often uses a 'drive-by' standardize, multiple-choice test, matching terms or a short-answer test, although can adequately assess factual knowledge and basic skills, it often fails to assess students' acquisition of higher-order thinking skills such as critical thinking, creative thinking, and problem solving. It is also believed that traditional assessment does not evaluate students' learning process. Moreover, this approach may not increase students' desire to learn 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 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.

6.3. 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 student to construct learning in the classroom through authentic experiences, assessment must be:

1. Open-ended, allowing for discussion and revision of new understanding.
2. Tolerant of divergent thinking of students' with naïve understanding and promote the notion of no ''one right answer.''
3. Presented in alternative mode, not just prepare-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 assignment, practical and written tests. When assessment is carried out on a continual basis, the teacher has the feedback required to plan this day-to-day teaching.

On the basis of assessment data, a teacher can decide whether to proceed the next the next teaching lesson/theme, carried 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 use to gain information about achievement should define what students should 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.

6.4. The Learning Assessment Process

In order to apply assessments effectively to determine whether student learning is expended 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 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 events based upon learning outcomes.
4) Include assessment activities within the learning designs.
5) Deliver learning.
6) Assess learning and learning events/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 need of the students. However,

Assessment should:

- Include a range of practices to allow for diverse learning styles of students.
- Be continuous, productive and constructive.
- Monitor and guide students' progress towards attainment of outcomes.
- Be appropriate to and based on the learning experience of all students.
- Be comprehensive.
- Be valid and reliable.
- Be effective and manageable.
- Promote improved teaching strategies.
- Monitor strengths and areas for further development.
- Be consistent with teaching strategies.
- Involve negotiation between teachers and students.
- Involve also students in their own record-keeping.
- Take account of students' self assessment, and
- Be in understandable language.

6.5. Assessor(s)

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

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 can get a good idea of what they are expected to accomplish and how they can demonstrate their knowledge. Students perceive the relationship between content acquisitions. Skill proficiency and assessment opportunities. By setting their sights 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 student assume the role of a researcher and uses critical thinking skills as they finds facts and make inferences to reach more conclusions. They are not receiving information passively and then simply giving it to 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 to good performance.
- Self-reflection is a part of self-assessment and 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). 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.

6.6. Classroom Assessment Strategies

Assessment is a ubiquitous aspect of classroom activity and is rarely a discrete event. It involves analyzing student work in light of that criteria and paying attention to what they are thinking, attending as much to their reasoning as to what they don't understand. It in 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 learner 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 student 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 assists 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
- Involves significant work that usually takes days to weeks to complete
- Calls on students to explain, justify, and defend
- Performance is directly observable
- Criteria are specified and explained to students along with the task
- There is no single best product or correct process
- Usually students works with real-world contexts and constrains

Performance-based Assessment

- Can assess communication, presentation, psychomotor skill.
- 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 checklist 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 and playing 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/ reflection permits a student to think about strengths and weakness, attitudes, interests and new ideas.

E. Portfolio

Portfolios offer another option for assessing student 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. What is placed in the portfolio, the criteria of selection, how the portfolio is used, how and where is stored, and how it is evaluated, are some of the questions to consider when planning to collect and display student 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 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.

6.7. Assessment Tools

Assessment tools are instrument for measurement or making judgments, based on the interpretation of evidence, to determine how well the student is performing of learning. 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 (Manitoba Education and Training, Reporting on Student Progress and achievement).
- 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 allow 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 outsets 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: all, contemplation, pre-contemplation)

There are two types of rubrics

- **Holistic rubrics** score the student' 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 specific essential elements so that student receives feedback on the level of performance for each essential elements (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 of 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, laptops, and other computers).

Assessment 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 an 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 the students with positive affective traits learn better, and more confident, and enjoy learning. But few, if any, teachers assess affective targets. Reasons include the subject matter-knowledge and skills – are seen as the primary focus 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 techniques/tools is a perfect device to assess students' achievement. Thus, several techniques may b utilized collectively to evaluate total growth of students in:

- Intellectual growth.
- Moral achievement.
- Physical development.
- Emotional growth.
- Social growth.
- Social development.

Chapter 07: Teaching Learning Resources

In general, student-teacher interaction in most classrooms in limited to reading, writing and speaking where textbook is the only teaching and learning tool. In addition to the textbooks, teachers, teacher 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 (filed, Guest Speakers etc).

7.1. Guideline 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 get up must be of the highest quality for primary school chider in the early grades. Young learners draw upon immediate personal experience as a basis for exploring concepts and skills. They enjoy hearing stories of the recent past as well as of long ago. They enjoy learning about events through the autobiographies and biographies and historical personalities therefore for early grades short pictorial representation, exposure to various media and firsthand experience through activates, must be include in the teaching and learning resources. Since the textbook serve as a framework for teaching throughout the year, following are essential features for a textbook, which need serious consideration.

