FOUNDATION OF INFORMATION TECHNOLOGY

FORMATIVE ASSESSMENT

CBSE
CONTINUOUS AND COMPREHENSIVE EVALUATION
KNOW - AS YOU GROW

Formative Assessment

Manual for Teachers

CLASS-IX

केन्द्रीय माध्यमिक शिक्षा बोर्ड, दिल्ली
असतो मा सद्गमय

CENTRAL BOARD OF SECONDARY EDUCATION
Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110 092 India

नया आगाज़

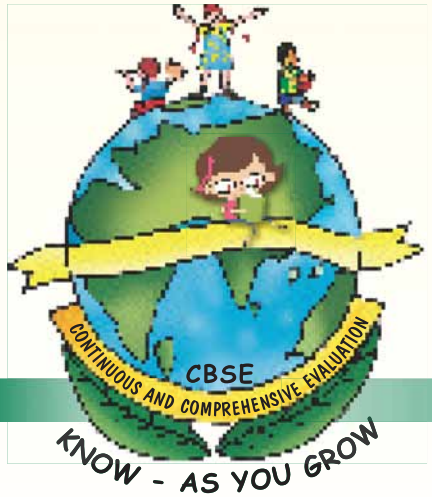
आज समय की माँग पर
आगाज़ नया इक होगा
निरंतर योग्यता के निर्णय से
परिणाम आकलन होगा।

परिवर्तन नियम जीवन का
नियम अब नया बनेगा
अब परिणामों के भय से
नहीं बालक कोई डरेगा

निरंतर योग्यता के निर्णय से
परिणाम आकलन होगा।

बदले शिक्षा का स्वरूप
नई खिले आशा की धूप
अब किसी कोमल-से मन पर
कोई बोझ न होगा

निरंतर योग्यता के निर्णय से
परिणाम आकलन होगा।
नई राह पर चलकर मंज़िल को हमें पाना है
इस नए प्रयास को हमने सफल बनाना है
बेहतर शिक्षा से बदले देश, ऐसे इसे अपनाए
शिक्षक, शिक्षा और शिक्षित
बस आगे बढते जाएँ
बस आगे बढते जाएँ
बस आगे बढते जाएँ.....



FORMATIVE ASSESSMENT

Manual for Teachers

FOUNDATION OF INFORMATION TECHNOLOGY

CLASS IX

CENTRAL BOARD OF SECONDARY EDUCATION
Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110 092 India

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भारत का संविधान

उद्देशिका

हम, भारत के लोग, भारत को एक 'सम्पूर्ण प्रभुत्व-संपन्न समाज द पथबिर्ी क्ष लोकतंत्रात्मक गणराज्य बन न के लिे , तथा उएके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनतिक न्यैाय,
विचार, अभिव्यक्ति, विश्वास, धर्म
और उ सना की स्वतंत्रता,
पतिष्ठा और अव र की समता

प्राप्त कराने के लिए, तथा उ सब में, व्यक्ति की गरिमा और राष्ट्र की एकता और अ ण्डता सुनिश्चित करन वाली बंधुता बढ़ाने के लिए दढ़संकल्पृ होकर अप इस संवि ान सभा में आज तारीख 26 न बर, 1949 ई॰ को एतदद्वारा इस् संवि ान को ध अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

1. संविधान (यालीसवां संशोधन) अ धनियम, 1976 की धारा 2 द्वारा (.1.1977) से " भुत्व संपन्न लोकतंत्रात्मक गणराज्य" के स्थान प पतिस्थापि । त
2. संविधान (यालीसवां संशोधन) अधिनि म, 1976 की धारा 2 द्वारा (.1.1977 से) " ष्ट्र की एकता" के स्थान प पतिस्थापि । त

भाग 4 क

मूल कर्त्तव्य ।

5 क. मूल कर्त्तव्य – भारत के प्रत्येक नागरिक का यह कर्त्तव्य ह ग कि वह –

(क) संविधान का पालन करे और उसके आद र्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आद करे; र

(ख) स्वतंत्रता के लिए ह रे राष्ट्रीय आंद लन को प्रेरित करने वाले उच्च आद र्शों को हृद में संजोए रखे और उसका पाल करे; न

(ग) भारत की प्रभुता, एकता और अखंड ा की रक्षा करे आर उैसे अक्षुण्ण रखे; ।

(घ) दश की रक्षा करे और आह्वान किए जाने पर राष्ट्र की सेवा करे;

(ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निमाण करे जो धर्म, भा ा और प्रदश या वेर्ग पर आधारित सभी भेद ा व से भ परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरु हं; द्ध

(च) हमारी सामासिक संस्कृति की गौरवशाली परंपरा का मह व समझे और उसका परीक्षण करे;

(छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नद , और वन्य जीव हं, रक्षा करे और उसका संवर्धन करे तथा प्राणिमात्र के प्रति द ाभाव य रखे; ।

(ज) वैज्ञानिक दष्टिकोण, मानववाद और ज्ञ नार्जन तथा सुधार की भावना का विकास करे;

(झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिसा से दर रह;

(ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हए प्रयत्नु और उपलब्धि की नई उंचाइयों को छू ले।

THE CONSTITUTION OF INDIA

PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a [1] **SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC** and to secure to all its citizens :

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the [2] [unity and integrity of the Nation];

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do **HEREBY TO OURSELVES THIS CONSTITUTION.**

1. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "Sovereign Democratic Republic (w.e.f. 3.1.1977)
2. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation (w.e.f. 3.1.1977)

THE CONSTITUTION OF INDIA

Chapter IV A

Fundamental Duties

ARTICLE 51A

Fundamental Duties - It shall be the duty of every citizen of India-

(a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;

(b) to cherish and follow the noble ideals which inspired our national struggle for freedom;

(c) to uphold and protect the sovereignty, unity and integrity of India;

(d) to defend the country and render national service when called upon to do so;

(e) To promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;

(f) to value and preserve the rich heritage of our composite culture;

(g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;

(h) to develop the scientific temper, humanism and the spirit of inquiry and reform;

(i) to safeguard public property and to abjure violence;

(j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement.

CONTENTS

ACKNOWLEDGEMENTS

ADVISORY BODY

- Shri Vineet Joshi, Chairman - CBSE
- Smt. Chitralekha Gurumurthy, Director - Academics
- Dr. Sadhana Parashar, Head - I & R

EDITING COMMITTEE

- Prof. Om Vikas, Ex-Director, IIITM, Gwalior

MATERIAL PRODUCTION GROUP

- Ms. Gurpreet Kaur, GD Goenka Public School, Delhi
- Mr. Mukesh Kumar, DPS, R.K. Puram, Sector-12, Delhi
- Ms. Suji Gopalan, Dhirubhai Ambani School, Mumbai

COORDINATION

- Dr. Srijata Das, Education Officer, CBSE

PREFACE

At the centre of the transformation that School Education is undergoing presently is the new perspective to assessment and its relationship to the teaching-learning process. It is widely agreed that assessment influences what is taught and how teaching and learning are delivered. There is also a widespread belief among educational researchers and practitioners that assessment can and often does constrain rather than enhance learning outcomes. If we restrict our choices of teaching and learning activities to exercises that simply rehearse for examinations, then we run the risk of failing our learners during the teaching and learning process as a whole. Another pitfall in working towards assessment is that learners may concentrate simply on doing the bare minimum needed in order to guarantee a pass.

Hence the challenge of changing the traditional system of examination and evaluation has emerged as a major focus. By introducing Continuous and Comprehensive Evaluation at the secondary level in all its affiliated schools, CBSE has sent out a clear message that assessment must take into account all the aspects of the personality development of the learner and that since learning is a continuous process, assessment also has to be continuous. CCE fundamentally shifts the focus from testing to learning by perceiving assessment as an integral part of the overall framework of teaching and learning. It follows from this that when incorporated into classroom practice, assessment tends to lose its individual identity, getting subsumed into the instructional process.

Such a conceptualization necessitates a greater thrust on formative assessment. It must be said, at this stage, that though many schools have been practicing CCE and as a consequence, formative assessment procedures for classes I - VIII for many years, the overall thrust still continues to be to use assessment for 'measuring' rather than 'enhancing' learning. In other words, there has been a general lack of conceptual clarity with regard to the formative assessment practices among stakeholders as a result of which, many apparently formative assessment tools and procedures have, in effect, been summative in nature, ie, exercises to gauge, at a particular point in time, student learning relative to content standards. Although the information gleaned from this type of assessment is important, it can only help in evaluating certain aspects of the learning process.

It brings us to the vital need of strengthening formative assessment because our overall aim is to facilitate learning by improving the teaching- learning process on the basis of information gathered from assessment.

In this sense formative assessment is a part of the instructional process, underpinning the importance of student involvement. Students need to be involved both as assessors of their own learning and as resources to other students bringing into focus the importance of self and peer assessment besides teacher assessment. Research shows that the involvement in and ownership of their work increases students' motivation to learn. The most significant advantage of formative assessment is that it makes learning an enjoyable experience because of student involvement, enhanced learning and unobtrusive techniques of assessment.

Summative assessment constitutes a public recognition of achievement and we are fairly familiar with most of the tools and procedures of summative assessment. However, many teachers may find it a challenge to develop effective formative assessment tools; they may also experience some difficulties in integrating them with classroom instruction. In order to provide conceptual clarity in this regard and to place some illustrative examples of formative assessment tasks in the hands of the teachers, the Board is bringing out a series of Manuals for classes IX and X in all the major subjects. This manual on Foundation of Information Technology - is one of them. The tasks exemplified in this Manual are of different types such as Cross word puzzles, Matching Items, Flow charts and Multiple Choice Questions.

It is fervently hoped that teachers and students will derive maximum benefit from these publications. By studying the contents carefully and by using the tasks in classroom teaching, teachers would be able to build their capacity not only for enhanced learning to take place but also for preparing their own materials to add value to curriculum delivery. Certain practical guidelines have been included in the manuals to enable schools and teachers to implement formative assessment within the CCE framework as proposed by the Board for classes IX and X.

This document has been prepared by a group of experts of Foundation of Information Technology and I record the sincere appreciation of the Board to each of these contributors. I also convey my appreciation to Prof. Om Vikas, Ex-Director, IIITM, Gwalior and Dr. Srijata Das, Education Officer, CBSE, for conceptualizing and coordinating the task of deciding the content and bringing out the manual.

I sincerely hope that with the availability of rich materials, teachers will be able to implement the CCE scheme in the right spirit in all the schools affiliated to CBSE. Comments for improvement of the manual are always welcome.

VINEET JOSHI
Chairman

Continuous and Comprehensive Evaluation

Education aims at making children capable of becoming responsible, productive and useful members of a society. Knowledge, skills and attitudes are built through learning experiences and opportunities created for learners in school. It is in the classroom that learners can analyse and evaluate their experiences, learn to doubt, to question, to investigate and to think independently. The aim of education simultaneously reflects the current needs and aspirations of a society as well as its lasting values and human ideals. At any given time and place they can be called the contemporary and contextual articulations of broad and lasting human aspirations and values.

An understanding of learners, educational aims, the nature of knowledge, and the nature of the school as a social space can help us arrive at principles to guide classroom practices. Conceptual development is thus a continuous process of deepening and enriching connections and acquiring new layers of meaning. Alongside is the development of theories that children have about the natural and social worlds, including themselves in relation to others, which provide them with explanations for why things are the way they are and the relationship between cause and effect. Attitudes, emotions and values are thus an integral part of cognitive development, and are linked to the development of language, mental representations, concepts and reasoning. As children's metacognitive capabilities develop, they become more aware of their own beliefs and capable of regulating their own learning.

Characteristics of learning

- All children are naturally motivated to learn and are capable of learning.
- Understanding and developing the capacity for abstract thinking, reflection and work are the most important aspects of learning.
- Children learn in a variety of ways-through experience, making and doing things, experimentation, reading, discussion, asking, listening, thinking and reflecting, and expressing themselves in speech or writing-both individually and with others. They require opportunities of all these kinds in the course of their development.
- Teaching something before the child is cognitively ready takes away real learning. Children may 'remember' many facts but they may not understand them or be able to relate them to the world around them.
- Learning takes place both within school and outside school. Learning is enriched if the two arenas interact with each other. Art and work provide opportunities for holistic learning that is rich in tacit and aesthetic components. Such experiences are essentially to be learnt through direct experience and integrated into life.

- Learning must be paced so that it allows learners to engage with concepts and deepen understanding rather than remembering only to forget after examinations. At the same time learning must provide variety and challenge, and be interesting and engaging. Boredom is a sign that the task may have become mechanically repetitive for the child and of little cognitive value.
- Learning can take place with or without mediation. In the case of the latter, the social context and interactions, especially with those who are capable, provide avenues for learners to work at cognitive levels above their own.

Place of Evaluation in the Curriculum

A curriculum is what constitutes a total teaching-learning program composed of overall aims, syllabus, materials, methods and assessment. In short it provides a framework of knowledge and capabilities, seen as appropriate to a particular level. Evaluation not only measures the progress and achievement of the learners but also the effectiveness of the teaching materials and methods used for transaction. Hence evaluation should be viewed as a component of curriculum with the twin purpose of effective delivery and further improvement in the teaching learning process.

If properly understood, evaluation or assessment will not be perceived as something administered by the teachers and taken by the learners on the conclusion of a period of learning. When evaluation is seen as an end of the learning exercise, both the teachers and the learners will tend to keep it outside the teaching-learning process, rendering assessment broadly irrelevant and alien to the curriculum. Further such a perception associates anxiety and stress with evaluation for learners. On the contrary, if evaluation is seen as an integral part built into the teaching learning process; it will become continuous like both teaching and learning. When evaluation is subsumed into teaching-learning, learners will not perceive tests and examinations with fear. It will lead to diagnosis, remediation and enhancement of learning.

The scope of evaluation in schools extends to almost all the areas of learners' personality development. It should include both scholastic and co-scholastic areas, i.e. it should be comprehensive in nature. This is in line with the goals of education. Evaluation is continuous and reveals the strengths and weaknesses of learners more frequently, so that the learners have better opportunity to understand and improve themselves. It also provides feedback to the teachers for modifying their teaching strategies.

In view of getting a complete picture of the child's learning, assessment should focus on the learner's ability to -

- learn and acquire desired skills related to different subject areas.
- acquire a level of achievement in different subject areas in the requisite measure
- develop child's individual skills, interests, attitudes and motivation
- understand and lead a healthy and a productive life.
- monitor the changes taking place in a child's learning, behaviour and progress over time.

- respond to different situations and opportunities both in and out of school.
- apply what is learned in a variety of environments, circumstances and situations
- work independently, collaboratively and harmoniously.
- analyze and evaluate.
- be aware of social and environmental issues
- participate in social and environmental projects and causes.
- retain what is learned over a period of time.

Thus assessment is a useful, desirable and an enabling process. To realize this one needs to keep the following parameters in mind -

The need to:

- assess the learner.
- use a variety of ways to collect information about the learner's learning and progress in subjects and cross curricular boundaries.
- collect information continuously and record the same.
- give importance to each learner's way of responding and learning and the time it takes to do so.
- report on an ongoing continuous basis and be sensitive to every learner's responses.
- provide feedback that will lead to positive action and help the learner to do better

In the assessment process, one should be careful NOT to:

- label learners as slow, poor, intelligent etc.
- make comparisons between them.
- make negative statements.

Continuous and Comprehensive Evaluation

Continuous and Comprehensive Evaluation (CCE) refers to a system of school-based evaluation of students that covers all aspects of a students' development. It is a developmental process of a child which emphasizes on two fold objectives. These objectives are continuity in evaluation on one hand and assessment of broad based learning and behaviourial outcomes on the other.

The term `*continuous*' is meant to emphasise that evaluation of identified aspects of students `*growth and development*' is a continuous process rather than an event, built into the total

teaching-learning process and spread over the entire span of academic session. It means *regularity of assessment, diagnosis of learning gaps, use of corrective measures and feedback of evidence to teachers and students for their self evaluation.*

The second term `*comprehensive*' means that the scheme attempts to cover both the scholastic and the co-scholastic aspects of students' growth and development. *Since abilities, attitudes and aptitudes can manifest themselves in forms other than the written word, the term refers to application of a variety of tools and techniques (both testing and non-testing) and aims at assessing a learner's development in areas of learning like :*

- Knowledge
- Understanding/Comprehension
- Application
- Analysis
- Evaluation
- Creativity

Objectives of CCE are:

- To help develop cognitive, psychomotor and affective skills.
- To lay emphasis on thought process and de-emphasise memorization
- To make evaluation an integral part of teaching-learning process
- To use evaluation for improvement of students' achievement and teaching – learning strategies on the basis of regular diagnosis followed by remedial instruction
- To use evaluation as a quality control device to maintain desired standard of performance
- To determine social utility, desirability or effectiveness of a programme and take appropriate decisions about the learner, the process of learning and the learning environment
- To make the process of teaching and learning a learner-centered activity.

Features of CCE are:

- The *'continuous'* aspect of CCE takes care of *'continual'* and *'periodicity'* aspect of evaluation.
- Continual means assessment of students in the beginning of instruction *(placement evaluation)* and assessment during the instructional process *(formative evaluation)* done informally using multiple techniques of evaluation.
- Periodicity means assessment of performance done frequently at the end of unit/term *(summative)*

- The *'comprehensive'* component of CCE takes care of assessment of all round development of the child's personality. It includes assessment in Scholastic as well as Co-Scholastic aspects of the pupil's growth.
- Scholastic aspects include curricular areas or subject specific areas, whereas co-scholastic aspects include Life Skills, Co-Curricular Activities, Attitudes, and Values.
- Assessment in scholastic areas is done informally and formally using multiple techniques of evaluation continually and periodically. The diagnostic evaluation takes place at the end of a unit/term test. The causes of poor performance in some units are diagnosed using diagnostic tests. These are followed up with appropriate interventions followed by retesting.
- Assessment in Co-Scholastic areas is done using multiple techniques on the basis of identified criteria, while assessment in Life Skills is done on the basis of Indicators of Assessment and checklists.

