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## UNIT 9 ASSESSING LANGUAGE ACROSS THE CURRICULUM

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### 9.0 OBJECTIVES

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After completing this Unit, you should be able to:

- discuss the different types of assessment and principles of assessment;
- describe the characteristics of a good assessment plan;
- identify content and language demands of different objects;
- assess language behaviour and content through a variety of aural, reading and writing tasks; and
- use assessment as a mechanism to improve instruction and make decisions about interventions and reteaching.

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## 9.1 INTRODUCTION

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Assessment is an integral part of any teaching and learning programme. Whenever a question is asked and answered assessment takes place. Thus, both teaching and assessment overlap and merge into each other. In fact, it is not possible to have teaching and learning without assessment. Both teaching and assessment are based on the instructional objectives which provide direction to them.

Instructional objectives are those desirable behaviours which are to be developed in students. It is for achieving these objectives that instruction is provided. It is also to see whether and to what extent these objectives have been achieved that the assessment is made.

The three components of teaching and learning objectives, instructional process or the learning experience and assessment constitute an integrated network in which each component depends on the other. Thus, through assessment, the teacher not only assesses as to how far the student has achieved the objectives of teaching but also judges the effectiveness of the learning experiences, methodologies, means and the materials used for achieving those objectives.

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## 9.2 TYPES OF ASSESSMENT

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**Summative Assessment** is the commonly known type of assessment. It comes at the end of the term, course or programme of teaching. It involves a formal testing of the student's achievement. Annual and half yearly examinations in schools, and public examinations are the examples of such assessment. The purpose of this kind of assessment is to grade, rank, classify, compare and promote the pupils. It is also used for the purpose of certification.

**Formative Assessment**?, on the other hand, is inbuilt in the process of teaching and learning. Formative assessment can be defined as *assessment for learning*. It is done during the course of instruction with a view to improving students' learning. The purpose of this assessment is to provide feedback regarding the student progress, by finding out the learning gaps and the weak points. The teacher can then organize remedial programmes for them.

Unlike summative assessment which is formal in nature, formative assessment is informal and can be undertaken by using multiple techniques like observation, quizzes, project activities, oral tests, written tests, etc.

**Diagnostic Assessment** is another kind of assessment which is more closely related to formative than the summative assessment. In fact it is to be carried out along with formative assessment in the class. Sometimes, even the summative assessment may be used for diagnostic purpose. \

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## 9.3 PURPOSE OF ASSESSMENT

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Assessment serves a number of purposes in education. Some of the well known purposes are to grade, rank, classify, compare and promote the students. It is also used for certifying the completion of a course, selection of students for admission or scholarship, and for predicting their future success in different endeavours. The basic purpose of assessment in school has been to bring about quality improvement in education which it does by providing feedback regarding pupil learning, classroom teaching, appropriacy of curriculum and course content. It also helps bring about all round development of the students' personality when it is used for developing their non-cognitive capacities.

### 9.3.1 Assessment for Learning

Assessment of pupil progress contributes directly to improvement in pupil learning. Assessment is used not only for improving instruction but can also be used for gaining insights into students' learning—who is understanding presented content and who needs more support. This is done in a number of ways. Assessment procedures help clarify for the pupil what it is that the teacher wishes her/him to learn. Through this continuous assessment, the teacher knows the extent of learning at every stage. If there are any hard spots or gaps of learning, appropriate remediation can be provided.

### 9.3.2 Improvement in Teaching

Assessment can also promote the accountability of the teachers. The children's results can tell whether the poor performance of the students is due to poor teaching, defective methodology or due to absenteeism of teachers or callousness in teaching. Thus assessment can work as an important instrument for improvement in teaching.

### 9.3.3 Renewal of Curriculum or Course Content

Assessment also gives information regarding the effectiveness of the course content. There may be certain curricular areas which may prove to be difficult for the students. This fact can be identified through assessment and its feedback. Hence, assessment can provide a basis for curriculum revision.