1. Introduction to textbook explaining how to use the textbook.
2. Table of contents including subtopics.
3. The textbook must be in line with the National Curriculum.
4. The book must be attractive and engaging.
5. Written text need to be kept a minimum particularly for Grade I and II.
6. Illustrations must be appropriate in size, clear, colorful and must not be repeated.
7. Activities must be simple and within students capabilities (Grade I-III).
8. Must have accurate and up-to-date material.
9. The materials must be mistake free.
10. End-of-the-Chapter exercise must vary from chapter to gather. These should encourage students to think, develop skills, used information for a variety of purposes.
11. Exercises/questions must be contextually relevant (feasible to use in classrooms, affordable, examples form context to increase relevance and meaning).

12. Relevant internet links must be included.

Guild line for planning and writing and 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 f 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 tasks them to predict about scarcity of natural resources with references to growth of living things. Similarly, and 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 give at beginning of each chapter.
- Identify topics and subtopics that will be included (develop 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 problems solving according to grade level.
- Ensure that the content is up to date, accurate and developmentally appropriate.
- Contents must be in the line with chapter outcomes.
- Gender aspects must be excluded (women, minorities, and other perspectives).
- Language must be consistent, culturally appropriate and grammatically correct (as if talking to a group).
- Language must be disparaging, patronizing or have stereotypes about any religion, ethic group, sex, for people of differing abilities or any other community.
- Language must engage and hold reader attention.
- For Grade 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 tit 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
- Develop multiple intelligences
- Contextually relevant in keeping with local teaching and learning.
- Website links for further research

Guidelines for choosing a textbook

There may be many textbooks in the market. Teachers need to make a choice of the text from among them. Here are questions, answers to most of which, if in the affirmative, will indicate a good quality textbook.

1. Is the content accurate and up to date?
2. Are important skills developed?
3. Do the illustrations (maps, pictures, drawings, graphs) help us understand the content better?
4. Do the end-of-the-chapter exercises encourage students?
   a. To think
   b. To develop their skills
   c. To be creative
   d. Research oriented
5. Activities?
   a. Are activities suitable for the needs of the learner?
   b. Do activities include student participation in real life issues?
   c. Do activities promote the social studies skills (thinking, information, map and global, inter-personal, participation, etc.)
6. 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.)
7. Does it motivate students to think?
8. Do the text, questions and suggested activities stimulate interest that would lead to further study?
9. Are there biases? A) Religions b) national origin c) gender d) occupation e) class
10. Do the textbook present issues from many perspectives?
11. Does in include current issues, problems, and happening?

12. Is it related to the Outcomes of the Curriculum?
13. Is a teacher's guide included?
14. Is it attractive and appealing to children?
15. Is the language readable, understandable, and easy to follow? Is it appropriate for the students who will use it?
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 are related to 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 usually come with teacher's guide aimed at informing teachers of how the textbook is written and how best to use it to facilitate student learning. Teacher guides provide detailed explanations of key concepts. Way to teach particular topic, provide further examples that could be given to facilitate learning, relate concepts with daily life situations and also way to reinforce development of attitudes and values. Teacher's guide serves to educate teachers and thus could 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 teacher teach the text and extend activities by keeping contextual realities in view.

- Identify teaching strategies appropriate to context of teaching and learning according to textbook, and rationale for each strategy.
- Identify which teaching strategies are suitable for teaching knowledge, skills, and Dispositions in each chapter.
- Identify what extended activities students could do with teacher's help to develop target knowledge, skills and dispositions.
- Identify resources needed for teaching strategies and extension activities identify sources of information teachers can use to develop their knowledge (content and pedagogical).
- Explain how and where teachers can develop low-cost or no-cost resources.
- Describe extended activities and how to conduct them.
- 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.
- Explain how to implement each instructional strategy, adding resources or sources of necessary.
- Give clear, sequence instructions for each activity adding resources where necessary.
- Develop student's ability to think and reply.
- Explain various assessment strategies (strengths, weaknesses, how to implement etc.) and give examples of questions/tests.
- Give teachers choices of strategy/activity for each chapter (let them decided which to use).
- Decided where illustrations are needed and prepare brief for illustrator.
- Check that "guide" is error-free.
- Check if contextually relevant, revise if needed.
- Check that steps for each strategy/activity are easily understood.
- Relevant website links must be given.

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 becomes 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 helper to the child, as identifier of real-life problems, community expertise and other resources and one who is fully familiar with the environment and the resources available in the nearby region.

Teacher training programmes therefore need to be critically analyzed and restructured to provide for experiences, which will help develop these competencies. The effort of reforming teaching and learning strategies in the interest of promoting students' understanding must be long-term, must explore teachers' prior knowledge and experience, must utilize collaborative problem-solving teams, 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, focus on these guidelines:

Comprehensive understanding of teaching methods

Teachers should have full command over different methods of teaching. For example they are taught to promote 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. Still, knowledge of methods is not enough, but a person who teaches must have full understanding about the philosophy of each teaching method.

Use and application of different methods in different situations

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

Resource Management

Teacher must develop managerial skills regarding new and existing resources. Teachers need to develop on activities that enhance concepts of students and match with the level and interest of a learner.

Time Management

Time management is essential for implementation of teaching and learning practices. Teacher should have command on time management with small and large groups, for inquiry/investigative activities, role-plays as well as for assessing and evaluating students' learning and its documentation.

Teachers ought 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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