Source - Examination Reforms, NCERT

The functions of CCE are:

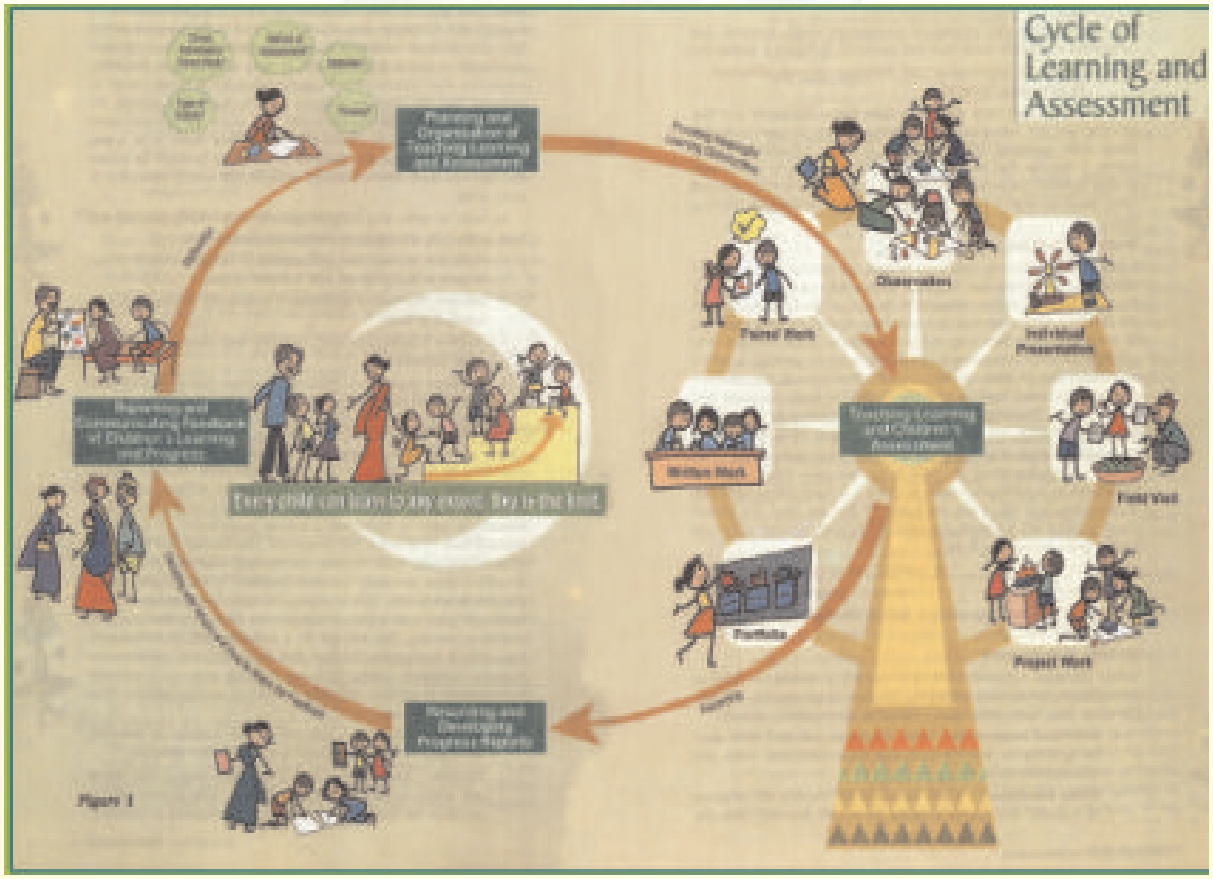
- It helps the teacher to organize effective teaching strategies.
- Continuous evaluation helps in regular assessment to the extent and degree of learner's progress (ability and achievement with reference to specific scholastic and co-scholastic areas).
- Continuous evaluation serves to diagnose weaknesses and permits the teacher to ascertain an individual learner's strengths and weaknesses and her needs. It provides immediate feedback to the teacher, who can then decide whether a particular unit or concept needs re-teaching in the whole class or whether a few individuals are in need of remedial instruction.
- By continuous evaluation, children can know their strengths and weaknesses. It provides the child a realistic self assessment of how he/she studies. It can motivate children to develop good study habits, to correct errors, and to direct their activities towards the achievement of desired goals. It helps a learner to determine the areas of instruction in which more emphasis is required.
- Continuous and comprehensive evaluation identifies areas of aptitude and interest. It helps in identifying changes in attitudes, and value systems.
- It helps in making decisions for the future, regarding choice of subjects, courses and careers.
- It provides information/reports on the progress of students in scholastic and co-scholastic areas and thus helps in predicting the future successes of the learner.

Continuous evaluation helps in bringing awareness of the achievement to the child, teachers and parents from time to time. They can look into the probable cause of the fall in achievement

if any, and may take remedial measures of instruction in which more emphasis is required. Many times, because of some personal reasons, family problems or adjustment problems, the children start neglecting their studies, resulting in a sudden drop in their achievement. If the teacher, child and parents do not come to know about this sudden drop in the achievement and the neglect in studies by the child continues for a longer period then it will result in poor achievement and a permanent deficiency in learning for the child.

The major emphasis of CCE is on the continuous growth of students ensuring their intellectual, emotional, physical, cultural and social development and therefore will not be merely limited to assessment of learner's scholastic attainments. It uses assessment as a means of motivating learners in further programmes to provide information for arranging feedback and follow up work to improve upon the learning in the classroom and to present a comprehensive picture of a learner's profile.

It is this that has led to the emergence of the concept of School Based Continuous and Comprehensive Evaluation.



Source : Ncert

Scholastic and Co-scholastic Assessment

In order to have Continuous and Comprehensive evaluation, both scholastic and co-scholastic aspects need to be given due recognition. Such a holistic assessment requires maintaining an ongoing, changing and comprehensive profile for each learner that is honest, encouraging and discreet. While teachers daily reflect, plan and implement remedial strategies, the child's ability to retain and articulate what has been learned over a period of time also requires periodic assessment. These assessments can take many forms but all of them should be as comprehensive and discreet as possible. Weekly, fortnightly, or quarterly reviews (depending on the learning area), that do not openly compare one learner with another and are positive and constructive experiences are generally recommended to promote and enhance not just learning and retention among children but their soft skills as well.

School Based Continuous & Comprehensive Evaluation

There has been a consistent move towards reducing the load on the student by making public or board examination stress free. Over the decade there has been a high pitched race towards more marks and thus more competitiveness among students and schools.

The move of the CBSE to replace marks with grades is a step in the right direction. The paradigm shift is to empower schools by creating a workable school based continuous and comprehensive scheme.

School Based Continuous and Comprehensive Evaluation system should be established to:

- reduce stress on children
- make evaluation comprehensive and regular
- provide space for the teacher for creative teaching
- provide a tool of diagnosis and remediation
- produce learners with greater skills

Position Paper on Aims of Education - NCF 2005, NCERT

Aims of School Based CCE

- Elimination of chance element and subjectivity (as far as possible), de-emphasis of memorization, encouraging Comprehensive evaluation incorporating both scholastic and co-scholastic aspects of learners development.
- Continuous evaluation spread over the total span of the instructional time as an integral built-in aspect of the total teaching-learning process.
- Functional and meaningful declaration of results for effective use by teachers, students, parents and the society.
- Wider uses of test results for purposes not merely of the assessment of levels of pupils' achievements and proficiencies, but mainly for its improvement, through diagnosis and remedial/enrichment programmes.
- Improvement in the mechanics of conducting examinations for realizing a number of other allied purposes
- Introduction of concomitant changes in instructional materials and methodology.
- Introduction of the semester system from the secondary stage onwards.
- The use of grades in place of marks in determining and declaring the level of pupil performance and proficiency.

The above goals are relevant for both external examination and evaluation in schools

Characteristics of School Based Evaluation :

- Broader, more comprehensive and continuous than traditional system.
- Aims primarily to help learners for systematic learning and development.
- Takes care of the needs of the learner as responsible citizens of the future.
- Is more transparent, futuristic and provides more scope for association among learners , teachers and parents.

School based evaluation provides opportunities to teachers **to know the following about their learners:**

- What they learn
- How they learn
- What type of difficulties / limitations they face in realising learning objectives together
- What the children think
- What the children feel
- What their interests and dispositions are.

The focus has shifted to developing a deep learning environment. There is a paradigm shift in the pedagogy and competencies of 'controlling' to 'enriching' to 'empowering' schools.

Traditional Schooling	Enriching Schooling	Empowering Schooling
• Teacher centred • Subjects and classes • Sorting and ranking individuals ***Competency:*** • Memory • Competitive	• Student centred • Self Directed • Continuous assessment ***Competency:*** • Critical thinking • Collaborative • Creative	• Experience centred • Virtual authenticity • Multi literacies ***Competency:*** • Risk taking • Ethical • Interactive

There are four Assessment Paradigms

Assessment of Learning

Most commonly, assessment is defined as a process whereby someone attempts to describe and quantify the knowledge, attitudes or skills possessed by another. Teacher directedness is paramount and the student has little involvement in the design or implement of the assessment process in these circumstances -

- Summative
- Teacher designs learning
- Teacher collects evidence
- Teacher judges what has been learnt (and what has not)

Assessment for Learning

The assessment for learning involves increased levels of student autonomy, but not without teacher guidance and collaboration. The assessment for learning is sometimes seen as being akin to 'formative assessment' and can be seen as informing teaching. There is more emphasis towards giving of useful advice to the student and less emphasis on the giving of marks and the grading function -

- Teacher designs learning
- Teacher designs assessment with feedback to student
- Teacher assesses what has been learnt (student develops insight into what has not)

Assessment as Learning

'Assessment as learning' is perhaps more connected with diagnostic assessment and can be constructed with more of an emphasis on informing learning. Assessment as learning generates opportunities for self assessment and for peer assessment. Students take on increased responsibility to generate quality information about their learning and that of others -

- Teacher and student co-construct learning
- Teacher and student co-construct assessment
- Teacher and student co-construct learning progress map

Assessment for learning and assessment as learning activities should be deeply embedded in teaching and learning and be the source of iterative feedback, allowing students to adjust, re-think and re-learn.

Assessment in Learning

The assessment in learning places the question at the centre of teaching and learning. It deflects the teaching from its focus on a 'correct answer' to focus on 'a fertile question'. Through the inquiry, students engage in processes that generate feedback about their learning, which come from multiple sources, and activities. It contributes to the construction of other learning activities, lines of enquiry and the generation of other questions -

- Student at the centre of learning
- Student monitors, assesses and reflects on learning
- Student initiates demonstration of learning (to self and others)
- Teacher as coach and mentor

Teachers and students need to understand the purpose of each assessment strategy so that the overall assessment 'package' being used by learners and teachers accurately captures, generates and uses meaningful learning information to generate deep learning and understanding.

Purpose of Assessment

- To ascertain what learning, change and progress takes place in the child over a period of time in different subjects of study and other aspects of the child's personality.
- To find out the needs and learning style of every learner.
- To devise a teaching-learning plan that is responsive to the individual needs and learning styles.
- To improve the teaching-learning materials by adding value.
- To help every learner find out their interests, aptitudes, strengths and weaknesses so that the learner can evolve effective learning strategies.
- To measure the extent to which curricular objectives have been realized.
- To enhance the effectiveness of the teaching-learning process.
- To record the progress of every learner and communicate it to parents and other stakeholders.
- To maintain a dialogue between the teacher and the student and also the parents as a collaborative endeavor for overall improvement of the system.
- To involve the learners in the process through peer and self assessment.

Different stages in Assessment

Examination is not assessment; it is only one of the tools of assessment. As we have seen above, assessment is an integral part of the teaching-learning process and hence cannot be seen as the final stage in isolation. The overall aim of assessment is to gather information to improve the teaching-learning process. So it has certain distinct stages.

Stage - 1: Gathering information about and evidence of the extent of effectiveness of teaching and learning

We gather information in a variety of ways, using a number of tools. Observation, conversation and discussion, assignments, projects, different types of tests etc are some of the methods and tools we use for collecting information.

Stage - 2: Recording of Information

The information gathered has to be systematically recorded because it constitutes not only rich inputs that have to be used for improving teaching and learning but also evidence to support the conclusion we come to about the progress made by the students. In order to make

the recording effective, we must use different recording devices such as learner profile, ancecdotal records, case studies, report books etc. It is essential that the information is recorded in both quantitative and qualitative terms along with well thought out and objective observations by the teacher. It is also necessary to keep samples of students' work as evidence to support the report of the teacher. The most important aspect of good recording and reporting is that it shows the progress of the learner in different domains over a period of time.

Stage - 3: Analysing and Reporting the Information Collected

The recorded information constitutes valuable feedback that the teacher, the student and the parents should use to enhance the learning process. To do this, the gathered information has to be analysed periodically so that the teacher can draw conclusions about how a child is learning and progressing. Such analysis and the grading that is done is actually a mapping of the progress of students in a learning environment. Analysis and review also leads to unambiguous statements about the strengths of every child and the aspects requiring further improvement. The report has to be communicated to the learners and their parents so that they are able to collaborate with the teacher to take the necessary steps for improving learning. It is essential that the child is encouraged to compete with self rather than with others. One of the key components of engaging students in the assessment of their own learning is providing them with descriptive feedback as they learn. Research shows descriptive feedback to be the most effective instructional strategy to move students forward in their learning. Descriptive feedback provides students with an understanding of what they are doing well, links to classroom learning and specific input on how to reach the next step.

Stage - 4: Using the Information for Improvement

Assessment should result in improvement. Though the student, the teacher and the parents are all stakeholders in this paradigm, it is the teacher who has to take the initiative to use the analysis of information on each learner to enhance learning. This calls for reflective practices. Some questions that the teacher could ask himself/ herself are:

1. Are all the learners involved in the activities of the class?
2. Are there learners who face problems in coping with the pace and flow of the teaching - learning process?
3. What are their problems and how should I help them?
4. Is there something in my teaching strategy that has to be modified to make the class learn better? How should I go about it?
5. Are there some learners who are not challenged by the materials and methods and hence lose motivation quickly? How should I respond to their special needs?
6. Are there some lessons/ chapters/ units that pose difficulties to many learners? How should I add value to these portions of the syllabus?
7. Have I identified certain common errors, mistakes and instances of lack of conceptual clarity from the information collected and analysed? How should I go about an effective programme of remediation?

8. Is my classroom time management effective? What are the changes that I could introduce to make it more learner and learning oriented?
9. Am I getting adequate support from the school management, my colleagues, the parents and the community? How can I involve all the stakeholders more actively in what I am doing for the benefit of my learners?
10. What are my own needs of professional development? How can I fulfil them in a continuous manner?

Such reflective questions will help the teacher modify and refine the programme of teaching to achieve the learning objectives as well as to enhance his/ her professional competence continuously.

By now it is well established that learning is a continuous process and it involves informal, formal and non-formal modes. It is also widely acknowledged that children learn by constructing their knowledge and it makes learning a process that takes place within the children rather than without. In this paradigm of constructivism, the teacher ought to recognize the importance of different stages of learning i.e., the initial stage where the existing knowledge of the learner is seen as the entry level, the second stage where new knowledge is understood and accommodated with the existing knowledge and the third stage where the constructed knowledge as a 'whole' is tested by the learner by applying it to real life situations for making sense of the world and the self and for drawing conclusions, problem solving, decision making etc. What constitutes knowledge at the third stage automatically becomes the learner's existing knowledge for further learning and thus it is a cyclical process.

The main purpose of assessment is to enhance the effectiveness of the learning process and hence it has to be integrated appropriately with every stage of learning. Since learning is continuous, assessment also must be continuous. Otherwise the learner will not be able to know whether she/ he is proceeding along the right lines, what is the stage at which he experiences difficulties, what are the new inputs and strategies that are required to successfully continue the process of construction of knowledge and what is the help that is expected from the teacher.

Similarly the teacher also has to know at what stage of learning each learner is at a particular point of time, what are the changes that are to be made to the teaching strategies to make every child learn effectively and what further help can be provided. For instance, when a child in class I comes to school, it is probable that the child has not had any formal schooling earlier. It does not mean that the child has no prior knowledge because learning, as has been pointed out earlier, can be through informal and non formal modes too. So the teacher's duty is to identify the prior knowledge of the child while dealing with a particular concept or skill. It is only then that the teacher can facilitate the process of construction of knowledge by each learner.

To ascertain the prior knowledge of the learner, the teacher has to adopt many tools and techniques, including questions. In the same manner, during the process of learning as well as at the subsequent stage of application of knowledge to real life, the teacher has to continuously assess the learner to facilitate a smooth process of accommodation, assimilation and extension.

From the above, it may be apparent that assessment, which is in essence formative, has to be integrated with the teaching-learning process. Formative assessment by definition, is the process of finding out the felicity with which a learner is able to 'form' concepts and skills and hence it is process rather than product oriented. When assessment is divorced from the process of construction of knowledge, it ceases to be an effective learning-enhancing procedure. Hence teachers, principals, students and other stakeholders are to read this manual keeping in mind the broader prospective of the entire teaching- learning process instead of limiting it to assessment even though the manual is on formative assessment.

It is to be understood then that all assessments, if they are to be effective, ought to be formative. However, there are subtle differences between formative and summative assessments which are more procedural than absolute. We can safely say that the broad frame work of formative assessment consists of a larger sub set of formative and a smaller sub set of summative assessments. Even a summative assessment could be used formatively when the information gathered from the summative assessment is used to improve the pedagogy, the materials and the assessment tools. When assessment is seen predominantly as formative, learners will be able to enjoy learning and they will not experience undue stress. On the other hand, when we give importance to only year-end or term-end summative tests or examinations, as has been the practice in many schools till recently, the system will throw up situations like the following:

- The examination time table was announced yesterday. When I went home and showed a copy of the time table to my mother, she got very excited. She gave me a lot of instructions about what I should and should not do. TV was out as was chatting with friends. Examination jitters and nerves suddenly gripped the entire household. When my father returned from office, he too joined the frenzied discussions which were all about preparation, hard work, marks and the frightening consequences of poor performance. I didn't sleep that night.

  - Shruti

- When I started writing the answer, my mind went completely blank. On the answer sheet in front of me I saw my father's face. He was telling me how important it was that I should do much better than my elder sister who he called a 'wash out'. In this trance like state I also heard my grandfather saying that if I didn't do well, his dreams would be shattered. Infact they all said that this was the foundation of my life.

  - Deepak

- I am under a lot of stress ever since the time table for the examination was announced. If the Board results are not upto to the expectations, my performance will be assessed and I will be given junior classes from next session. I feel very frustrated and hassled. I should take some special classes and make the dull students practice many sample question papers. Let them also learn answers to important questions by heart. I should somehow make them get good marks. Otherwise I will not hear the end of it.

  - Kavita, a teacher.

Aren't we all familiar with such outpourings? Education ought to liberate children from fear, anxiety, stress, insecurity and humiliation and lead them to enlightenment. But, over the years we have turned this sublime process into a mundane instrument for material gains. When scoring marks, gaining admission, landing a job and creating wealth come to constitute the main purpose of education, it creates intense competition and consequently, enormous pressure on children. If we want to make learning an enjoyable experience for every child, the challenge of changing the traditional system of examination should be accorded top priority.