### 9.3.4 Development of Non-Cognitive Capacities

In today's world the development of intellectual powers is not enough. The development of social intelligence, emotional intelligence and aspects of personality is also as vital as the development of mental intelligence. The prime concern of education is to bring about an all round development of human personality by

developing non-cognitive capacities of students along with the cognitive capacities. This can be ensured only when a school takes up the system of assessing these aspects of children's personality.

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## 9.4 CHARACTERISTICS OF A GOOD ASSESSMENT PROGRAMME

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The meaning, types and purpose of assessment lead us to arrive at the following characteristics of a good assessment programme in schools.

### 9.4.1 Assessment is an Objective-based Process

In school we are interested in knowing about the development of the students' personality and his/her educational achievements. These are reflected in terms of intended learning outcomes or the instructional objectives. In order to be meaningful, all assessment in school must be geared to these instructional objectives. The selection of assessment techniques and tools is also based on the objectives to be assessed.

### 9.4.2 Assessment is a Continuous Process

Since growth is a continuous process, the teacher must remain cognizant of the changes 'that take place from time to time. Continuous assessment is, therefore, essential for getting reliable evidence about pupils' growth and development. To serve this purpose assessment needs to be integrated with teaching.

### 9.4.3 Assessment is a Comprehensive Process

The pupils have different dimensions of growth - intellectual, emotional and physical. These aspects are represented in the form of different objectives. Unless assessment provides information on all the aspects, it cannot be considered comprehensive enough. Thus, a good assessment programme should assess the scholastic and non-scholastic aspects of pupil growth.

### 9.4.4 Assessment is a Dynamic Process

Assessment is based on instructional objectives but at the same time it helps us to judge whether those objectives are appropriate for a particular group of students. Similarly, though assessment is based on the learning experience provided in the class, it provides evidence as to the effectiveness of that learning experience. Thus, assessment keeps validating the whole teaching-learning process through regular feedback. A good assessment programme brings in dynamism and leads to continuous improvement in the educational process.

**Activity:**

1. *In what way can assessment be used for taking decisions at different stages of teaching?*
2. *Mention the characteristics of a good assessment programme in a school.*

### Principles of Assessment

Assessment is not just a process where a set of different techniques of testing are used. In fact, it is a process to determine the extent to which the instructional objectives have been achieved by the students.

*There are certain principles which may provide direction to the process of assessment. These are:*

- *Determining and clarifying what is to be assessed- deciding the content and language objectives*
- *Selecting assessment techniques in terms of the purposes to be served*
- *Combining a variety of assessment techniques for comprehensive assessment*
- *Knowing the strengths and limitations of various assessment techniques*

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## 9.5 ASSESSING LANGUAGE ACROSS THE CURRICULUM

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### 9.5.1 What to Assess - Content or Language?

The dilemma whether we need to assess the content or the language is faced by most teachers while assessing language embedded content. It is important, in this context, that we change our understanding of viewing content and language as separate components in instruction. Recent **views** on language have moved away from viewing language as comprising of grammar ,rules, vocabulary and structure to characterizing language as embedded in a set of domain specific actions within the systems of meaningful discourse within the classroom. (Van Lier & Walqui, 2012). **Academic language is therefore embedded in the classroom practices of the content area and is not** to be viewed as a set of separate conventions. Viewed thus, **the implications on assessment are as follows:**

- **specific content are a** constructs cannot be separated from explicit recognition of their language demands, language **therefore needs to be seen in the context of domains of knowledge. For instance,** we understand by now that there is an explicit language of science which is different from the language of math and the language functions are specific to each of these subjects;
- since language is embedded in the content, academic **language needs to be measured within the content areas?**, and
- assessments need to focus on the level of student's engagement with the language of the content being taught in order to test the aspects of language that are critical to domain specific knowledge representation.

