

Course Title: Foundation to the Basic Concepts of Science

Course Prerequisites:

This course is designed for candidates meeting the following prerequisites:

Educational:

- The minimum educational qualification for the course is Intermediate (F.A/F.Sc)
- Basic level of written and oral proficiency in English Language is compulsory
- The basic level of IT skills preferred

Professional:

- In service teachers of primary level science or pre service candidates intending to take primary science teaching as a profession

Course Duration:

The total duration of this part time inset course covers a span of 10 days; delivered as 5 contact hours per day.

Trimester	Strand	Modules	Days	Hours
First Trimester	Orientation & Baseline Assessment		1	5
	Science Process Skills	1	2	10
	Life Science	2	8	40
Break			3 weeks break	
Second Trimester	Physical Science	3	9	45
Break			3 weeks break	
Final Trimester	Earth Science	4	5	25
	Summative Assessment		1	5
Total			26	130

The course consists of a total of 130 hours of instruction and an ongoing teaching practicum embedded between face to face sessions throughout the duration of the course.

Off Site Content Input:

130 hours of direct engagement in formal face to face training

Course Content:

The foundation course explores the key concepts of primary level science in three strands as delineated in the benchmarks of content and skills for primary level science in the National Curriculum:

Science Process Skills

- ✓ Ask questions about objects and events in the immediate environment
- ✓ Observe and explore material and events in the immediate environment and record the results
- ✓ Identify patterns and order in objects and events studied
- ✓ Develop solutions to problems through reasoning and, observation and investigation
- ✓ Work with others, share and communicate ideas about their explanations

Strand 1: Life Science

- ✓ Identify the needs and characteristics of plants and animals
- ✓ Compare major plant and animal structures and their functions
- ✓ Describe diversity among organisms
- ✓ Compare and group plants and animals according to similarities and/or differences
- ✓ Examine habitats of plants and animals and determine how basic needs are met within each habitat

Strand 2: Physical Science

- ✓ Classify objects by properties that can be observed, measured and recorded including colour, shape, size and texture
- ✓ Describe the properties of different states of matter and identify the conditions that cause matter to change states; explain the process
- ✓ Identify changes when matter experiences an external influence in terms of a push or a pull
- ✓ Measure properties of objects using appropriate materials, tools and technology, and to observe safety
- ✓ Investigate physical phenomena commonly encountered in daily life including heat, light, sound, magnetism and gravity
- ✓ Describe simple energy transformations and the uses of energy at school and at home

Strand 3: Earth Science:

- ✓ Observe and describe the characteristics of objects in the sky
- ✓ Observe and record the changing appearances and positions of the Moon in the sky at night and determine the monthly pattern of lunar change
- ✓ Model changes that occur because of rotation and revolution of the Earth around the sun
- ✓ Explain that sun as a star is a source of heat and light energy and identify its effects upon the Earth
- ✓ Compare celestial bodies in our solar system
- ✓ Demonstrate how the relationship of Earth, Moon and Sun causes eclipses and Moon phases

Course Materials and Resources:

Written Materials

- Handouts

IT Materials

- Science videos
- Multimedia
PowerPoint presentations

Teaching and Learning Methods

The course employs the constructivist and an exemplary instructional approach. There is an emphasis on the use of inquiry as a tool for setting the scientific process in motion and the application of science process skills needed for carrying out investigations.

Exploratory

The training will be conducted using an active learning approach, fostering three way interactions: 1) with the facilitator, 2) with the content and 3) amongst the participants. The sessions will be based on collaborative work, hands on activities and presentations. Participants will play a dual role of learners and observers of pedagogy as practiced by the facilitator.

Practical work is a major part of the teaching and learning. Assignments are constructively assessed and students are encouraged to contribute to group discussions.

Course Completion Criteria:

DIL specifies that all candidates need to:

- Attend the whole course with a minimum 80 % attendance per module
- Maintain and submit a portfolio of all course work and the related documentation, including all materials related to the teaching assignments.
- Carry out all assignments in accordance with the regulations and submit assignments to the DIL Islamabad Office for the assessments by the date specified.

The assessment criteria specified in this segment are subject to change with the organization's policies

Certification

Successful candidates will get a certificate of completion

Cost of the Course

PKR. 2000/ day per participant, excluding the resource material cost