MINDSET: We have got so used to the examination driven education system that any attempt to put alternatives in place is received with doubt and even skepticism. The examination - oriented education has created a well-defined paradigm whose main features could be identified as the following:

- Learning is geared towards appearing in an examination that usually comes at the end of the academic session.
- So, teachers and students see assessment as something that comes after the stage of learning, i.e., first children learn and then they will be examined.
- Since formal examinations are based on prescribed syllabi, teaching and learning becomes text book based where the teacher's job is only to transact the information included in the text book.
- Learning becomes synonymous with storage and retrieval of information with very little scope for individual thinking, originality and creativity.
- Since examinations are conducted in the remote future, teachers and students tend to be relaxed initially and get increasingly anxious towards the end.
- The build-up of stress becomes scary to students and they hardly ever look forward to examinations (unless of course they see them as the final obstacle before the release of tension and anxiety).
- In this paradigm the teacher does not necessarily focus on the process of teaching - learning since it is only the final product that is going to be assessed as the student's performance in the examination.

- The student can and often does postpone learning till the last minute. On the one hand learning ceases to be continuous and on the other it becomes unrealistically daunting due to the accumulated volume of learning to be attempted within a limited period.
- Students who have mastered the knack of cramming within a short period do well and those who lack this ability fare badly.

The above features, among all others that are often discussed and well known to all the stakeholders, have created a mindset that stems from the following beliefs.

- If there is no examination, teachers will not teach and students will not learn.
- Examination system is very comfortable for teachers because mostly they have only to teach the text books and prepare the students for the examinations at some distant future.
- If teachers have to take up continuous and comprehensive assessment, they have to put in more work. Hence status - quo is more comfortable.
- Assessment, if restricted to only the scholastic subjects, is a lot simpler than when it includes all the aspects of the student's personality.
- When assessment comes only at the end, teachers do not have the need to reflect on their practices and review them for causing better learning. It also means that no value addition is imperative to the materials and methods.
- **The Changing Scenario:** Now the mindset has to change because, the world over, the child is seen as the centre of the teaching-learning process. Assessment should take into account individual differences in terms of socio-cultural and economic background, learning strategies, styles and aptitudes. While the belief that 'one size fits all' has to be discarded, there is a need to individualise the teaching-learning process that is constantly improved to help every child learn, albeit in his/ her own way. It means that assessment should go hand in hand with the teaching-learning process, providing rich inputs to the teacher and the students to continuously enhance the effectiveness of the process. This can be achieved if
  - assessment is integrated with teaching-learning
  - the teacher uses assessment for ascertaining the strengths and weaknesses of the materials, the methods and the learners
  - the teacher makes use of assessment to improve his own teaching and the learning of every student
  - the learner gains an insight into his learning style and strategies and uses this insight to improve his learning.

Scholastic Assessment

The desirable behaviour related to the learner's knowledge, understanding, application, evaluation, analysis, and creativity in subjects and the ability to apply it in an unfamiliar situation are some of the objectives in scholastic domain.

In order to improve the teaching learning process, Assessment should be both Formative and Summative.

Formative and Summative Assessment

Formative Assessment is a tool used by the teacher to continuously monitor student progress in a non threatening, supportive environment. It involves regular descriptive feedback, a chance for the students to reflect on their performance, take advice and improve upon it. It involves students' being an essential part of assessment from designing criteria to assessing self or peers. If used effectively it can improve student performance tremendously while raising the self esteem of the child and reducing the work load of the teacher.

Features of Formative Assessment

- is diagnostic and remedial
- makes the provision for effective feedback
- provides the platform for the active involvement of students in their own learning.
- enables teachers to adjust teaching to take into account the results of assessment
- recognizes the profound influence assessment has on the motivation and self-esteem of students, both of which are cruicial influences on learning
- recognizes the need for students to be able to assess themselves and understand how to improve
- builds on students' prior knowledge and experience in designing what is taught.
- incorporates varied learning styles into deciding how and what to teach.
- encourages students to understand the criteria that will be used to judge their work
- offers an opportunity to students to improve their work after feedback,
- helps students to support their peers, and expect to be supported by them.

Formative Assessment is thus carried out during a course of instruction for providing continuous feedback to both the teachers and the learners for taking decisions regarding appropriate modifications in the transactional procedures and learning activities.

- '... often means no more than that the assessment is carried out frequently and is planned at the same time as teaching.' (Black and Wiliam, 1999)
- '... provides feedback which leads to students recognizing the (learning) gap and closing it ... it is forward looking ...' (Harlen, 1998)

- '... includes both feedback and self-monitoring.' (Sadler, 1989)
- '... is used essentially to feed back into the teaching and learning process.' (Tunstall and Gipps, 1996)

Summative Assessment is carried out at the end of a course of learning. It measures or 'sums-up' how much a student has learned from the course. It is usually a graded test, i.e., it is marked according to a scale or set of grades. Assessment that is predominantly of summative nature will not by itself be able to yield a valid measure of the growth and development of the child. It, at best, certifies the level of achievement only at a given point of time. The paper pencil tests are basically a one-time mode of assessment and to exclusively rely on them to decide about the development of a child is not only unfair but also unscientific. Over emphasis on examination marks focusing on only scholastic aspects makes children assume that assessment is different from learning, resulting in the 'learn and forget' syndrome. Besides encouraging unhealthy competition, the overemphasis on Summative Assessment system also produces enormous stress and anxiety among the learners.

Features of Summative Assessment

- Assessment of learning
- Generally taken by students at the end of a unit or semester to demonstrate the "sum" of what they have or have not learned.
- Summative assessment methods are the most traditional way of evaluating student work.

Summative Assessment

- "Good summative assessments--tests and other graded evaluations--must be demonstrably reliable, valid, and free of bias" (Angelo and Cross, 1993).
- '...assessment (that) has increasingly been used to sum up learning...'(Black and Wiliam, 1999)
- '... looks at past achievements ... adds procedures or tests to existing work ... involves only marking and feedback grades to student ... is separated from teaching ... is carried out at intervals when achievement has to be summarized and reported.' (Harlen, 1998)

Scholastic Assessment (Part I A)		
Formative Assessment (Flexible Timing)		Summative Assessment (Written-End of term)
Tools	**Techniques**	
• Objective type • Short Answer • Long Answers • Questions • Observation schedule • Interview schedule • Checklist • Rating scale • Anecdotal records • Document Analysis • Tests and inventories • Portfolio analysis	• Tests • Assignments • Quizzes and Competitions • Projects • Debates • Elocution • Group discussions • Club activities	• Objective type • Short Answer • Long Answers

Implications for the Teaching Community

The on going process of transformation of school education in general and evaluation practices in particular has re-defined the teacher's role. Some of the major implications are as follows:

- Teaching practices can no longer be a mechanical routine. Since formative assessment is an integral part of the classroom teaching, the teacher has to devise ways and means to use the feedback for improving curriculum transaction.
- Teaching the text book will not be the main mode of classroom practices. Value addition in terms of interactive tasks, co-operative assignments and projects and integration of new content will be required to involve all the learners in the teaching-learning process.
- Since formative assessment requires the teacher to devise appropriate tools and procedures that are specific to a unit or lesson taught, it will become imperative for the teacher to constantly add new materials and strategies to his/ her repertoire. It will also mean that the lesson plan becomes dynamic and constantly changing according to the needs of the lesson and the learners.
- The teacher has to become a true knowledge worker, referring to sources, reading new materials, discussing curriculum-related issues with colleagues and experts, writing materials and taking up research.

- Teaching can no longer be a six or seven hour job. It is a profession and the practitioner has to prepare himself / herself every day not only in the school but also outside the school.
- Recording and reporting will necessarily become more detailed because a number of parameters sometimes ignored or only weakly attempted have to be included effectively. Teachers will be required to devote adequate time on a regular basis for formative assessment and its recording. It also means that teachers should develop tolerance for complexity and ambiguity.

In short, the mindset has to change and the teaching community should develop a greater sense of accountability.

The Changing Paradigm

Introduction of Continuous and Comprehensive Evaluation has brought about a sea-change in the classroom. The main aspect of this change is the fact that assessment is becoming an integral part of the teaching-learning process. CCE and formative assessment are not new concepts and many schools have been practicing them for a long time now. However, assessment of scholastic and co-scholastic areas using a range of tools and indicators has provided the evaluation process a firmer scientific base as well as credibility. Similarly, though formative assessment has been part of the evaluation practices followed by schools, it has not been systematically used to identify learning gaps and for remediation. In a sense the system of unit tests, assignments and projects being used to reflect continuous assessment of learning has become more 'summative' in nature because the feedback is hardly used for improving the teaching-learning practices. It is necessary hence, to understand the concepts of formative assessment and summative assessment in proper perspective so that we are able to not only construct tools accordingly but also use them for the purposes for which we construct them.

What is Formative Assessment?

Let us look at a task:

Subject: Social Science **Class: VIII**
Topic: Women, Caste and Reform
Task: Dramatization

Procedure:

1. Students will be divided into groups. They will in their groups, discuss and prepare a short skit on any of the social ills prevalent in the Indian Society at different periods of time.
2. The social ills may include Sati, Child Marriage, Female Infanticide, Denial of Education to Women and Gender Disparity.
3. Each group will prepare a small skit and perform it. Each student will be asked to speak some dialogue.
4. After the presentation, students will have a discussion.

Learning Objectives:

- To enable the learners to gain an insight into the social evils prevalent in India at different periods of time.
- To provide an opportunity to the learners to reflect on social evils and verbalize their feelings.

Skills:

To develop in the students the ability to

- Write scripts
- Deliver dialogue
- Act
- Work in teams

Assessment

The performance of the groups will be assessed on the basis of content, dialogue-delivery and clarity of concept.

Time:

- Discussion and script writing: 2 periods;
- Presentation: 1 period

Follow up:

The presentations could be discussed by the class. Wherever the concept is not clear, teacher could encourage students to give their comments. The teacher could also revisit any part of the lesson that has not been clearly understood by the students.

Is this a formative or summative assessment task?

It has the following features:

- The main objective is to enable the learners to gain an understanding of the concept of social evils perpetrated against the girl child and the woman in India at different periods of time.
- The task is part of the teaching-learning of the topic of women, caste and reform.
- The task involves students in group interaction and presentation.
- After the task is completed, the teacher gives feedback for improvement. Also, if needed, the lesson may be reviewed.
- Assessment is done on the basis of well-defined criteria.
- The task is done in the classroom as part of the lesson.
- The main purpose is not to measure the knowledge of the learners. The task aims to provide conceptual clarity to the learners through experiential learning.
- It also encourages further learning.

These attributes are at the heart of Formative Assessment.

Let us now look at the following questions given in a test:

What are the different social evils prevalent in Indian society at different times? How have they affected girl children and women? Write your answer in about 200 words.

This is a typical question that figures in a summative test or examination. Here the main aim is to measure the extent of knowledge of the learners in the lesson tested. The answers of the learners will be marked or graded on the basis of value points and a marking scheme. The information collected by the teacher may not be used to diagnose the problems faced by learners or for remediation since the test is usually conducted after completing the unit or lesson.

However, if a short quiz or test is conducted on the topic when the lesson is in progress to ascertain the learning gaps for the purpose of providing further help to learners, it will be formative in nature. **So, by and large the way in which a tool is used, i.e. for enhancing learning or for ascertaining and measuring the extent of learning, decides whether it is for formative or summative purpose.**

For our own conceptual clarity let us look at the attributes of Formative and Summative Assessment in detail.

Formative Assessment

- Formative Assessment is the assessment that takes place during a course or programme of study.
- It is an integral part of the learning process.
- It is often informal, i.e., it is carried out by teachers while teaching.
- It provides feedback to both teacher and learner about how the course is going and how learning can be improved during the course.
- It helps teacher and learner answer the following questions:
  - Are the learners doing what they need to do?
  - Are the teaching and learning strategies chosen by the teacher in need of modification?

When the cook tastes the soup, that's formative;
when the guests taste the soup, that's summative."

- Robert Stakes.

Summative Assessment

- Summative Assessments are given periodically to determine at a particular point in time what students know and do not know.
- Summative Assessments are usually associated with standardized tests such as Board Examination, Half-yearly and Annual Examination and even Unit Tests.
- They are spread out and occur after instruction every few weeks, months or once a year.
- Hence they are tools to help evaluate the effectiveness of programmes, school improvement goals, alignment of curriculum and student placement.
- Since they are used to 'sum up' learning they are called Summative Assessments.
- They are always formal in nature.
- These assessments happen too far down the learning path to provide information at the classroom level and to make instructional adjustments and interventions during the learning process.

• Formative Assessment is assessment *for* **LEARNING.**	• Summative Assessment is assessment *of* **LEARNING.**
• Formative Assessment is **PEDAGOGY.**	• Summative Assessment is essentially **EVALUATION.**
• Formative Assessment can be thought of as **'PRACTICE'.**	• Summative Assessment can be seen as **PERFORMANCE AFTER PRACTICE.**

• A good comprehensive assessment programme balances formative and summative assessments.

What is NOT Formative Assessment?

It is seen that under the guise of continuous evaluation schools conduct a series of 'tests'. There are tests for almost every day of the week or every month of the academic session. The argument put forth is that only by conducting frequent tests continuous assessment can be ensured. However, such practices can hardly he called formative assessments because they are not integrated with the teaching-learning process. Nor is the information collected by the teachers from such tests effectively and systematically used for improving the teaching-learning process.

Case Study

Students of class IX are given the following project in science:

Project on Communicable Diseases

- Collect information about communicable diseases by referring to books and journals and surfing the internet.
- Present the information in a folder with illustrations, pictures and photographs.

- The folders should be submitted for evaluation within 15 days.
- The folders will be evaluated on the following criteria:
  Content, Neatness of Presentation and Illustration

Students complete the task individually and submit the folders by the dead line. Teacher grades the work of the students as per the assessment criteria.

Question:

- Is it a good formative task?
- How are the students helped by the teacher and peer groups in doing the task?
- What are the objectives of the project?

  — To assess the student's ability to collect information and present them?

  Or

  — To enable the students to deepen their learning?

If the purpose is to help the learners acquire a deeper understanding of the topic of the project then the project should be organized differently.

- Teacher should discuss the project with the learners.
- They will explore ways in which information could be gathered, understood and adapted.
- Provide scope for group work so that learners study the topic collaboratively and help and support each other.

- Teacher monitors the entire process at regular intervals, giving feedback for correction, modification and refinement.
- Besides submitting a folder, the learners are also required to make a presentation to the class or take a viva voce.
- Assessment is done by involving the learners in peer assessment.
- The information gathered by the teacher and the learners is used to improve and further the teaching-learning process.

One major concern with regard to such projects and assignments is that the teacher has very little scope to ensure that they are done by the students themselves. It is now common knowledge that projects and assignments can be 'bought' from shops. Instances of parents doing the projects are also not uncommon. Furthermore, downloading information from the internet also leads to very little learning.

Hence, to use projects and assignments as effective tools of formative assessment, the teacher should take certain precautions:

- Make the learners do the task **as far as possible** in the school itself under the direct supervision of the teacher.
- Discuss the project with the learners and monitor their progress at every stage.
- Involve them in the assessment process through self and peer assessment.
- Give descriptive feedback as an instructional strategy to move students forward in their learning.
- Help students link their classroom learning with the task and their experience.
- Follow it up with activities like revisiting some of the concepts, explanations etc.

What does this Manual contain?

After the introduction of CCE in schools affiliated to CBSE in class IX during 2009-10, the Board felt it necessary to provide a holistic picture of CCE to all the stakeholders, particularly the teachers. Hence a Teacher's Manual on Continuous and Comprehensive Evaluation - Class IX & X was brought out. Besides giving detailed information about the scheme of CCE, fundamentals of assessment of co-scholastic and scholastic areas, dimensions of school-based assessment and tools and techniques of evaluation for formative and summative purposes have also been included in the manual. The term-wise split up of weightage for formative and summative assessments has also been provided in the manual.

As a sequel to this publication, the Board decided to bring out a series of manuals to provide exemplar and illustrative materials on Formative Assessment in Languages, Mathematics, Science and Social Science for classes IX and X. Detailed guidelines with specifications for Summative Assessment have already been provided to schools. It is the formative assessment that needs to be strengthened and hence these manuals.

Objectives of the Manual on Formative Assessment

1. To clarify the concept of formative assessment within the broad framework of CCE.
2. To integrate formative assessments (FA 1, FA 2, FA 3 & FA 4) with the materials prescribed and classroom procedures.
3. To help teachers and learners use formative assessment for enhancing the teaching-learning process.
4. To provide a rich source of formative assessment tasks for the units/ lessons in Languages, Mathematics, Science and Social Science for classes IX and X.
5. To help teachers use the Formative Assessment tasks given in the manuals for generating further tasks on their own.
6. To enable teachers to gain conceptual clarity with regard to Formative and Summative Assessments.
7. To motivate teachers to build their capacity to add value to materials and methods.
8. To help teachers plan and manage time effectively.
9. To provide guidelines to schools to record formative and summative assessments in a systematic manner.
10. To provide scope for teacher development in the area of assessment as well as for consultations and enrichment.
11. To initiate a healthy and meaningful interaction between different stakeholders on CCE and the place of formative assessment in this scheme.
12. To make the teaching - learning process enjoyable for both the teachers and the learners.

Content:

The manual contains the following broad areas.

1. Formative Assessment & Summative Assessment: Concept and distinction.
2. What are NOT good formative assessment practices.
3. Overall framework of Formative Assessment with split up of units, time frame, periodicity, number of tasks for each formative assessment, calculation of weightage and recording, analysis and follow-up.
4. Formative Assessment Tasks for different units/ lessons in Languages, Mathematics, Science and Social Science for classes IX & X.

Overall Framework of Formative Assessment in Classes IX & X - Scholastic Areas.

Scholastic Part 1 (A)

Evaluation of Academic Subjects in Class IX & Class X.

Six assessments are proposed. These are valid for most schools, however they can be varied or adapted with written communication to the Board.

Type of assessment	Percentage of weightage in academic session	Month	Term wise weightage
FIRST TERM			
Formative Assessment-1	10%	April-May	FA 1+2= 20%
Formative Assessment-2	10%	July-August	
Summative Assessment-1	20%	September	SA 1= 20%
SECOND TERM			
Formative Assessment-3	10%	October-November	FA 3+4= 20%
Formative Assessment-4	10%	January- February	
Summative Assessment-2	40%	March	SA 2= 40%

Total Formative Assessments = FA 1 + FA 2 + FA 3 + FA 4= 40%
Smmative Assessments = SA 1 + SA 2= 60%

The following points have to be noted by teachers and students (For Classes IX & X).