### 9.5.2 Determing the Learning Objectives

We can easily infer from the Table above that language objectives are directly correlated to content objectives. Once a teacher decides the lesson topic , he/she have to think about the language necessary for learners to complete the tasks associated with the content objectives. The ***academic language is embedded in the lesson's content and as and when identified by the teacher becomes the basis for the lesson's language objectives.***

As a teacher, the following guidelines can help you to start thinking about appropriate language objectives for the topic in your subject:

- Decide what **key? vocabulary, concept words, and other academic words** students will need to know in order to talk, read, and write about the topic of the lesson
- Consider the **language? functions** related to the topic of the lesson (e.g, will the students describe, explain, compare, or chart information)
- Think about the **language? skills? necessary** for students to accomplish the lesson's activities .
- Identify **grammar? or language structures** common to the content area. For example, many science textbooks use the passive voice to describe processes.
- Consider the **tasks?** that the students will complete and the language that will be embedded in those assignments. If students are working on a scientific investigation together, will they need to explain the steps of the procedure? The language objective might focus on how to explain procedures aloud.
- Explore **language learning strategies** that lend themselves to the topic of the lesson. For example, if students are starting a new chapter in the textbook, the strategy of previewing the text might be an appropriate language objective.

(Adapted from Short, Himmel, Gutierrez, & Hudec, 2012.)

### 9.5.3 Alignment Learning Objectives, Assessment Techniques and Instructional Strategies

Once you have outlined course goals and objectives you need to identify the assessment techniques that will assess what students have learnt. There should be an alignment between learning objectives, assessment techniques and instructional strategies:

- **Learning objectives:** What do I want my students to know after they complete the unit/lesson?
- **Assessments:** What kinds of tasks should I select to assess whether students have achieved the learning objectives I have identified?
- **Instructional strategies:** What kinds of strategies should I select in and out of class so that students can achieve the learning objectives and prepare for assessments?

Activity: Fill the Table below:

OBJECTIVES	ASSESSMENT TASKS
Interpret Exemplify Classify	
Use of academic vocabulary	
Summarize	
Presents a logical flow of ideas	
Infer Compare Explain	

Let us go through the following section to understand how to frame language and content objectives.

*Science, States of Matter*

Course Objective	Content Objective	Language Objective
Students know that matter has three forms: solid, liquid, and gas.	Students will be able to distinguish between liquids, solids, and gases and provide an example of each.	Students will be able to orally describe characteristics of liquids, solids, and gases to a partner.

*Math, Two-Dimensional Figures*

Course Objective	Content Objective	Language Objective
Draw and identify lines and angles, and classify shapes by properties of their lines and angles	Students will be able to classify triangles based on their angles.	Students will be able to read descriptions of triangles and their angles.

*Colonial Communities*

Course Objective	Content Objective	Language Objective
Students will use a variety of cognitive skills to demonstrate their understanding of the geography of the interdependent world in which we live.	Students will be able show how geographic features have affected colonial life by creating a map.	Students will be able to summarize in writing how geography impacted colonial life.

*English Language/Informative/Explanatory Texts*

Course Objective	Content Objective	Language Objective
Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. Provide a concluding statement or section that follows from and supports the argument presented.	Students will be able to draft a conclusion paragraph for their expository essay.	Students will be able to use transitional phrases (e.g., as a result) in writing.

Source: <http://www.colorincolorado.org>

## 9.6 ASSESSMENT ACROSS THE CURRICULUM

We can divide assessment across the curriculum into the following components:

- *Oral language (Speaking and Listening)*
- *Written language, and*
- *Content*

Ideas in different disciplines are not only generated through oral language; they also get expressed through written work. Assessment of writing skills is an equally important task which the teachers have to pay attention to. In all the disciplines, the use of technical and discipline-specific vocabulary is an integral part of oral and written language. Evaluation of students' writing should focus on student's ability to understand accurate theoretical information, understand the connections between concepts, make connections between ideas and use proper vocabulary and grammar.

**Figure 1: Assessment Using Oral Language, Written Language, and Content Knowledge**

Levels of Achievement	Not Yet Proficient	Nearly Proficient	Proficient	Highly Proficient
<b>Oral Language</b>				
<b>Speaking</b>				
Uses academic and technical vocabulary				
Makes connections between content ideas				
Uses appropriate grammar				
Presents a logical flow of ideas				
<b>Listening</b>				
Asks clarifying questions				
Interprets speaker's ideas				
Paraphrases speaker's ideas				
Analyzes speaker's ideas				
<b>Written Language</b>				
Uses academic and technical vocabulary				
Makes connections between content ideas				



Uses appropriate grammar				
Presents a logical flow of ideas				
<b>Content Knowledge</b>				
Possesses accurate information				
Understands connections between conceptual ideas				
Understands theoretical information				
Understands practical information and relevant applications of science concepts				

Source : Grant, M.C, Fisher, D.etal(2010), *Reading and Writing in Science*. New Delhi\.:Sage

## 9.6 ORAL ASSESSMENT

Oral assessment typically focuses on the following:

- **Concepts, theories and procedures.** *Oral* tests can be used to assess students' conceptual and procedural knowledge and to ensure that the responses are the students' own.
- **Applied problem solving.** Students can be given real or hypothetical situations to analyse problems, offer solutions, justifying their decisions based on their knowledge and understanding through oral tests.
- **Competence to communicate** includes interpersonal competence and intrapersonal qualities. The former includes how the students communicate and interact with their teachers and peer-group.
- Intrapersonal qualities. Intrapersonal qualities include qualities of confidence, self-awareness, professionalism and ethics.

Oral skills involve the following **language operations** with regard to the content in the subject specific discipline :

- *The student is able to clearly convey information to the intended audience*
- *Information is well organized and content is appropriate.*
- *Utilizes correct grammar, intonation, projection.*
- *Demonstrates ability to competently and appropriately utilize supportive audiovisuals and/or technology (presentation software, equipment) to enhance oral communication*

### 9.6.1 Criteria for Assessment of Speaking Tests

The criteria for assessment of speaking skills may be:

Managing interaction and Providing information

This includes the following:

Elaborating/justifying

Expressing opinions

Justifying opinions

Persuading and comparing

Analysing

Negotiating

Explaining

Narrating

Paraphrasing

Summarising

**Activity:**

1. What is to be kept in mind when planning a speaking test in your subject?
2. What aspects of the test taker should be kept in mind when designing speaking tests?

### 9.6.2 Speaking Tests and Tasks

While it is not difficult to create a speaking test, it is important for us to ensure that the test can be scored, since only then can the performance be reported to the learner or the stakeholder.

**Reading aloud** In this case the learner is expected to read a text aloud with the correct pronunciation, intonation etc. The disadvantage in this case is that everyone is expected to read the same text to make comparisons easy. It is time consuming and not really attest of speaking. Assessment could also be subjective.

**Conversational exchanges** Learners are given various situations and are expected to respond by making sentences using particular patterns. Models of expected language may be given or may not be given. It is suitable for use with large groups. Language use is controlled so comparison and reliability is high. Content is closely related to that studied in the class. It is however not very authentic as the test is not communicative. The level of the learner in reading and listening will interfere with the learners' ability to respond to the stimulus.

**Oral presentation (verbal essay)** In this case a learner is expected to speak directly onto a voice recorder on a set topic for one or more minute. The topic may be given on the spot or in advance. The disadvantage of such a system may be that a wide criteria may have to be included; the topic may not interest the learner; offering choices may make comparisons difficult. If topics are given on

the spot, the performance may be a result of the non linguistic knowledge. Prepared topics could be memorised and may not in any way reflect speaking ability.

Some prompts that can be used for assessing oral skills.

- What did you notice when ..... ?
- What do you think will happen if ..... ?
- How might you explain ..... ?
- What connections can you make between ..... and ..... ?