- There are two formative assessments each in the first and second term.
- Each Formative Assessment is again divided into smaller assessments (class assignments, quiz, projects, written tests) which can carry different marks.
- Each formative assessment has a weightage of 10% which can be arrived at by taking an average of all tasks or the best three or four.
- The total weightage of all the four formative assessments is 40%.
- The time-frame, split up of syllabus as per the four formative assessments, and the minimum number of suggested tasks for each formative assessment have been given in the

annual planner for each subject. The annual planner is only suggestive and schools can adapt it as per their needs.

Formative Assessment and Classroom Teaching.

The formative assessment tasks have been designed keeping the following principles in mind:

- Formative assessment is an integral part of classroom practices. So they have been related to the syllabus to be transacted.
- The tasks generally specify the following:
  - Unit/ Lesson
  - When to conduct the task.
  - Approximate time required for each task.
  - Objectives of the task.
  - Task specifications.
  - Procedure for conducting the task including preparation, if any.
  - Criteria for assessment
  - Feedback and follow-up.

Teachers, however, have the freedom to make minor modifications in the overall design of the task to suit their requirements.

> The most important aspect to be kept in mind is that these tasks are meant to be integrated with the teaching-learning process, i.e. **while** teaching a unit/ lesson **(and NOT after)**. Also the follow up in terms of providing further help to clear doubts, remove problems faced by learners and make modifications in teaching methods and strategies has to be given utmost importance. Hence FA tasks will figure in the teaching plans developed by teachers.

Split-up of Syllabi

To facilitate smooth implementation of CCE, CBSE has already provided split-up of syllabi for all the subjects term-wise. This manual has further sub-divided the syllabi reflecting the name and number of units/ lessons covered for FA 1, FA 2, SA 1, FA 3, FA 4 and SA 2. Though the weightage for each of the four Formative Assessments is 10 %, the number of units/ lessons may vary for each of these depending on the time available in the annual academic calendar. Teachers are advised to study the suggested annual calendar at the beginning of the academic session and collaboratively design their own annual plan making any minor modifications they feel necessary to suit their specific needs. However it is necessary that the overall scheme is

retained to ensure that continuous and comprehensive evaluation is carried out in its true spirit.

Summative and Formative Assessments

In the first term the weightage given to formative assessment (FA 1 + FA 2) is 20%. The weightage given to SA 1 is 20%. Schools should assess the students in the entire syllabus meant for the first term in SA 1. What it means is that there may be one or two units that are transacted after FA 2. These units will be included for assessment in SA 1. Similarly, in the second term, the rest of the syllabus will be assessed in SA 2. It implies that teachers need not be unduly concerned about assessment of the units/ lessons that are taught after conducting FA 4. These units/ lessons along with the others meant for second term will be covered by SA 2 for 40%. It is also to be noted that if any unit/ lesson has not been formatively assessed due to time constraint, it will be assessed summatively at the end of each term.

Procedure for Formative Assessments

- The suggested split up of syllabi will be followed by teachers for formative assessment.
- The minimum number of formative assessment tasks as suggested in the annual plan have to be conducted. However, teachers can give more than the minimum number of tasks depending on the need and time available.
- The performance of students in each task will be assessed on the basis of assessment criteria given.
- The total of marks obtained by each student in the formative tasks will be calculated and reduced to 10 marks. For instance, if three tasks of 5 marks each have been given for FA 1 and a student obtains 3, 3 and 2 in these tasks, the total obtained by the student will be 8 out of 15. The weightage for 10 will be (8 ÷ 15) x 10 = 5.33 = 5 = Grade C (The total will be rounded off to the next whole number if the decimal is 0.5 or more. If less, it will be ignored). Similarly the mark will be calculated for FA 2, FA 3 and FA 4 and the total will yield the marks in formative assessment out of 40% marks for the whole academic session.

Record Keeping

It is absolutely essential that teachers maintain a clear record of the formative assessments conducted because they will be verified by CBSE from time to time. The following points have to be kept in mind while recording FA.

- Individual report book as suggested by CBSE has to be maintained in addition to student report form.
- A separate consolidated marks register must be maintained reflecting the following for each student.
  - Tools of Formative Assessment (quiz, MCQs, debate, group discussion, creative writing, presentation etc) must be recorded.

- Maximum marks, marks obtained and weightage for 10 marks for each of the four formative assessments must be maintained.
- Cumulative total in FA must be calculated and recorded.

Schools may devise a suitable format for the marks register. Many schools are computerising the entire process of recording the assessments. While evolving such a programme, care may be taken to ensure that all the relevant particulars are included in the programme.

- Recorded evidence of student performance and teacher/ self/ peer assessment has to be collated and maintained so that queries of parents may be answered based on such evidence. In this context the importance of student portfolio gains significance. It is suggested that every student maintain a portfolio consisting of the best of their written work in each subject. These should include the work submitted as draft as well as the edited and improved versions to demonstrate the progression of learning over a period of time. Teacher will find it convenient to open individual student portfolio folders at the beginning of an academic session, discussing with students the importance of and the procedure for maintaining the portfolios.
- It is to be noted that the assessment has to be reflected in the report book only as grades. The grades will be on the 9 point grading scale as given below.

91 - 100	A1
81 - 90	A2
71 - 80	B1
61 - 70	B2
51 - 60	C1
41 - 50	C2
33 - 40	D
21 - 32	E1
00 - 20	E2

- The marks in the consolidated marks register will be calculated to arrive at the weightages for different FAs & SAs and the equivalent grades will be entered in the Report Book. What it means is that the assessment of each task in FA and each SA test will be carried out in terms of marks which will be entered in the consolidated Marks Register. Grades to be entered in the Report Book once in each term will be calculated accordingly from the consolidated Marks Register.
- Apart from the above records, schools will also maintain a Reuslts Register for each section which could be consolidated for primary and secondary classes at the end of the academic session.

Task Types Appropriate for Formative Assessment

The Teacher's Manual on CCE throws much light on the types of assessment tools available to the teacher. It also mentions that all the tools are not appropriate for formative assessment. In this manual an attempt has been made to clarify what is NOT formative assessment. Since the purposes of formative and summative assessments differ, the tools have to be chosen carefully. However, as a general rule, the following will help teachers in making a decision in this regard:

- Formal Paper Pencil tests are not always suitable for formative assessment because schools tend to make use of them more for summative rather than for formative purpose.
- Similarly, Projects and Assignments that need much work outside the school and class hours also may not be ideal for formative assessment. The reasons are obvious:
  - Without proper monitoring, these tasks may lose their validity and credibility. (Students may just copy or download from the internet. Parents and others may actually do the projects and assignments. Now a days projects and assignments could be bought from 'Education Shops'!)
  - **To be formative, the tasks should involve collaboration, discussion, reflection and improvement.**

  On account of these reasons, projects and assignments should be very carefully used as tools of formative assessment. However, in the hands of imaginative and resourceful teachers, they may become effective formative assessment tools.
- What can be effectively assessed through formative assessment cannot be assessed through summative assessment. Speaking and listening skills, presentation skills and practical skills and all the co-scholastic areas have to be assessed formatively.
- By combining formative and summative assessments all the aspects of a learner's personality development can be comprehensively covered.

Some of the Precautions that can be taken

a). Give realistic projects and assignments. Don't give topics like:
'Survey of Moghul Architecture.

It will invariably lead to 'Cut & Paste' practices. On the other hand, it will be realistic to expect students to attempt the following on their own:

Choose any one example of Moghul Architecture. Collect information and pictures on the monument. Write a brief report in about 2 pages giving the following details:

- Name of the Monument.
- Period when built.
- Who built it.
- The purpose (History of the Monument)
- Salient Architectural features.
- Its present state.

b) It is not enough if we make the project or assignment simple and realistic. In order to ensure that further learning has taken place and that the students are able to link new knowledge with what they have learnt in the class, the teacher could interview each student on the project. The interview, if conducted imaginatively, could be very brief but at the same time give proof of the student's own research and presentation.

c) Make projects a group activity so that it can be done in the classroom itself. Groups will decide, with the teacher's help, what projects they will work on, division of the project into smaller units, allotment of smaller units among members etc. It means that project work should be discussed in the class to make it work.

d). Fix a time frame and interact with groups to see where they are at different stages, what they are doing and whether they need any help. This will instill seriousness of purpose, besides motivating the students to take up their work with keen interest.

5. As pointed out earlier, the formative and summative tools are determined by the purpose for which they are used.

   a. If the purpose is to formally ascertain at a given point in time what students know and do not know, then it is summative.

   b. If the purpose is to informally get information regarding how the course is going, how learning can be improved during the course itself, what are the challenges faced by individual learners and how the teacher should address them, then it is formative.

   So it is the purpose of the tools that usually determines whether it is for formative or summative assessment. Having said this, we can still make an attempt to identify assessment tools that are more suitable for formative assessment than for summative assessment. Since summative assessment is formal and is usually a paper-pen test, what cannot be assessed by such means can be assessed only through formative assessment tools.

Suggested Tools for Formative Assessment.

Language

- Listening Comprehension
- Reading Comprehension
- Debate/ speech/ Group Discussion/ Role Play /Presentation
- Dramatization/ Dialogue/ Conversation/ Commentary
- MCQs/ Quiz
- Grammar Exercises.
- Writing/ Completing a poem, story, script, play, diary entry etc.
- Web Charts, Concept Mapping
- Visual Representation
- Letter, E-mail, data interpretation, article, bio sketch and dialogue completion

It is suggested that at least one out of four tasks should be used for assessing convesation skills in the form of listening comprehension or convesation.

Mathematics

- Data handing and analysis.
- Group projects
- Problem solving
- Maths Lab Activities
- Quiz/ oral questions
- Experiments
- Presentations
- Chart, model making
- Visual Representation
- Simple and interesting assignments
- Mathematical puzzles based on various theorems.

It is suggested that for Mathematics at least one activity out of four should be used for assessing performances in maths lab activities.

Science

- Experiments
- Information gathering and deducing
- Presentations on science concepts/ experiments
- Investigations for stated problems
- MCQs and Science Quiz
- Simple and interesting assignments
- Group assignments and projects.
- Model Making
- Science symposium/ seminar.
- Preparation of various compounds/salts
- explanation of different natural phenomenon using scientific principles.

It is suggested that for science, at least one out of four formative assessments in the year are experiments.

Social Science

- Written assignments involving inference, interpretation and evaluation
- Commentaries
- Simple projects (group & individual)
- Presentations (group & individual)
- Quiz and MCQ's
- Models and charts.
- Debates
- Symposium/ Seminar
- Conducting intervenes of historical figures
- Role plays
- Dramatization of historical events

It is suggested that in social Science at least one out of four activities should be based on project.

In addition to the tools listed above teachers can devise other informal ways in which formative assessment can be done. For instance observation of student's performance in the class (participation, answering questions etc) can also be used effectively for formative assessment. Written tests have not been included in the above list because they tend to become formal and hence are more suitable for summative assessment. Moreover, if written tests are also used for formative purposes, there will be a tendency to use them more often as they are relatively easy to construct and administer. This will lead to an increase in the stress level of students. They are better used for summative assessment. This, however, does not prevent teachers from holding one minute tests, open book tests and concept-based questions expecting written answers during the course of teaching a unit or lesson. The answers have to be analysed and discussed to provide conceptual clarity and address gaps in learning. Some of the formative assessment tasks included in this manual involve a fair bit of writing. However, they are all to be attempted in the class with scope for feedback.

How to use this Manual

As already mentioned, this manual contains a number of formative assessment tasks for classes IX & X in all the main scholastic subjects. Teachers can make use of them in a planned manner not only to assess learning but also to enhance the effectiveness of their own teaching. Some suggestions for the effective use of the formative tasks are given below:

a. Planning

At the beginning of the academic session teachers of the same subject can consult each other and draw out a plan of formative assessment for the entire session. A suggested annual planner is given for each subject in the manual. The annual plan drawn up by each school should include the following details:

- How many formative tasks will be used for FA 1, FA 2, FA 3 and FA 4. (The number of tasks should not be less than the minimum suggested)
- The identified tasks from the manual (Teachers are, however, free to add their own tasks to the ones given in the manual)
- While deciding/ choosing the tasks, care should be taken to select a variety so that knowledge and skills are covered comprehensively and there is no scope for monotony to set in. For example, in languages, the different skills like reading, writing, speaking and listening and language areas like literature and grammar have to be covered in formative assessment. The plan could distribute tasks over the four formative assignments in such a way that all these aspects are assessed at least twice or thrice in a session. Similarly the tasks may be chosen in other subjects in such a way that they assess different skills and competencies using a variety of modes of assessment.

b. Classroom Strategies

Since the tasks are to be integrated with classroom instruction, teachers have to embed them in their lesson plans.

Task specification as given in the manual may be used by teachers in the following manner:

Objectives: These specify the learning outcomes for each task and hence help teachers and learners in developing a focus. They are also meant to be kept in mind at the time of assessment.

Procedure: A task may need some preparations on the part of the teacher. These are included under 'Procedure'. The different steps to be followed, precautions to be taken and suggestions for collecting information are also provided under this heading.

Criteria for Assessment

In order to make the assessment objective and systematic, specific criteria have been provided for each task along with suggested marks. It is essential that the teachers put up these criteria or read them out to the class before commencing a task. Learners should know on what basis they will be assessed. It will also give them task clarity. The scores obtained by students in each of the tasks conducted must be recorded. The record of assessment should also be maintained. Wherever a written product emerges, it may be made part of the student portfolio.

Feedback/ Follow Up

This is a crucial stage in formative assessment. The performance of students gives valuable information about their understanding, conceptual clarity, problems faced and gaps in learning. Based on this information, teachers could give feedback and undertake follow up activities for remediation and enrichment. The information will also enable teachers to modify their practices for enhanced effectiveness of learning.

Some Challenges

Teachers may face certain challenges in integrating formative assessment with teaching. This may be due to

- Large class size
- Scarcity of time
- Constraints imposed by logistics
- Strategy to assess group/ pair tasks.

With the help of proper planning these challenges could be overcome. Some suggestions are given below:

Large Class Size

- Choose tasks that involve group work and pair work.
- Tasks that require written answers from the learners could be peer assessed.
- Answers to MCQs and other objective type questions could be marked by students themselves by exchanging their work sheets as the teacher calls out the answers.

- All the students in a class need not be assessed in one period. It means that the tasks may be distributed among groups of students so that the teacher is able to assess them in different periods. The implication is that in large classrooms all the students need not be assessed in all the tasks. By planning the tasks carefully, all the skills can however be covered by rotating the tasks among groups of students.
- It follows from this that all the students need not be involved in the same task at a time. In order to cater to multiple intelligence, teachers could adopt a flexible approach with regard to giving tasks to students. For instance, students good in written work may be given tasks different from students good at practical work.
- While framing the time table some double periods could be provided in each subject. Tasks involving debates, presentations, group discussions, dramatization, role plays etc could be conducted during the double periods.

Time Management

Since the number of teaching periods for each subject is pre-determined, teachers may feel that conducting formative assessment tasks within the allotted periods may prove to be difficult. However, it is to be borne in mind that formative assessment is to be built into the teaching-learning process and it only represents a change in the methods to be adopted for curriculum transaction. By reducing explanations and frontal teaching, adequate time could be found for tasks and activities. Some other suggestions are:

- Proper planning will result in efficient time management.
- Complete the preparations for each task well before the class begins so that there is no wastage of time.
- Use self and peer assessment strategically.
- Train learners in the initial part of the term to collaborate with each other and the teacher. Over a period of time they will be able to maintain efficiency and brisk pace.
- It is essential that the scoring sheet with names of students is prepared at the beginning of the academic session as per the annual plan. Columns for FA 1, FA 2, FA 3, FA 4 may be provided along with details of the tasks selected for each assessment and the maximum marks so that recording of scores does not take much time.
- Train the students in maintaining their portfolios. A folder may be maintained for every subject in which the best written products could be filed by each student. When students are helped to take responsibility for record keeping, it will ease some burden on the teachers besides leading to better time management.

Logistics

Photocopying of worksheets may not be feasible in all the schools. Teachers have to adopt a few strategies to overcome this problem.

Suggestions

- Only elaborate worksheets and those with diagrams and pictures need to be photocopied.
- Wherever possible, the worksheet can be put up on the blackboard.
- If technology is accessible, worksheets could be projected with the help of an LCD projector.
- MCQ's and objective type questions could be read out and students instructed to write only the answers on a sheet of paper.
- Instructions for pair work, group work and whole class work could be read out once or twice.
- Share with the Principal and school administration the requirement of photocopies in advance so that the school makes adequate arrangements.
- Always use both the sides of the sheet of paper for photocopying. It may mean that more than one task is photocopied on a single sheet. After the students complete one task the sheets may be collected and redistributed for the next task.
- Whenever possible, worksheets could be shared by two or more students.
- Train the students to observe economy in the use of paper/ worksheet.

Strategy to assess group/ pair tasks.

Initially teachers may find it a little difficult to assess group/ pair tasks because the product is usually from more than one student. Some suggestions are given below to help the teachers in this regard:

- Wherever possible group and pair tasks could be broken down into smaller areas and each member of the group could be assigned an area.
- Where the above is not feasible, the contribution of each student to group work has to be observed and monitored.
- Usually after group discussion a presentation is to be made by each group. Care may be taken to rotate the presentation among all the students so that over a period of time all are given an opportunity to present the group's views.
- Group tasks may be assessed for the entire group/ pair. It means that members of each group may get the same mark/ grade. However, in pair tasks it is easier to assess the performance individually.
- Since formative assessment is informal, group tasks may be assessed on broad parameters such as participation, contribution and effectiveness of each member of the group.
- It is necessary that the teacher monitors group tasks properly to ensure that every student is participating and no student dominates.

Conclusion

This document has laid emphasis on teacher-preparedness, planning and co-ordination. It is suggested that at the time of drawing out an annual plan, the principal interacts with each subject committee and helps the teachers prepare a plan of action ensuring that assessment is integrated with the teaching-learning process.

It may be necessary to prepare detailed lesson plans for each unit/ lesson besides the overall plan for the first and second term. While the lesson plan should essentially be an innovative tool evolved by each teacher depending on the concepts to be taught, the needs of the learners and other socio-cultural factors, it is perhaps advisable to include certain broad areas in the lesson plan to make it reflect the integration of continuous and comprehensive evaluation. While these broad areas, along with the format of the lesson plan could be decided by each school, the following components could be included to ensure holistic planning:

- Content/ topic/ lesson.
- Concepts/ skills
- Instructional Objectives.
- Levels - entry, process, integration, exit.
- Tools of assessment with specific questions
- Remediation.