**Information transfer exercises:** Learners are given a set of pictures and are asked to narrate the story primarily in a particular tense. It is important to select the pictures without any cultural bias. The picture must be clear and unambiguous.

**Role play:** In this case, the learner takes on a decided role and interacts in language appropriate to the role. Criteria for assessment must be clearly stated. There is the danger that a learner good at acting may influence the grading. Role familiarity is also likely to affect performance. Using different topics may affect comparisons and objectivity in testing.

**Interview:** In this case, there is no predetermined procedure. If learners are asked the same questions there is a chance of higher validity. However performance may vary according to the teacher's ability to draw out information. There is the question of familiarity with the learner as well.

**Debate and Discussion:** Learners are given a question or topic (either teacher or learner determined) to discuss in groups or pairs. A relatively large number of learners can be tested at a time. There may be a tendency for some learners to dominate. This has to be monitored. It may may need more than one examiner for the test to be reliable.

### 9.6.3 Assessing Speaking

#### Peer Assessment and Self Assessment

Learners take on the role of interviewer, observer and interviewee. They are provided with a predetermined scale. Teacher's control is very limited; scoring can be influenced by inter learner relationships. It be difficult with the younger age group.

To conclude, it may be said that each speaking test will be made up of one or more speaking tasks and each of these could have a different cognitive load. It could also be live or recorded. It could be individual, in pairs, or in groups small or big. Whatever be the task, the criteria for assessing each task must be clearly stated.

Activity: Select any three types of speaking tests to be used for assessment in your subject and discuss their advantages and disadvantages with your peer group.

### *Learner's Self Assessment Inventory*

#### *Some Questions to Find Out If I am a Good Speaker*

##### *Always/Often/Sometimes/Never*

- *Do I speak loudly enough to be heard by all those to whom I am speaking?*
- *Do I speak at the right speed for my listeners?*
- *Do I articulate all my words clearly?*
- *Do I use the right vocabulary for my listeners?*
- *When explaining something, do I:*
  - *organise what I am going to say?*
  - *make my point clear?*
  - *explain what I mean by using examples and details?*
  - *use good grammar?*
- *use the words that can best be understood by my listener*
- *Can I describe common objects, events and people so that my listener is clear?*
- *Can I give simple, clear directions?*
- *Can I ask questions about information or opinions expressed by others?*
- *When I speak to anyone do I look for “signals” that the listener understands me?*
- *Do I vary my tone, and know which words to emphasise?*
- *Do I keep in mind my body and facial expressions while I speak?*

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## **9.7 ASSESSING READING COMPREHENSION**

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Reading is an important skill because text and other reading materials are most widely used in instruction. Assessment of students' abilities to read and learn from textbooks in specific subjects is an important indicator for teachers as it has a direct bearing on instruction and student achievement in subject area.

### **9.7.1 Components of Reading Process to be Assessed**

- vocabulary and structural knowledge;
- knowledge of how a whole text is organised (expository, narrative, cause-effect, compare and contrast, etc)

- content/background: prior knowledge related to the text;
- understanding of literary and informational texts. Informational texts rely upon discipline-specific knowledge and language;
- evaluation of text information and comparison with other sources of information.

## 9.7.2 Assessment Tasks for Reading

### Using Book Parts

Based on the textbook or other printed materials for the class, construct eight to twelve questions focussing on knowledge of book parts and visual illustrations used. Questions such as the following can be framed

- On what page would you find information about Fundamental Rights?
- What does the symbol of a tree on the map on page 27 represent?
- On what page does chapter 5 begin?
- Where would you look to locate a chapter on the digestive system in the text?
  - a) Glossary
  - b) Table of Contents
  - c) Literary Terms and Techniques
- If you came across the word “force” in your reading in the text, where will you find its definition?