It is also suggested that the formative tasks may be assessed for ten marks or multiples of ten to facilitate easy calculation of weightage. Similarly, self evaluation by students could be encouraged by integrating ICT and developing student self-access tools. While it will provide ample scope for learner autonomy, it will also reduce the burden on the teachers. Finally a word about projects. This document specifies that projects should, as far as possible, be done in the school itself. But certain projects that call for extensive research and work involving hands and using different materials may be difficult to be carried out within school hours. Since the main concern is about the genuineness and credibility of the work submitted for assessment by the students, if adequate care is taken by the teacher in monitoring the project work, students may be allowed to do some part of it outside the schools. Detailed guidelines on the precautions to be taken in this regard have been provided in this manual. By making the projects realistic and simple, teachers can ensure authenticity of the work of students.

Basics of Information Technology

Learning Objectives

- To appreciate the need and usage of a word processing tool in our daily life.
- To differentiate between Primary and Secondary Memory and also RAM and ROM.
- To recall definitions of a Computer System, Storage devices, I/O devices, Memory and CPU
- To name the different units of memory
- To understand the need for and working of the different I/O devices
- To explore the usage of the different storage devices and also identify the most suitable storage media for a particular situation.
- To outline the importance of each of the different types of software and cite examples of each of the software types

Suggested Formative Assessment Tasks:

Task1: Word Search

Topic	**Basics of Information Technology**
Period of task	Pre Content
Content Coverage	Basic characteristics and components of a computer system. CPU, Memory, Storage Devices and Input/Output Devices.
Learning Objectives	Name and identify different components of a computer system and commonly used terminology associated with computers.
Task	Word Search
Execution of task	Each student would be given an activity sheet with a grid of letters. They would then be asked to search for computer components and commonly used computer terminology in the grid.
Duration	1 period

Criteria for assessment	This is just a fun activity aimed at revisiting the terms related with computers that the students are aware of.
Follow up	The teacher will point out the words that the students were not able to find in the grid and also discuss briefly about each of the terms in the grid. The teacher may ask students to say a few words about the terms identified by them.

Activity Sheet- Word Search

C	A	I	W	W	E	L	D	K	E	H	T	R
P	N	G	X	F	T	X	E	F	V	A	M	R
U	N	W	O	B	Y	Y	S	J	I	R	O	E
M	T	S	D	D	B	H	O	J	R	D	N	T
O	H	D	V	O	U	M	F	L	D	W	I	N
U	G	A	A	V	H	U	T	M	N	A	T	I
S	Q	R	R	J	H	G	W	O	E	R	O	R
E	D	J	M	D	M	A	A	I	P	E	R	P
W	G	H	E	W	D	X	R	V	D	V	W	P
W	R	X	H	K	M	I	E	K	V	O	B	R
B	O	D	Q	A	S	D	S	U	D	F	F	U
M	R	J	G	K	W	P	K	K	W	C	T	M
E	M	B	R	E	K	A	E	P	S	D	I	U

Answers :

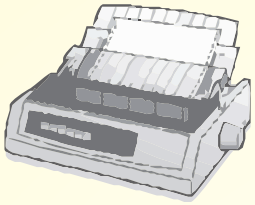
Byte	Monitor
CPU	Mouse
DVD	Pen Drive
Hard Disk	Printer
Hardware	Software
Keyboard	Speaker

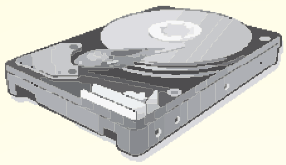
C	A	I	W	W	E	L	D	K	E	H	T	R
P	N	G	X	F	T	X	E	F	V	A	M	R
U	N	W	O	B	Y	Y	S	J	I	R	O	E
M	T	S	D	D	B	H	O	J	R	D	N	T
O	H	D	V	O	U	M	F	L	D	W	I	N
U	G	A	A	V	H	U	T	M	N	A	T	I
S	Q	R	R	J	H	G	W	O	E	R	O	R
E	D	J	M	D	M	A	A	I	P	E	R	P
W	G	H	E	W	D	X	R	V	D	V	W	P
W	R	X	H	K	M	I	E	K	V	O	B	R
B	C	D	Q	A	S	D	S	U	D	F	F	U
M	R	J	G	K	W	P	K	K	W	C	T	M
E	M	B	R	E	K	A	E	P	S	D	I	U

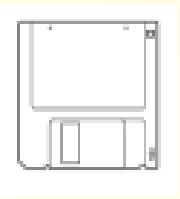
Task2: Figures Speak

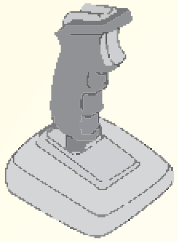
Topic	Basics of IT
Period of task	Content
Content Coverage	Basic characteristics and components of a computer system. CPU, Memory, Storage Devices and Input/Output Devices.
Learning Objectives	Familiarize the students with different input, output and storage devices.
Task	Identify and Put in the right box
Execution of task	Each student would be given an activity sheet with an image of devices. They would then be asked to identify each device and sort them as input, output or storage and write it in the correct box.
Duration	1 period
Criteria for assessment	This is just a fun activity aimed making the students familiar with different input, output and storage devices.
Follow up	The teacher may discuss each device in detail while doing this activity.

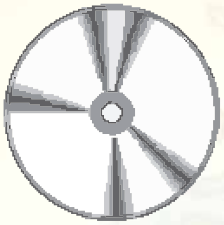
Task2: Identify and Put in the right box

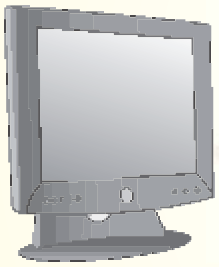


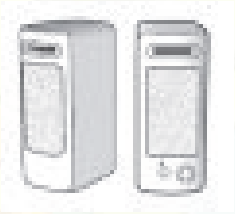


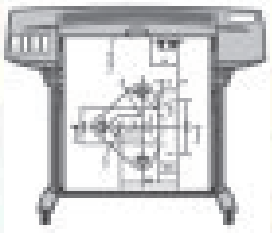












INPUT DEVICES	OUTPUT DEVICES	STORAGE DEVICES

Answers :

Printer	Hard Disk	Mouse	Floppy Disk
Joystick	CD/DVD	Pen Drive	Microphone
Monitor	Speakers	Plotter	Webcam

INPUT Devices	OUTPUT Devices	STORAGE Devices
Mouse	Printer	Hard Disk
Joystick	Monitor	Floppy Disk
Microphone	Speakers	CD/DVD
Webcam	Plotter	Pen Drive

Task3: Sorting Task

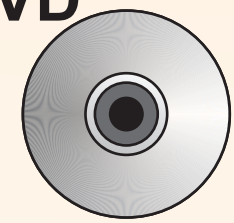
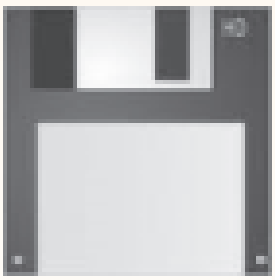
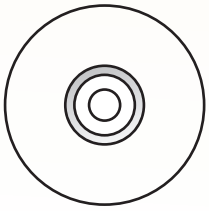
Topic	**Basics of IT**
Period of task	Post Content
Content Coverage	Secondary Storage Devices
Learning Objectives	Recall the features and usage of various secondary storage devices. The task aims at enabling the learners to gain an insight into the most appropriate usage of the various storage devices.
Task	Sorting Task
Execution of task	Get students to put the correct size, image and example of use with the storage device.
Duration	1 period
Criteria for assessment	This is just a fun activity aimed at making the students familiar with different storage devices and their usage.
Follow up	The teacher could develop this further by asking students to sort the storage devices in order of size.

From the following lists sort the devices, sizes and their usage and place them in the position in the given table.

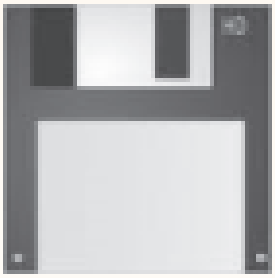
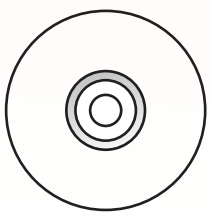
Devices
Floppy Disk
CD-ROM
DVD
USB Flash Memory
Stick
Hard Disk
Magnetic Tape

Sizes
700 MB
1.44 MB
20-110 GB
64 MB - 256 GB
60 MB - 1 TB
4.7 GB Single - 9.4 GB double

Usage
Backing up the school network overnight
Copying a small homework file to take to school.
Storing a large computer game or a movie
Regularly transferring files between home and school, possibly with graphics.
Storing a number of video or movie files.
Storing all of your software applications and documents

Image	Storage Device	Size	Example of usage
DVD 			
			
			
			
			
			

Answer Key:

Image	Storage Device	Size	Example of usage
	DVD	4.7GB Single - 9.4GB double	Storing a number of video or movie files.
	Magnetic Tape	20-110 GB	Backing up the school network overnight
	USB Flash Memory Stick	64 MB - 256 GB	Regularly transferring files between home and school, possibly with graphics.
	Floppy Disk	1.44 MB	Copying a small homework file to take to school.
	Hard Disk	60 MB - 1TB	Storing all of your software applications and documents
	CD-ROM	700 MB	Storing a large computer game or a movie

Task4: Three facts

Topic	Basics of IT
Period of task	Post Content
Content Coverage	Characteristics of a computer, components of a computer system - CPU, Memory, Storage Devices and I/O Devices Memory - Primary (RAM & ROM) and Secondary Memory; Units of Memory - Byte, Kilobyte, Megabyte, Gigabyte, Terabyte I/O Devices - Keyboard, Mouse, Printer, Joystick, Scanner, Microphone, OCR, MICR, Light Pen, Barcode Reader, Digital Camera, Speaker, Plotter; Storage Devices - Hard Disk, CD ROM, DVD, Blu Ray, Pen/Flash Drive, Memory Stick;
Learning Objectives	Recall the characteristics and components of a computer system. The task aims at strengthening the analytical skills of the learner.
Task	Three facts
Execution of task	Students will be asked to write down three facts that they can remember about the topic.
Duration	1 period
Criteria for assessment	Teacher may record the performance of students and write the result. It's a part of C.W. assessment.
Follow up	The teacher should stress on the fact that important aspects about the terms should be stated which will help strengthen the analytical skills.

Write three facts that come to your mind about the following terms. One example is done for you :

ALU

a) Stands for Arithmetic and Logic Unit

b) It is a part of the CPU

c) Performs arithmetic and logical operations

CPU

a) _____

b) _____

c) _____

HARDWARE

a) _____

b) _____

c) _____

SOFTWARE

a) _____

b) _____

c) _____

SECONDARY STORAGE DEVICE

a) _____

b) _____

c) _____

RAM

a) _____

b) _____

c) _____

OCR

a) _____

b) _____

c) _____

OPERATING SYSTEM

a) _____

b) _____

c) _____

MICR

a) _____

b) _____

c) _____

ROM

a) _____

b) _____

c) _____

SCANNER

a) _____

b) _____

c) _____

Suggested questions for oral assessment

1. Name the major components of CPU and explain the function of each component.
2. Differentiate between RAM and ROM.
3. What is the advantage of using a plotter to produce a printout?
4. Give one reason why a digital camera is suitable for obtaining pictures for a multimedia presentation.
5. A company is developing a piece of multimedia language software for use in a school. Give two reasons why the company decides to issue the software on CD-ROM and not on floppy discs.
6. Michael wishes to make a copy of his Computer practical assignment which is stored on the school computer system. He wants to take it home to finish it for homework. He can borrow a CD RW from school but he has a 128 Mb memory stick of his own.
   a. Give two advantages of using the CD RW.
   b. Give two advantages of using the memory stick.
7. What is the primary function of an operating system? Give examples of three popular Operating Systems.
8. Give 3 examples of operations carried out by utility programs?

Suggested Fill in the blanks Exercise

i. An operating system is a _____without which a computer cannot work.

ii. An architect's office producing house plans would use a _____ for taking printouts.

iii. A _____ converts the text or image on an original document into digital information that can be stored on a disk and processed by the computer.

iv. _____ printer produces high quality, fast printouts.

v. 1 KB = _____ Bytes and 1 GB = _____ MB

vi. A _____ is flash memory storage device that plugs in a USB port.

vii. An Input device used to capture sound and voices _____

viii. An input device useful for playing games _____

ix. _____ is the more common name for the programs or instructions on your computer.

x. _____ is a data input technology based on the automatic recognition of magnetic ink.

Please Note : Formative Assessment tasks are meant for learning. It is not always necessary to assess all of them. The teacher has the liberty to choose any of the tasks or create her own tasks for evaluating the students.

Basics of Information Technology (Contd.)

Learning Objectives

- To appreciate the need and usage of a computer network.
- To identify the different types of network as LAN, MAN and WAN.
- To recall definitions and basic terms related to networking.
- To enumerate the usage of different types of wired and wireless communication media.

Suggested Formative Assessment Tasks:

Task1: Word Search

Topic	**Communication Technology**
Period of task	Pre Content
Content Coverage	Basics of networks and communication.
Learning Objectives	Name and identify various terms related to networks and communication.
Task	Word Search
Execution of task	Each student would be given an activity sheet with a grid of letters. They would then be asked to search for network and communication related terms they are familiar with.
Duration	1 period
Criteria for assessment	This is just a fun activity aimed at helping the students to recapitulate common terms related with networks that the students are aware of.
Follow up	The teacher will point out the words that the students were not able to find in the grid and also discuss briefly about each of the terms that were found by the students.

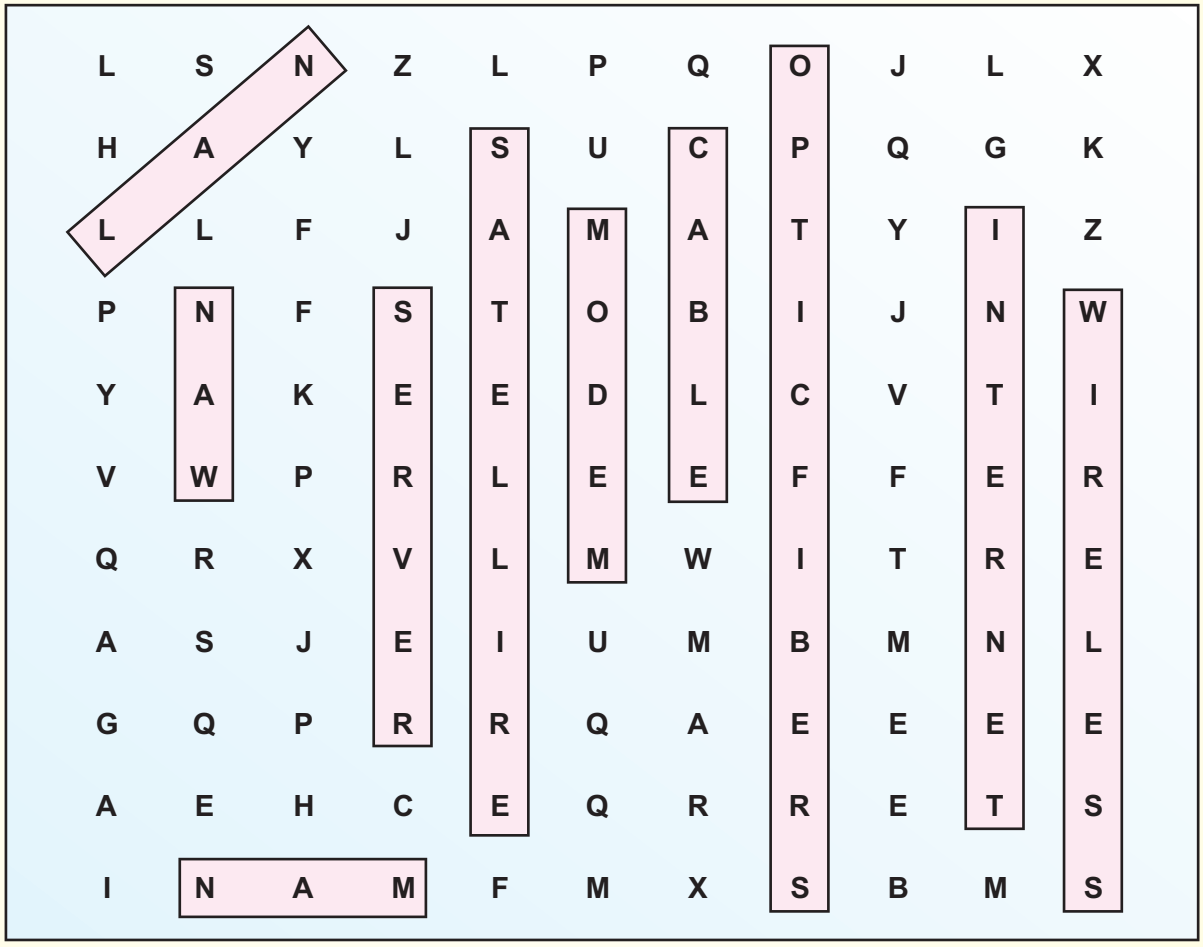
Activity Sheet- Word Search

Search and circle terms related to networks and communication that you can find.