You can use additional open -ended or multiple choice to find if students know how to use the textbook features. The students can be asked to use the textbooks/materials. The assessment criteria consists of the time taken against the suggested time and the number of correct responses.

### CLOZE TEST

Cloze tests are easy to construct and can be used conveniently in many content classrooms. When used for assessing content area reading ability, a cloze test is constructed by selecting a reading passage with words missing at regular intervals, which could be the fifth or the seventh word .A minimum of 40-50 blanks is suggested. Each blank space should be numbered for the purpose of scoring. Finally prepare an answer sheet showing the exact word in the original passage.

**ACTIVITY:** Complete the following sample cloze test (Source: Themes in World History, Class 11, Unit 2, p50).

By the sixth century BCE, (1).—————had established control over (2)..... parts of the Assyrian empire.(3 ).....of trade developed overland, as well as along the (4)..... of the Mediterranean Sea. In

the (5)..... Mediterranean, Greek cities and their ..... benefited from improvements in ..... They also benefited from trade with..... people to the north of the..... In Greece, city-states such as..... and Sparta were the focus of civic life. From among the Greek states, in the late .....BCE, the ruler of the kingdom of....., Alexander, undertook a series of..... and conquered parts of North Africa,....., reaching up to the Beas. Here, his soldiers refused to proceed ..... Alexander's troops retreated, though many .....stayed behind.....(49...).....(50)

Answers: 1. Iranians, 2. major, 3. networks, 4. coasts, 5. eastern.....

**Assessment criteria:** A.50 percent and above; Finds the text easy to read, will read without much difficulty; B.35-50 percent: Needs some assistance; C. Below 35 percent :Finds reading difficult, will not be able to read on her own, requires much support.

### Using Checklists for Reading Comprehension

Checklists provide information about the skills and behaviours of students related to the reading process in specific subject or topic of study. Checklists are normally not more than one page in length and consist of skills or behaviors that are of particular use in a specific subject. Student performances are generally recorded over a period of several weeks or months.

A checklist to observe students' reading comprehension over several weeks or months would demonstrate the use of following strategies in a variety of contexts:

- *makes connections*
- *predicts*
- *asks and answers questions*
- *infers, visualises*
- *synthesizes*
- *determines important information*
- *identifies point of view and main ideas in the text.*

Checklists are convenient to construct and different checklists can be constructed for students at different stages of reading, e.g; early readers, transient readers, reading for comprehension.

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## 9.8 ASSESSING INFORMATION TRANSFER ACTIVITIES

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In data-handling tasks, the following specific skills and techniques involved in completing the task are assessed. Some of these skills (the first four) involve explicit reading function

- *Gathering data*
- *Interpreting data*
- *Analysing data*
- *Comparing different sets of data*
- *Representing data in written, graphic or mapped format*
- *Problem-solving*
- *Drawing conclusions*
- *Hypothesis statements*

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## 9.9 ASSESSING STUDENT WRITING

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The *purpose of assessment* of student writing include:

to provide evidence of student's understanding of the role different types of writing play in the creation and dissemination of knowledge within specific disciplines.

- to provide evidence of student's knowledge to locate, interpret, and use discipline-specific arguments appropriately. Informs, persuades and motivates.
- to indicate how effectively student uses conventions of organization, utilizes? correct grammar, spelling, punctuation, and writing style appropriate for audience and situation.
- to provide evidence of student's ability to engage critically with secondary sources from a variety of disciplines demonstration of student's knowledge of and ability to write within the main genres of a discipline – i.e. to produce a summary, analysis, a comparison essay, and a close reading in all fields, as well as other specific forms within the discipline studied.

### 9.9.1 Types of assessment tasks

- *Essays*
- *multiple choice questions*
- *problem solving (mathematics, physics, among others)*
- *analysis of texts, data*
- *case-studies*
- *literature reviews, etc.*

#### *Multiple Choice Questions*

Here is an example of how a Science teacher can assess content and language functions in Science through a written task. In the topic, Soils, Rocks, and Landforms, the students are expected to explain that:

- The greater the flow of water across Earth's surface, the greater the rate of erosion and deposition.