L	S	N	Z	L	P	Q	O	J	L	X
H	A	Y	L	S	U	C	P	Q	G	K
L	L	F	J	A	M	A	T	Y	I	Z
P	N	F	S	T	O	B	I	J	N	W
Y	A	K	E	E	D	L	C	V	T	I
V	Q	P	R	L	E	E	F	F	E	R
Q	R	X	V	L	M	W	I	T	R	E
A	S	J	E	I	U	M	B	M	N	L
G	Q	P	R	T	Q	A	E	E	E	E
A	E	H	C	E	Q	R	R	E	T	S
I	N	A	M	F	M	X	S	B	M	S

Answers :

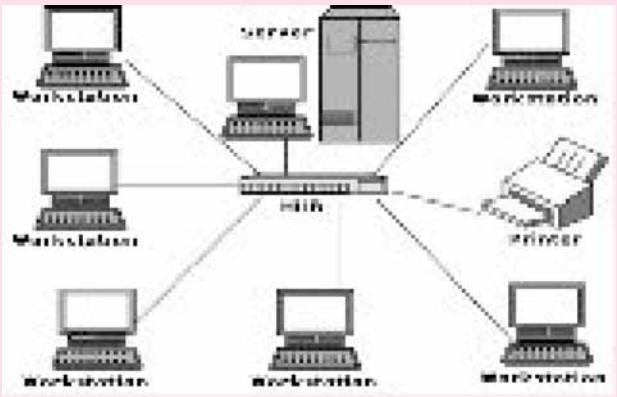
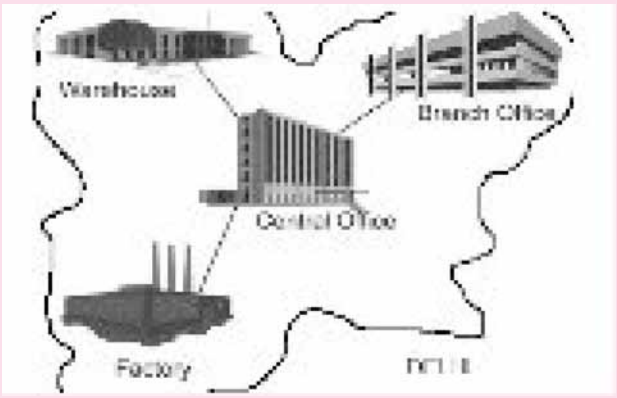
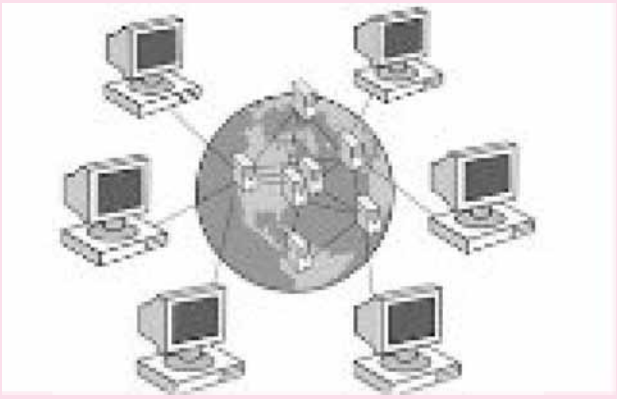
CABLE	OPTIC FIBER
INTERNET	SATELLITE
LAN	SERVER
MAN	WAN
MODEN	WIRELESS



Task2: Figures Speak

Topic	Communication Technology
Period of task	Content
Content Coverage	Computer Networking - LAN, MAN, WAN
Learning Objectives	Identify different types of networks and distinguish between them.

Task	Figures Speak
Execution of task	Each student would be given the activity sheet. They would be then asked to identify the appropriate type of network and discuss the features of each of them. Teacher may draw similar network diagram on the chalk board and discuss the features of each one by one.
Duration	1 period
Criteria for assessment	This is an activity to reinforce the differences between the different types of networks in class. The students should be marked if they correctly identify the network type, its range and medium.

Type of Network	Range/Coverage	Media used to connect
 Network_____		
 Network_____		
 Network_____		

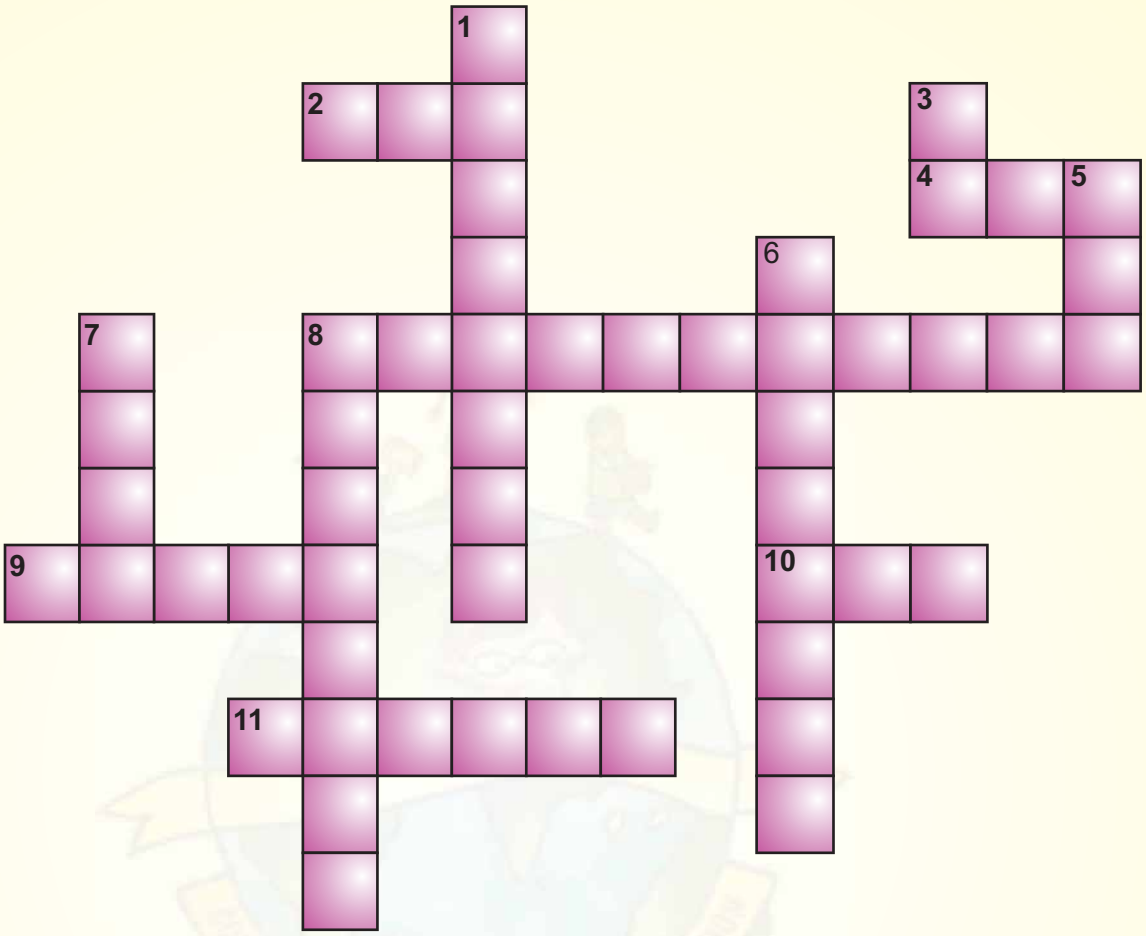
Answers :

Type of Network	Range/Coverage	Media used to connect
Local Area Network	Usually connects users in a small area or even in the same building.	Usually connected by Ethernet cables or WiFi.
Metropolitan Area Network	Connects users in a particular geographic area or region like within a city.	Usually connected by optical fiber or wireless media.
Wide Area Network	Can interconnect networks throughout the world and is not restricted to a geographical location.	Usually combines many types of media such as telephone lines, cables, satellite, microwave and radio transmission.

Task3: Cross Word

Topic	Communication Technology
Period of task	Post-Content
Content Coverage	Computer Networking - LAN, MAN, WAN, Internet, Interspace Wired Networking Technology examples Co-axial Cable, Ethernet Cable, Optical Fiber Wireless Networking Technology examples Bluetooth, Infrared and WiFi
Learning Objectives	Recall the basics of networks and communication.
Task	Cross Word
Execution of task	Each student would be given the activity sheet. They would be then asked to identify the appropriate feature after reading out the given clues. Teacher may draw a similar cross word on the chalk board also and speak out the clues one by one.
Duration	1 period
Criteria for assessment	This is a fun activity to recapitulate the features learnt in the class and the students can be marked based on the number of words identified correctly.

Networks and communication



Across

2 A computer net work covering a small physical area

4 It is a globally accepted standard for digital cellular communication

8 A computer which is connected to a network

9 This usually connects a LAN together

10 A computer network that spans a long distance

11 The machine that stores data and files on a network

Down

1 A network of networks

3 It is a short form for thrid-generation wireless

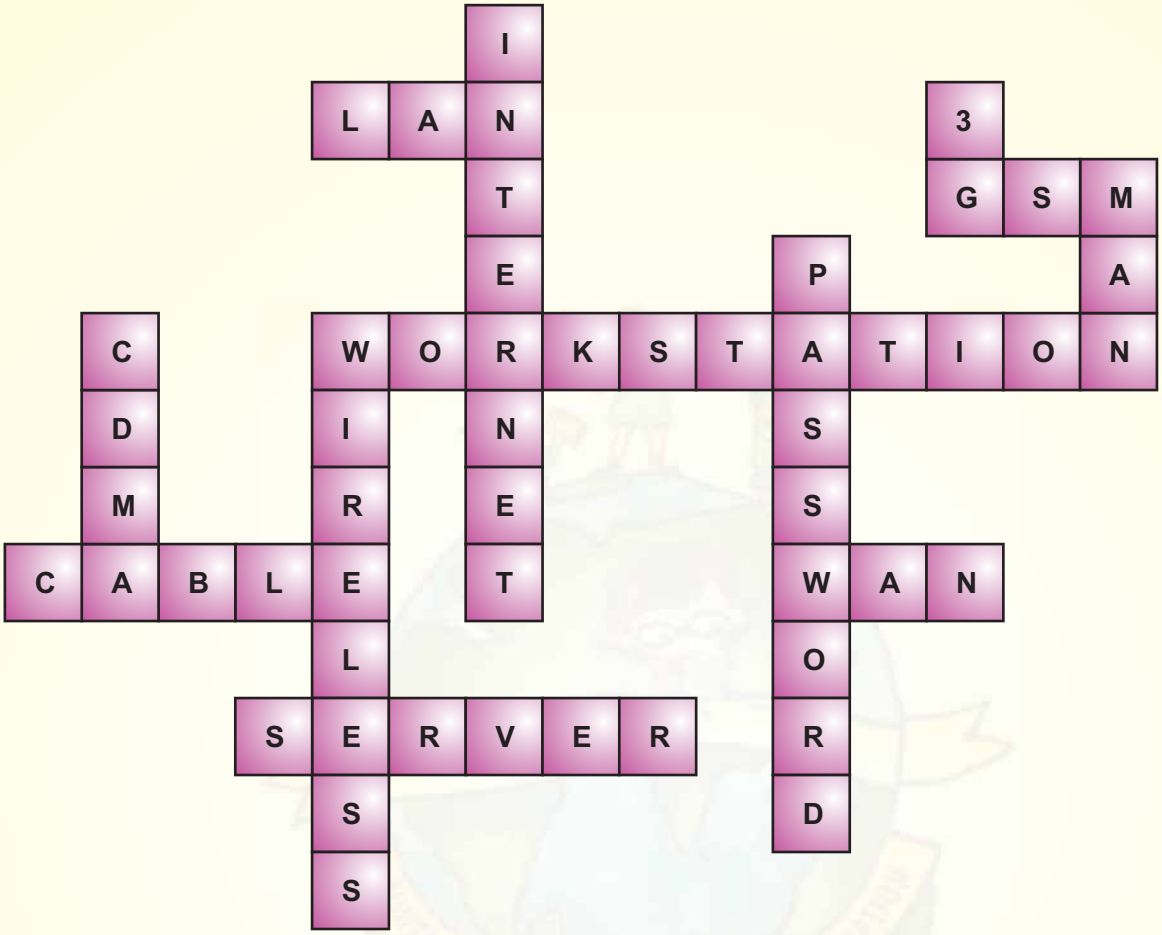
5 A network spanning a whole city

6 You need this to log on to your network account

7 It is a spread spectrum technology

8 This network does not use cables

Networks and Communication



Task4: Case Study - You are the Network Admin

Topic	Basics of IT Communication Technology
Period of task	Post-Content
Content Coverage	Computer Networking - LAN, MAN, WAN, Internet, Interspace Wired Networking Technology examples Co-axial Cable, Ethernet Cable, Optical Fiber Wireless Networking Technology examples Bluetooth, Infrared and WiFi
Learning Objectives	Recall the basics of networks and communication.
Task	You are the Network Admin

Execution of task	The teacher may divide the class into groups for this assessment. Each student or group would be given the activity sheet which contains a scenario that requires the use of networking technologies. The students will study the scenario and suggest suitable networking solutions.
Duration	1 period
Criteria for assessment	Teacher may record the performance of students and write the result. It's a part of C.W. assessment.

Task4: Case Study - You are the Network Admin

In an architect's office there are ten employees working in three departments on three different floors of a building. Each employee has a standalone computer system and there is a shared printer in each department and there is a single plotter to print all the building plans. The architect has been advised that it would be more efficient if the ten computers were formed into a network.

1. The architect has asked you to give him three reasons why it would be a good idea for his workplace to use a network.

   i) _____

   ii) _____

   iii) _____

2. What kind of network would you install in the architect's office and why?

   Type of Network : _____

   Reason : _____

   _____

3. Name two items of hardware that will be needed to connect these ten computers.

   i) _____

   ii) _____

4. The architect wants to keep his cost to the minimum, so suggest an economical cable type which has high speed data transfer to connect the computers.

   _____

5. The architect has heard of the words 'Infrared' and 'Bluetooth'. He wants to know why you cannot use this technology to connect his computers instead of cables. Give him two reasons why these two technologies cannot be used in his office.

   i) _____

   ii) _____

Suggested questions for oral assessment

1. What does the word 'Computer Network' mean?
2. Give two differences between a Local Area Network (LAN) and a Wide Area Network (WAN).
3. Explain the usage of the following:
   a. File Server
   b. Modem
   c. Optical Fiber
   d. Infrared
   e. WiFi
   f. CDMA
   g. GSM

Suggested Fill in the blanks exercise

i. A _____ is a collection of computers that have been linked together so that they can communicate with each other allowing them to share _____ and _____.

ii. Computers on a network are joined together by _____ or radio waves.

iii. On the network the applications and user data are stored on a powerful central computer called a _____.

iv. A single computer on the network is called a _____.

v. Computers that are located in the same building or fairly close together are usually connected to form a _____.

vi. Computers that are a long distance apart, in a different town or country are networked to form a _____.

Please Note : Formative Assessment Tasks are meant for learning. It is not always necessary to assess all of them. The teacher has the liberty to choose any of the tasks or create her own tasks for evaluating the students.

CBSE
KNOW - AS YOU GROW

Information Processing Tools

Word Processing Tools

Learning Objectives

- To appreciate the need and usage of a word processing tool in our daily life.
- To learn how to create, save and print a document
- To recall definition and basic terms related to word processor viz. editing, formatting, header, footer, Auto format and Print Preview.
- To explore the usage of basic features viz. changing font type, size, color & alignment, formatting paragraphs using line spacing & paragraph spacing, adding Headers and Footers, Auto Format and Spelling and Grammar utilities.
- To create well formatted documents using advanced features like Inserting Symbol, Clipart and Pictures, Page Setting, Bullets and Numbering, Borders and Shading, Format Painter, Find and Replace and Inserting Tables.
- To explore the usage of Mail Merge feature for sending an individual document to multiple recipients.
- To state the importance of Track Changes feature in relation to collaborative editing of a document.

Suggested Formative Assessment Tasks:

Task1: Figures Speak

Topic	**Word Processing Tool Using Open Office Writer**
Period of task	Pre Content
Content Coverage	Basic and Advanced features related to Word Processor viz. changing font type, size, color & alignment, formatting paragraphs using line spacing & paragraph spacing, adding Headers and Footers, Auto Format and Spelling and Grammar utilities, Bullets and Numbering and Borders and Shading.
Learning Objectives	Recall the basic and advanced features of a word processing tool
Task	Figures Speak

Execution of task	Pre Content
Content Coverage	Each student would be given the activity sheet. They would be then asked to write an appropriate feature being used in each of the given pictures. Teacher may draw a similar figure on the chalk board also.
Duration	1 period
Criteria for assessment	This is just a fun activity. Students are aware of these features.
Follow up	Teacher may use the given flash cards for review and recall.

Activity Sheet- Figures Speak

Figure	**Write a suitable feature corresponding to each figure.**
1. A word processor is a computer application used for the production (including composition, editing, formatting, and possibly printing) of any sort of printable material.	
2. Modern day examples of word processors include ❀ Open Office Writer ❀ Corel WordPerfect ❀ Microsoft Word ❀ Apple Pages	
3. Most current word processors can calculate various statistics pertaining to a document including Character count, word count and page count.	
4. You use mail merge when you want to create a set of documents that are essentially the same but where each document contains unique elements. For example, in an invitation letter the text about the venue and date will be same in each letter, and the address and greeting line will be different in each letter.	

5. The term word processing was invented by IBM in the late 1960s. IBM defined the term in a broad and vague way as "the combination of people, procedures, and equipment which transforms ideas into printed communications."

6. Text editors (modern examples of which include Notepad, BBEdit, Kate, Gedit), were the precursors of word processors. While offering facilities for composing and editing text, they do not format documents.

7. Some of the useful features are :

Feature	Usage
Borders & Shading	To apply borders to text, page or paragraphs
Track Changes	To record changes done by multiple people

Answers - Flash cards

1. A word processor is a computer application used for the production (including composition, editing, formatting, and possibly printing) of any sort of printable material.

BOLD

2. Modern day examples of word processors include
   - Open Office Writer
   - Corel WordPerfect
   - Microsoft Word
   - Apple Pages

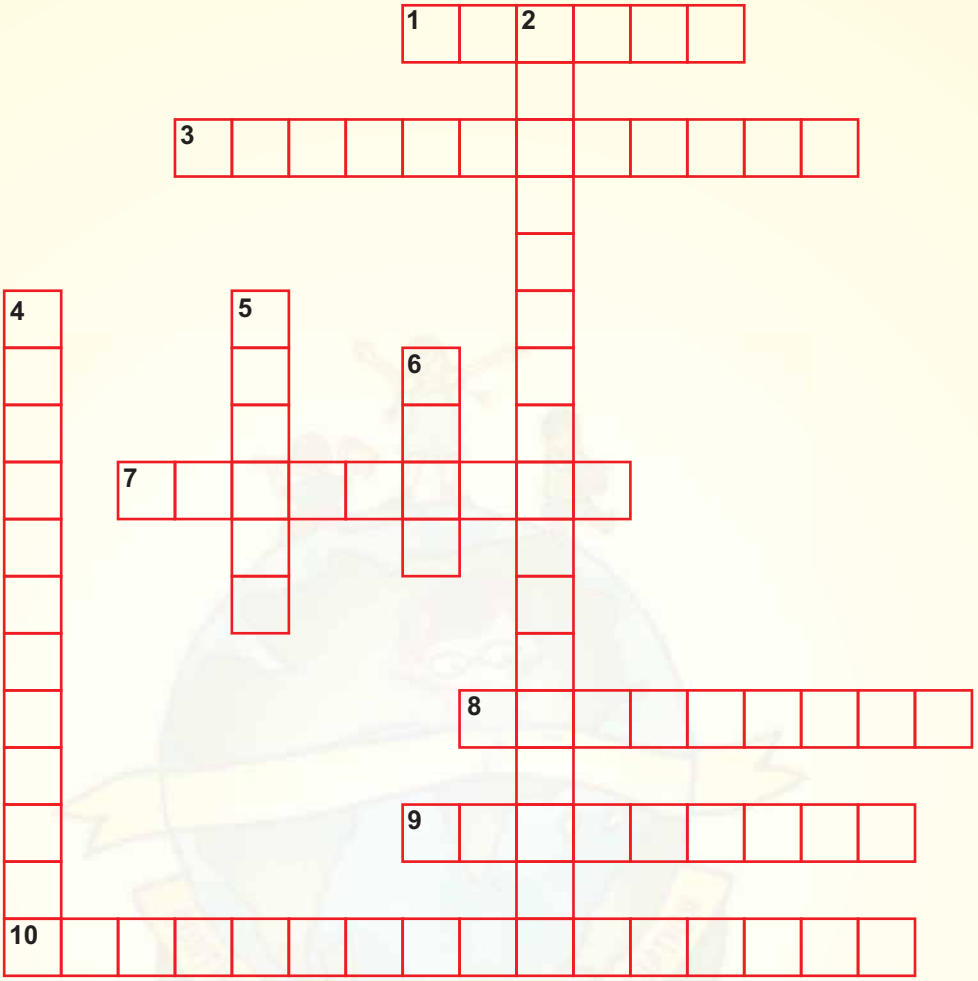
BULLETS AND NUMBERING

3. Most current word processors can calculate various statistics pertaining to a document including Character count, word count and page count.	**LINE SPACING**
4. You use mail merge when you want to create a set of documents that are essentially the same but where each document contains unique elements. For example, in an invitation letter the text about the venue and date will be same in each letter but the address and greeting line will be different.	**FONT SIZE AND COLOUR**
5. The term word processing was invented by IBM in the late 1960s. IBM defined the term in a broad and vague way as "the combination of people, procedures, and equipment which transforms ideas into printed communications."	**BORDERS AND SHADING**
6. Text editors (modern examples of which include Notepad, BBEdit, Kate, Gedit), were the precursors of word processors. While offering facilities for composing and editing text, they do not format documents.	**TEXT ALIGNMENT**
Some of the useful features are : Feature – Usage Borders & Shading – To apply borders to text, page or paragraphs Track Changes – To record changes done by multiple people	**TABLE**

Task2: Cross Word

Topic	Word Processing Tool Using Open Office Writer
Period of task	Pre Content
Content Coverage	Basic and Advanced features related to Word Processor viz. changing font type, size, color & alignment, formatting paragraphs using line spacing & paragraph spacing, adding Headers and Footers, Auto Format and Spelling and Grammar utilities, Bullets and Numbering and Borders and Shading.
Learning Objectives	Recall the basic and advanced features of a word processing tool
Task	Cross Word
Execution of task	Each student would be given the activity sheet. They would be then asked to identify the appropriate feature after reading out the given clues. Teacher may draw a similar cross word on the chalk board also and speak out the clues one by one.
Duration	1 period
Criteria for assessment	This is just a fun activity to recapitulate the features learnt in the class.

Features of Word Processing Tool



Clues

Across

1 A feature used to present information in a grid of rows and columns

3 A feature used to see how the document will look after printing before actually printing it

7 A feature used to emphasize text by underlining it

8 A feature used to send sam letter to multiple recipients

9 A feature used to set how text is displayed in relation to the page margins

10 A feature used to automatically check all spelling and grammatical errors

Down

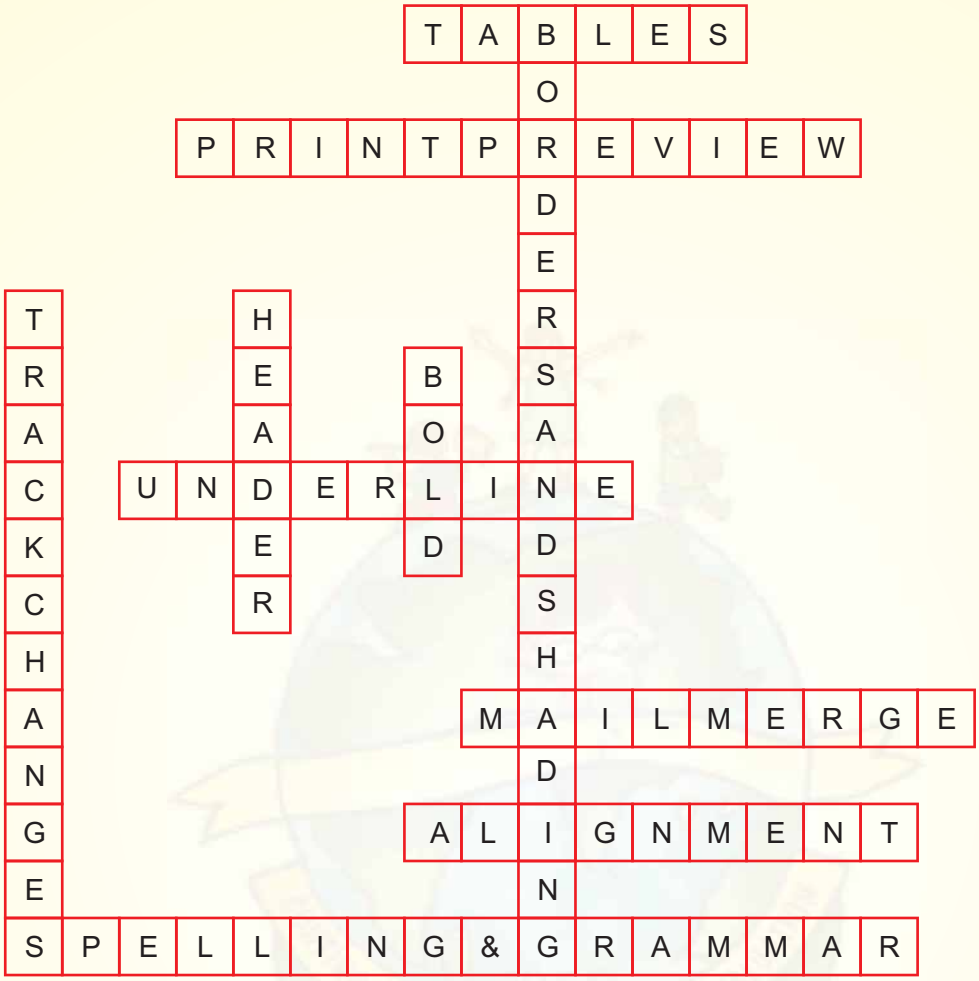
2 A feature used to add decorative borders around text, paragraph or page in a document

4 A feature used to see what changes have been made to a document while collaborative editing

5 A feature used to add text at the top of each page in a document

6 A feature used to make a portion of text thicker than the rest

Features of Word Processing Tool



Task3: Hands on Practice - Design and Create

Topic	Word Processing Tool Using Open Office Wrtier
Period of task	Pre Content
Content Coverage	Basic and Advanced features related to Word Processor viz. changing font type, size, color & alignment, formatting paragraphs using line spacing & paragraph spacing, adding Headers and Footers, Auto Format and Spelling and Grammar utilities, Bullets and Numbering and Borders and Shading.
Learning Objectives	Recall the basic and advanced features of a word processing tool
Task	Hands On Practice - Design and Create
Execution of task	Each student would be given the activity sheet. They would be then asked to create a similar article on the computer system using the various features of a Word Processor learnt in the theory class
Duration	1 period
Criteria for assessment	Teacher may record the performance of students who are able to create the exact replica and write the result. It's a part of C.W. assessment.
Follow up	The teacher can give a topic and ask the students to independently create an advertisement or an article and assess their creative skills.

The Learning Times

A Teenager Initiated Newsletter ◆ November 2010 Issue 3 ◆ By Student Name

Computer Week Has Arrived!

The much awaited annual computer club event is coming soon! Show your support by participating in various events. Below are the events for each day.

Monday - Digital Imaging

Tuesday - Scratch the Logic

Wednesday - Techno Artists

Thursday - The Senate

Friday - Dress It Up

❀

Important Dates in November

November 5 - Diwali

November 17 - Id ul Zuha (Bakrid)

November 21 - Guru Nanak Jayanti

❀

Panthers vs. Jaguars

Reported by Kamal Kranti, Grade 11

This Saturday the Panthers football team meet their long time rivals the Jaguars. Desham will be the starting quarterback for the Panthers, and interestingly enough Desham's cousin, Bhanu will be the starting quarterback for the Jaguars. Everyone is eager to see these two cousins face off on the football field. Coaches of both teams are so excited and have been seen running through the halls wearing orange and black streamers around their head. The game kicks off at 10 am on Saturday and tickets to the game are selling fast. Athletic Director, Mr. Bajaj is asking for volunteers to work at the entertainment booth. Go Panthers!

Principal Praises Student for Good Deed

Reported by Shramika Bose, Grade 8

Principal Sharma is hosting a dinner on Saturday, November 2nd in honour of student Albela Tara. Albela was delivering his daily paper route last weekend when he heard cries from an abandoned house. Albela took action immediately and took a good look under the bushes of the house only to discover a stray cat in distress. According to Albela, the cat's front paw was stuck under a rock. Fearful that the cat would bite Albela due to being in pain, Albela quickly dialed 911 on his cell phone. Within minutes an animal rescue team was on the scene and the cat was rescued. Once the cat was rescued unharmed, Albela returned the cat to its owner, Mrs. Fatima, a customer on his paper route. Albela will receive a special honour by National Youth Leader in commendation for a job well done. Kudos to Albela!

❀

Class of 2010

Favourite Fast Food

1. Nachos
2. Pizza
3. French Fries
4. Cheese Burger
5. Mozzarella Sticks

❀

Photo of the week

A Helping Hand Can Change the World

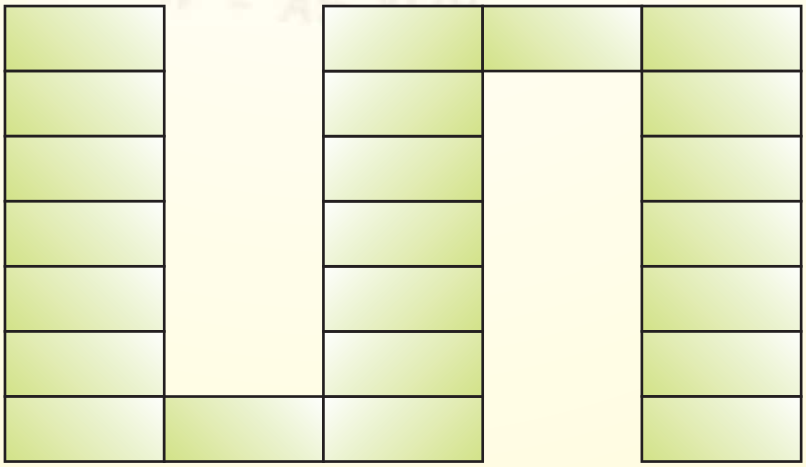
Task 4: Fun Time

Topic	Word Processing Tool Using Open Office Writer
Period of task	Pre Content
Content Coverage	Tables - inserting tables and formatting tables (using features like changing background colour, borders and shading), Inserting Pictures, Formatting features - changing font size, style and colour
Learning Objectives	To learn the usage of tables for presenting text in an organized manner and also for aligning images
Task	Fun Time
Execution of task	Each student would be given the activity sheet. They would be then asked to create a similar board game on the computer system using the various features of a Word Processor learnt in the theory class
Duration	1 period
Criteria for assessment	It is a fun activity aimed at enhancing the creativity of the student and his ability to think out of the box. The student should be marked based on the presentation skills and variations added to the given task like variety in colour scheme, font styles, borders and shading of table cells etc.

Activity Instruction sheet

Follow the instructions given below and perform hands on to create a board game :

1. Insert a table with 7 rows and 5 columns. Using the borders and shading feature create a basic template (like a snake) for the card game as shown below.



2. Using the features of FontWork (Word Art), background colour and inserting images format the above table as shown in the final image.

3. Cut out the created shape and paste it on a hard board.

4. Players roll the die and move the number of dots on the die. First player to reach the end of the game wins. Continue playing to find out who comes in second, third, and fourth place. To make the game a little more interesting, at each turn, players can ask questions related to Word Processor. The player should be allowed to move only if he gives a correct answer.

TIN WIN

Suggested questions for Oral Assessment

1. Define the term Word Processor.
2. Differentiate between header and footer.
3. Explain the usage of the following:
   a. Track Changes
   b. Auto Format
   c. Superscript and Subscript

Suggested Fill in the blanks Exercise

i. The alignment options available are left, right, _____ and _____.

ii. The _____ feature is used to set the page margins and paper size options.

iii. The _____ feature is used to see how the document will look after being printed.

Please Note: Formative Assessment tasks are meant for learning. It is not always necessary to assess all of them. The teacher has the liberty to choose any of the tasks or create her own tasks for evaluating the students.

Information Processing Tools

Presentation Tools

Learning Objectives

- To appreciate the need and usage of a presentation tool in our daily life.
- To learn how to create, save and print a presentation.
- To recall definition and basic terms related to presentation tool viz. slides, placeholder, slide layout, animation, transition and rehearse timings.
- To state the importance of different views of a slide: Normal view, Slide Sorter view and Slide Show.
- To explore the usage of basic features viz. changing font type, size, color & alignment, formatting slides, adding titles and subtitles using placeholders, adding Headers and Footers, inserting pictures and sound.
- To create well formatted presentations using advanced features like Inserting Symbol, Clipart and Pictures, Page Setting, Bullets and Numbering, Borders and Shading, Transitions, Animations and Rehearse Timings.

Suggested Formative Assessment Tasks:

Task1: Pass It On Cards

Topic	**Presentation using Open Office Impress**
Period of task	Pre Content
Content Coverage	Introduction to Presentation Graphics, Understanding the concept of Slide Shows, Basic elements of a slide
Learning Objectives	Learn the importance of good presentation skills and learn what information to include in the presentation.
Task	Pass It On Cards
Execution of task	Print the cards and cut out individual cards to make a pack. Shuffle and distribute the cards amongst the students. Ask the student with question number 1 to start. This particular student will ask the question from the class. The student who thinks he has the correct answer card reads out the answer. If they are correct, they can ask the question on their card to the rest of the class. This continues until all the questions and answers have been used.

Duration	1 period
Criteria for assessment	This is just a fun activity. It will create awareness in the students about the features of a good presentation.
Follow up	Teacher may use the given flash cards for review and recall.

Pass It On Cards (To be printed and cut)

Answer Pictures and sounds	**1. Question** A sensible font size to use for text on your presentations is……
Answer Don't use too much, as it can be distracting.	**2. Question** When creating a presentation, your slide background should always be…
Answer 22 pts or above	**3. Question** You can draw attention to important words or phrases in your presentation by….
Answer Proof read	**4. Question** When you are presenting a list of items it is better to use….
Answer Bullet points	**5. Question** When choosing your font colour you should make sure that…
Answer Making them bold or italic	**6. Question** When using animations in your presentation….

Answer Consistent	**7. Question** Which should you avoid ? A large paragraph of text or 4-5 bullet points per slide.
Answer A large paragraph of text as its difficult to read	**8. Question** When you have a set of data, for eg lots of exam results, a good way of formatting them is to use….
Answer There is a good contrast between background and foreground colour	**9. Question** You can make your presentation more interesting by adding…
Answer Tables	**10. Question** What should you always do before you present or print your work?

Solution

The table below contains the questions and matching answers.

Card No.	Question	Answer
1.	A sensible font size to use for text on your presentations is……	22 pts or above
2.	When creating a presentation, your slide background should always be…	Consistent
3.	You can draw attention to important words or phrases in your presentation by….	Making them bold or italic
4.	When you are presenting a list of items it is better to use….	Bullet points
5.	When choosing your font colour you should make sure that…	There is a good contrast between background and foreground colour
6.	When using animations in your presentation….	Don't use too much, as it can be distracting.

7.	Which should you avoid? A large paragraph of text or 4-5 bullet points per slide.	A large paragraph of text as its difficult to read
8.	When you have a set of data, for example lots of exam results, a good way of formatting them are to use….	Tables
9.	You can make your presentation more interesting by adding…	Pictures and sounds
10.	What should you always do before you present or print your work?	Proof read

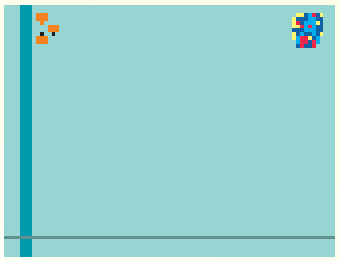
Task2: Hands On Practice

Topic	**Presentation using Open Office Impress**
Period of task	Post Content
Content Coverage	Different types of Slide Layouts, Creating and saving a Presentation, Editing and Formatting a slide: Adding Titles, Subtitles, Text, Background, Watermark; Headers and Footers, Numbering Slides; Inserting pictures from files, Animating pictures and Text with Sound Effects
Learning Objectives	Recall the basic and advanced features of Presentation using Open Office
Task	Hands On Practice
Execution of task	Each student should be given the activity sheet. They would be then asked to create a presentation in Open Office using the features learnt in the theory class.
Duration	1 period
Criteria for assessment	Teacher may record the performance of students who are able to create the presentation and write the result. It's a part of C.W. assessment.

Task2: Hands On Practice

Your manager has asked you to set up a presentation for an educational organisation, for students who study business and academic subjects, called The College.

1. Set up a new presentation consisting of 3 slides. The slide master must have a light green background with a darker green bar on the left hand side with the design shown in the figure below. It must also contain clipart as a logo placed in the top right corner as the one shown in the sample below. The logo must be resized so that it does not overlay any slide text.



2. Add your name and today's date in the footer in small black text placed in the bottom left corner.
3. Set the following styles of text throughout the entire presentation:

   Heading : Dark blue, right aligned, large font (between 50 and 68 point)

   Subheading : Bright blue, centered, medium font (between 36 and 48 point)

   Bulleted list : Dark green, left aligned, small font (between 16 and 34 point)

   Use a bullet of your choice.

On the first slide :

4. Enter the heading " The College"
5. Enter the subheading "Student Enrolments" below the heading.

On the second slide :

6. Enter the heading "Department Enrolments" 2010 in the same style as the first slide.
7. Create the following table :

Product	Number
Business/IT	350
Catering	275
Art & Design	196
Science	371
Technology	215

8. The first row of the table should be shaded with light blue color.

   On the third slide :

9. Enter the heading "Student Activities" in the same style as the first slide.

10. Enter the following list on the left side of the slide:
    - Keep fit
    - Basketball
    - Football
    - Gymnasium
    - Reading club
11. Place a further clipart image showing sports e.g. football, on this page to the right of the bullets.

For the whole presentation :

12. Use the same transitional effect between each slide.
13. Use only one animation effect on the title of each slide.
14. Save the presentation using a new filename. Print the presentation showing three slides on a page.