The scientific practices in focus are *interpreting data* and *constructing explanations*. The language functions students will exercise while engaging

in these scientific practices are *comparing, explaining, and providing evidence*.

- Students will compare observational data ,after an investigation, to *explain* the relationship between the amount of water that runs over a surface and the amount of erosion and deposition that occur.

The teacher can provide tasks such as:

- As \_\_\_\_\_, then \_\_\_\_\_ .

*As more water flows over a surface, then more erosion and deposition occur.*

- When \_\_\_\_\_ is changed \_\_\_\_\_, then \_\_\_\_\_ happened.

*When the amount of water flowing down the stream table is changed, then more erosion and deposition happened.*

- The more/less \_\_\_\_\_, the \_\_\_\_\_ .

*The more water that flows across the earth materials, the more erosion and deposition that occur.*

### **Worksheet based short answer questions**

*Metals and Non-metals*

**Assessment Technique:** Based on electron dot structures & bonding worksheet

**Objectives:** To enable the students to-

- Recall understanding of electronic configuration of elements and write it;
- Correlate the electronic configuration to the valence and type of bonds formed for elements
- Write electron dot structures of elements.
- Understand and show formation of ionic compounds by transfer of electrons.

Task: Individual

Procedure:

The students may be given the following worksheet after the teaching-learning experience of formation of compounds between metals and non metals, i.e. formation of ionic bonds.

Assessment Parameters: Each of the following questions may be assessed giving weightage as follows.

Q1. 3 marks	Q2. 1 mark	Q3. 1 mark
Q4. 1 mark	Q5. 2 marks	Q6. 2 marks
Student Worksheet		Time: 10 minutes

The atomic numbers of three elements A, B and C are given Answer the following questions on the basis of the data:

A = 12

B = 16

C = 6



Q1. Write the electronic configurations of all the three elements.

.....  
.....

Q2. Which of these elements is a metal?

.....  
.....

**Activity:** *What are the content objectives and language functions to be assessed in the above activity?*

### **Essay- Concept Essay**

Essays are a powerful and fairly common tool of assessment. Concept essays are a bit different in that these are fairly short pieces of student writing in which the student is able to demonstrate her understanding of the topic.

Given below is a ‘Concept essays’ from a course on calculus, an unlikely subject for writing an essay.

- (a) *In your own words, explain how the ideas of differentiation have been extended to apply to functions of two variables and to vector functions of one variable. Use diagrams to help your explanations. Try to explain why the extensions have been done the way you have explained and not some other way. For example, explain why partial derivatives are the central idea for functions of two variables as opposed to, say, finding the slope of the tangent plane.*
- (b) *Summarise, in your own words, in about a page or so, the factors which existed in the seventeenth century which led to the main ideas of calculus being invented at that time.*

(Source: Roberts, undated; cited in Toohey, 1999: 177)

### **9.9.2 Using Portfolios for Assessment**

A portfolio is a collection of work done by a learner over a period of time. Individual learners can select the work they want to display in the portfolio which may be from day-to-day work or fortnightly/monthly/term tests. In this way, the learners are initiated into taking responsibility for their learning and actively taking part in organizing their learning. A systematically kept portfolio provides information to the learner, teacher and parents about the learning progress made by the learner. The teachers should motivate the learners to review their portfolio periodically, say once a week/fortnight which is a kind of self-assessment by the learners. Portfolio is a systematic progression of tasks that can be linked to specific course goals and objectives and provide an opportunity to the teacher to interpret whether each goal was accomplished. What goes into the portfolio will largely depend on the learning objectives you set for each class.

A portfolio may consist of the following:

- Sentences/paragraphs demonstrating vocabulary/grammar skills (Language)
- Different kinds of writing samples (letter, report, essay, story, lab reports textbook reviews, etc in Language, Social Science and Science)
- Unit tests
- Learning goals

- Self assessment report
- Teacher observations
- Parent observations

<p><b>Check Your Progress 1</b></p> <p>Design a suitable marking code which you could use for correcting writing errors in the subject of your choice.</p> <p>.....</p> <p>.....</p> <p>.....</p>
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### 9.9.3 Rubrics

4 Outstanding	1 Limited	2 Adequate	3 Strong	4 Outstanding	Score
Knowledge of Writing Conventions (Grammar, Syntax, Spelling)	Communicates ideas poorly and makes pervasive errors	Communicates ideas successfully, yet demonstrates some difficulty in mastering the writing	Communicates ideas well by demonstrating an accurate knowledge of writing conventions	Communicates ideas clearly by demonstrating an excellent knowledge of writing conventions	
Writing Organizational Skills	Shows difficulty in presenting ideas in an organized sequence	Adequately develops ideas following a logical sequence	Successfully develops ideas following a logical sequence	Develops ideas exceptionally well following a logical sequence	
Writing Argumentation Skills	Lacks enough persuasive examples in order to clarify the overall argument.	Persuasive examples to support the essay may consist somewhat of opinion or unproven data.	Uses persuasive examples well to support the overall essay. Evidences clear understanding and evaluation of different perspectives	Uses exceptionally persuasive examples to support the overall essay. Shows exceptional ability to understand and evaluate different perspectives	
Conventions of the Discipline	Shows some knowledge of the subject and limited use specialized concepts	Shows knowledge of the subject and engages in use of specialized concepts	Shows clear understanding of the subject and facility with specialized concepts	Shows deep understanding of the subject area and high degree of facility with specialized concepts	
				<b>Average Score</b>	

Adapted from <http://web.stu.edu>

### 9.9.4 Rubrics for Self-Assessment (Mathematics)

Using a rubric for self-assessment of written work in Mathematics

Competence in mathematics demands more than measurement of performance skills of students. Assessment should also focus on whether students have managed to connect the concepts they have learned, how well they can recognize underlying principles and patterns amid superficial differences, their sense of when to use processes and strategies, and their grasp and command of their own understanding. The following rubric is an example of how a teacher can achieve this objective.

Guide to Completing the Problem

1. Conceptual understanding of the problem
  - I used diagrams, pictures, and symbols to explain my work.
  - I used all the important information to correctly solve the problem
  - I have thought about the problem carefully and feel as if I know what I'm talking about
2. Procedural knowledge
  - I used appropriate mathematical computations, terms, and formulas.
  - I correctly solved and checked my solution to the problem.
  - I used mathematical ideas and language precisely.
  - I checked my answer for correctness.
3. Problem-solving skills & strategies
  - I looked for other possible ways to solve the problem.
  - I used problem solving skills/strategies that showed some good reasoning.
  - My work is clear and organized.
4. Communication
  - I communicated clearly and effectively to the reader.
  - In my solution, one step seems to flow to the next.
  - I clearly used mathematics vocabulary and terminology.
  - My sentences make sense and there are no words left out.

(Source: [www.nap.edu/read/2235/chapter/6#72](http://www.nap.edu/read/2235/chapter/6#72))

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### 9.12 LET US SUM UP

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Assessment is a very important aspect of the teaching – learning process. As a teacher, it is important to understand the purpose and types of assessment. The Unit gives a context for assessment in the teaching learning process by emphasising on the link between learning objectives, strategies for assessment and instruction.

The Unit discusses the importance of viewing language as a part of the practice of teaching context and separate from it. Aspects of knowledge critical to representation of subject specific knowledge in need to be assessed. The role of the teacher in identified learning objectives in content area and language demands of the content is very important. The Unit provides a variety of tests at a tools for assessment in of content and language across the disciplines.

*[www.nap.edu/read/2235/chapter/6#72](http://www.nap.edu/read/2235/chapter/6#72)*