Task3: Create and Present

Topic	**Presentation using Open Office Impress**
Period of task	Post Content
Content Coverage	Different types of Slide Layouts, Creating and saving a Presentation, Editing and Formatting a slide: Adding Titles, Subtitles, Text, Background, Watermark; Headers and Footers, Numbering Slides; Inserting pictures from files, Animating pictures and Text with Sound Effects
Learning Objectives	Recall the basic and advanced features of Presentation using Open Office
Task	Create and Present
Execution of task	The teacher may divide the class into groups for this task. Each student / group should be given the activity sheet. They would be then asked to create a presentation in Open Office using the features learnt in the theory class. The presentations created by different groups may be shown to the entire class to encourage sharing of ideas.
Duration	1 period
Criteria for assessment	Teacher may record the performance of students /groups who are able to create the presentation in the suggested format and write the result. It's a part of C.W. assessment.

Task3: Create and Present

1. Create a presentation to display three outstanding features of your country.
2. The presentation should have at least 6 slides with following features:
   - ❀ Use a Presentation Design background (or create your own background)
   - ❀ There must be a transition effect between each slide
   - ❀ Some light background music must accompany all the slides
   - ❀ The slides should progress automatically after a specified time limit.
3. Detailed steps of project work :

Slide 1	Title slide may include name of your country, a slogan and picture(s). Use the "Title Slide" or "Title & Subtitle" slide Auto Layout for the first slide.
Slide 2	List the three outstanding features of your country using a bulleted list.
Slides 3, 4 & 5	On each of the next three slides, give three facts about each outstanding feature you want to promote in your country. Also in these slides add each of the following at least once: ❀ Clip art or a picture related to the topic ❀ A Video related to the topic ❀ Insert a table on at least one slide. Give the table a visible border and format it appropriately.
Slide 6	Concluding statement

4. Include a sound (e.g., hands clapping) during one of the transitions.

Suggested questions for oral assessment

1. Which of the following should you use if you want all the slides in the presentation to have the same "look"?
   - a. the slide layout option
   - b. add a slide option
   - c. outline view
   - d. a presentation design template

2. Special effects used to introduce slides in a presentation are called
   a. effects
   b. custom animations
   c. slide transitions
   d. present animations
3. How can you create a uniform appearance (including your company logo) to all slides?
   a. Create a template
   b. Edit the slide master
   c. Use the autocorrect wizard
   d. All of the above
4. The slide that is used to introduce a topic and set the tone for the presentation is called the
   a. table slide
   b. graph slide
   c. bullet slide
   d. title slide
5. Which of the following should be used when you want to add a slide to an existing presentation?
   a. File, add a new slide
   b. Insert, New slide
   c. File Open
   d. File, New
6. Which of the following can you use to add timings to the slides in a presentation?
   a. Slide show menu
   b. Rehearse timings button
   c. Slide transition button
   d. All of the above
7. The view that displays the slides on a presentation as miniature representations of the slides is called
   a. slide show
   b. slide sorter view
   c. notes page view
   d. outline view

8. The presentation view that displays only text is
   a. Slide show
   b. Slide sorter view
   c. Notes page view
   d. Outline view
9. Which of the following provides a printed copy of your presentation?
   a. Outlines
   b. Speaker notes
   c. Audience handouts
   d. All of above
10. Which of the following will not advance the slides in a slide show view?
   a. ESC key
   b. Spacebar
   c. Enter key
   d. Clicking mouse button

Suggested Fill in the blanks exercise

i. The view that allows you to move the order of your slides around is _____

ii. The movement from one slide to the next is called the _____

iii. A set of inbuilt professional looking backgrounds supplied with the presentation package is called _____

iv. Using _____ you can make text appear on a slide letter by letter.

v. This is the correct view to show your presentation to an audience _____

vi. Moving images or text is called _____

Please Note : Formative Assessment Tasks are meant for learning. It is not always necessary to assess all of them. The teacher has the liberty to choose any of the tasks or create her own tasks for evaluating the students.

Information Processing Tools

Spreadsheet Using Open Office

Learning Objectives

- To appreciate the need and usage of a spreadsheet tool in our daily life.
- To learn how to create, save and print a worksheet/workbook.
- To recall definition and basic terms related to spreadsheet tool viz. cell, row, column, worksheet, workbook, editing, formatting, header, footer and Print Preview.
- To explore the usage of basic features viz. entering numbers, text, date/time, series using AutoFill, Editing and formatting worksheets including changing colour, size, font, alignment of text, Inserting or Deleting cells, rows and columns.
- To create well formatted documents using advanced features like Inserting Charts, using statistical functions: SUM(), AVERAGE(), MAX(), MIN(), IF()(without compound statements); Entering a formula in a cell, using operators(+,-,*,/) in formulae, Relative referencing, Absolute referencing and mixed referencing, creating series using AutoFill and Printing a worksheet.
- To name and state the usage of the different types of Charts.

Suggested Formative Assessment Tasks:

Task1: Features Speak

Topic	**Spreadsheet using Open Office Calc**
Period of task	Content / Post Content
Content Coverage	Introduction to Spreadsheets, Concept of Worksheets and Workbooks, Creating and Saving a worksheet, Working with a spreadsheet: entering numbers, text, date/time, series using AutoFill, Editing and formatting a worksheet including changing colour, size, font, alignment of text, Inserting or Deleting cells, rows and columns, Formulae-Entering a formula in a cell, using operators(+,-,*,/) in formulae, Use simple Statistical functions: SUM(), AVERAGE(), MAX(), MIN()
Learning Objectives	Introduce the basic and advanced features of Spreadsheets using Open Office
Task	Features Speak

Execution of task	The students will be given activity sheet with a spreadsheet and they have to indentify the various feature and formulas used in it.
Duration	1 period
Criteria for assessment	This is just a fun activity. It will create awareness in the students about the features of a spreadsheet.

Task1: Features Speak

Look at the following spreadsheet and answer the questions about various features/formulas of the spreadsheet given below :

	A	B	C	D	E	F	G
1	Item Details		Price Details				
2	Item Type	No. Sold	No. in Stock	Original Price	Discount	Sale Price	Income
3	Shirt	8	4	450.00	5%	427.50	3420.00
4	Trouser	6	3	750.00	5%	712.00	4275.00
5	Shoes	3	7	680.00	10%	612.00	1836.00
6	Skirt	6	5	460.00	15%	391.00	2346.00
7	Shorts	5	4	350.00	10%	315.00	1575.00
8	Pullover	9	5	900.00	10%	810.00	7290.00
9	Cardigan	5	3	1200.00	5%	1140.00	5700.00
10	Blazer	4	1	2300.00	20%	1840.00	7360.00
11	Average Discount				10%		
12	Total Income						33802.00

1. **To position the titles 'Item Details' and 'Price Details', the user has**
   a. split cells A1:F1
   b. merged cells A1:F1
   c. split cells A1:B1 and C1:F1
   d. merged cells A1:B1 and C1:F1
2. **To position the titles 'No. in Stock' and 'Original Prices', the user has used**
   a. Left alignment
   b. Merge cells

c. Wrap text

d. Right alignment

3. **Sale Price is Original Price less any discount. The discount is Original Price multiplied by Discount. The formula in cell G3 therefore is**

a. =D3-(D3*E3)

b. =(D3-D3)*E3

c. =(D3-D3)/E3

d. =D3-(D3/E3)

4. **The Formula in cell E11 is**

a. =SUM(E3:E10)

b. =SUM(E3:E10)/9

c. =AVERAGE(E3:E10)

d. =AVERAGE(G3:G10)

5. **The formula to find the maximum Discount is**

a. =MAX(E3:E10)

b. =SUM(E3:E10)

c. =MIN(E3:E10)

d. =SUM(E3+E4+E5+E6+E7+E8+E9+E10)

6. **Sale Price is Original Price less any discount. Income is Sale Price multiplied by No. Sold. If the value in cell E4 is changed, the other values that will change automatically are in cells**

a. D4, F4, G4

b. D4, F4, G4, E11

c. E11, F4, G4, G12

d. D4, F4, G4, E11, G12

7. **The formula to determine the lowest income is**

a. =MIN(G3:G10)

b. =MAX(G3:G10)

c. =SUM(G3:G10)

d. =MIN(F3:F10)

8. **The formula =B3*F3 is entered in cell G3 and is replicated to cell range G4:G10. The formula in cell G7 is**

a. =B3*F3

b. =B7*F7

c. =G4*G10

d. =SUM(B7:F7)

9. The cell range to produce a bar chart showing the No. in Stock of each Item Type is

a. A3:C10

b. A3:G10

c. A3:A10 and B3:B10

d. A3:A10 and C3:C10

10. The data in cell range E3:E11 is formatted as

a. number to 2 decimal places

b. number to 0 decimal places

c. percentage to 0 decimal places

d. percentage to 2 decimal places

11. The data in cell range A3:A10 is

a. Text/label

b. date

c. number

d. currency

12. The data in cell G12 is vertically aligned at

a. bottom

b. centre

c. right

d. top

Task2: Observe and Answer

Topic	**Spreadsheet using Open Office Calc**
Period of task	Post Content
Content Coverage	Introduction to Spreadsheets, Concept of Worksheets and Workbooks, Creating and Saving a worksheet, Working with a spreadsheet: entering numbers, text, date/time, series using AutoFill, Formulae-Entering a formula in a cell, using operators(+,-,*,/) in formulae, Use simple Statistical functions: SUM(), AVERAGE(), MAX(), MIN()
Learning Objectives	Recall the basic and advanced features of Spreadsheets using Open Office

Task	Observe and Answer
Execution of task	Each student would be given the activity sheet. They would be then asked to study the spreadsheet given and answer the questions based on the spreadsheet.
Learning Objectives	Recall the basic and advanced features of Spreadsheets using Open Office
Duration	1 period
Criteria for assessment	The student may be evaluated on the basis of number of correct answers provided.
Follow up	The teacher may use the same spreadsheet for hands on practice.

Task2: Observe and Answer

Study the following worksheet from a spreadsheet file, and answer the questions given below:

	A	B	C	D	E	F	G
1		Big Apple	Food Bazaar	D Mart	Fresh		
2	Loaf of Bread	12.00	11.50	11.75	11.50		
3	Nescafe 100g	56.00	58.00	62.00	59.00		
4	Milk - 1 ltr	20.00	19.00	21.00	20.50		
5	Heinz Ketchup	89.00	87.00	86.50	88.00		
6	Fairy Washing Liquid	125.00	127.00	124.00	123.00		
7	Kitchen Rolls	35.00	46.00	37.00	34.50		
8	Pedigree	230.00	234.00	242.00	235.00		
9	Iceburg Lettuce	78.00	67.00	77.00	78.75		
10							
11							
12							

Sheet1 / Sheet2 / Sheet3 /

Ready NUM

a) Identify a cell that contains a label.

_____

b) Write down three features which may be used to improve the visual appeal of the worksheet.

(i) _____

(ii) _____

(iii) _____

c) Write down a formula that could be in cell F2, to calculate the average price of a loaf of bread.

_____

d) Write down a formula that could be in cell B10, to add up the total cost of the food from each supermarket.

_____

e) Describe what will be the formula in C10, D10 and E10 if the formula in B10 is copied into these cells

_____

_____

_____

f) Write down a formula that could be in cell G2, to find the lowest price of a loaf of bread from the supermarkets.

_____

g) Write down a formula that could be in cell H3 to find the highest price of all the different food items from the stores.

_____

h) Name the type of chart which will be most suitable to show the comparative prices in the different supermarkets of a single item and also of all the items.

(i) For single item _____

(ii) For all the items _____

Task3: Create a Format

Topic	**Spreadsheet using Open Office Calc**
Period of task	Post Content
Content Coverage	Introduction to Spreadsheets, Concept of Worksheets and Workbooks, Creating and Saving a worksheet, Working with a spreadsheet: entering numbers, text, date/time, series using AutoFill, Editing and formatting a worksheet including changing colour, size, font, alignment of text, Inserting or Deleting cells, rows and columns , Formulae-Entering a formula in a cell, using operators(+,-,*,/) in formulae, Relative referencing, Absolute referencing and mixed referencing, Use simple Statistical

	functions: SUM(), AVERAGE(), MAX(), MIN(), IF()(without compound statements); Inserting tables in worksheet, Embedding Charts of various types: Line, Pie, Scatter, Bar and Area in a worksheet.
Learning Objectives	Recall the basic and advanced features of Spreadsheets using Open Office
Task	Create a Format (Hands On Practice)
Execution of task	Each student would be given the activity sheet. They would be then asked to create a spreadsheet in Open Office using the features learnt in the theory class.
Duration	1 period
Criteria for assessment	Teacher may record the performance of students who are able to create the spreadsheet and apply the correct formatting and formulas and write the result. It's a part of C.W. assessment.

Task3: Create a Format

You are the IT manager of a company and you have to work out how much it will cost to buy different software. Enter the details from the following table into a blank spreadsheet. Make sure that your spreadsheet is formatted exactly as shown below.

	A	B	C	D	E	F	G
1							
2			Software Budget				
3							
4	Title	Copies	Price	Total	Discount	Discounted Price	
5	Office 2000	20	4890		25%		
6	Windows	20	9900		14%		
7	Scan	20	7900		12%		
8	Flash	2	2500		10%		
9	Corel Draw	1	14900		15%		
10		Grand Total					
11	Maximum Cost						
12	Minimum Cost						
13							
14							

1. Make the heading 'Software Budget' bold and font size 16 and shade the background a light gray.
2. Column headings should be bold and size 12
3. Grand Total should be merged, bold and size 12

4. Format the numbers to currency and 0 decimal places and size to 12
5. Format Discount as percentage
6. Using a suitable formula put the total price into cell D5 , copy that formula to cells D6 to D9
7. Using a suitable formula calculate the Discounted Price in F5 and copy that formula to cells F6 to F9
8. Calculate the Grand Total in D10
9. Now calculate the Maximum Cost and Minimum Cost in B11 and B12 respectively
10. Insert a header with your name and class
11. Create a bar chart that compares the Total Price with the Discounted Price for each Title. Make sure your chart has an appropriate title, axis titles, etc.
12. Create a pie chart that shows the percentage of Total price of all the software titles. Pull out the piece of the pie with the highest price to make it stand out from the rest.
13. Save and print the worksheet.
14. Then, print out a copy of the sheet showing just the formulas.

Task4: Hands on Practice

Topic	**Spreadsheet using Open Office Calc**
Period of task	Post Content
Content Coverage	Introduction to Spreadsheets, Concept of Worksheets and Workbooks, Creating and Saving a worksheet, Working with a spreadsheet: entering numbers, text, date/time, series using AutoFill, Editing and formatting a worksheet including changing colour, size, font, alignment of text, Inserting or Deleting cells, rows and columns , Formulae-Entering a formula in a cell, using operators(+,-,*,/) in formulae, Relative referencing, Absolute referencing and mixed referencing, Use simple Statistical functions: SUM(), AVERAGE(), MAX(), MIN(), IF()(without compound statements); Inserting tables in worksheet, Embedding Charts of various types: Line, Pie, Scatter, Bar and Area in a worksheet.
Learning Objectives	Recall the basic and advanced features of Spreadsheets using Open Office
Task	Hands On Practice

Execution of task	Each student would be given the activity sheet. They would be then asked to create a spreadsheet in Open Office using the features learnt in the theory class.
Duration	1 period
Criteria for assessment	Teacher may record the performance of students who are able to create the spreadsheet and apply the correct formatting and formulas and write the result. It's a part of C.W. assessment.

Task4: Hands on Practice

1. Open a blank spreadsheet and enter the following data.

	A	B	C	D	E	F	G
1	Name	English	Maths	Science	Average	Result	
2	Aarti	45	27	57			
3	Aman	67	56	58			
4	Bella	54	65	76			
5	Celine	23	34	43			
6	Divij	56	65	57			
7	Feryl	66	78	86			
8	Gopu	87	91	86			
9	Parth	86	75	78			
10	Swetha	91	96	86			
11	Tarun	56	54	65			
12							
13							

2. Enter a function in E2 that will calculate the average score for the first student.
3. Copy the function down the column for the other students.
4. In F2 you are going to type in the IF function to decide whether a student has passed or failed. The pass mark is set at being an average of 40%. Enter the function to display the word "Pass" or "Fail" depending whether the average score is >=40% or not.
5. Row 13 is going to be used to display the highest scores in a subject, row 14 the lowest and row 15 the average. In A13 type in: 'Highest', in A14 type in: 'Lowest' and in A15 type in: 'Average'. Type suitable functions into the cells: B13, B14 and B15 to find the highest, lowest and the average for each subject.
6. Insert a new row above the column headings.
7. In A1 enter the text 'Student Marklist' and merge the cells A1:F1. Set size as 16.
8. Now we will do some special formatting. Give a colour to the background of the cells used

as the headings in row 1 and row 2 and the names and headings in column A. Change the size and style of the fonts for these cells (row 1 & 2 and column A).

9. Change the style and size of the fonts of the scores the students obtained in the tests.

10. Center-align the entries in the Result column.

11. Change the style, size & colour of the cells which contain anything displayed as a result of a function (being carried out). Your final spreadsheet should look something like this:

	A	B	C	D	E	F	G
1	Student Marklist						
2	Name	English	Maths	Science	Average	Result	
3	Aarti	45	27	57	43.0	PASS	
4	Aman	67	56	58	60.3	PASS	
5	Bella	54	65	76	65.0	PASS	
6	Celine	23	34	43	33.3	FAIL	
7	Divij	56	65	57	59.3	PASS	
8	Feryl	66	78	86	76.7	PASS	
9	Gopu	87	91	86	88.0	PASS	
10	Parth	86	75	78	79.7	PASS	
11	Swetha	91	96	86	91.0	PASS	
12	Tarun	56	54	65	58.3	PASS	
13							
14	Highest	91.0	96.0	86.0			
15	Lowest	23.0	27.0	43.0			
16	Average	63.1	64.1	69.2			
17							
18							

12. Insert a header with your name and class

13. Print a copy of the sheet.

14. Then, print out a copy of the sheet showing just the formulas.

15. Using the charting tools, create a bar chart to compare the average results for each student and put it on a separate sheet.

16. Print your chart, with your name and class in the page footer.

CBSE
KNOW - AS YOU GROW

Societal Impacts of IT

Learning Objectives

- To appreciate the need and usage for security and integrity of information.
- To recall definitions of basic terms related to plagiarism, privacy, security and integrity of information.
- To learn about the various careers in IT
- To state the usage of Intellectual Property Rights and also enumerate the benefits of the same.

Suggested Formative Assessment Tasks:

Task1: Word Search

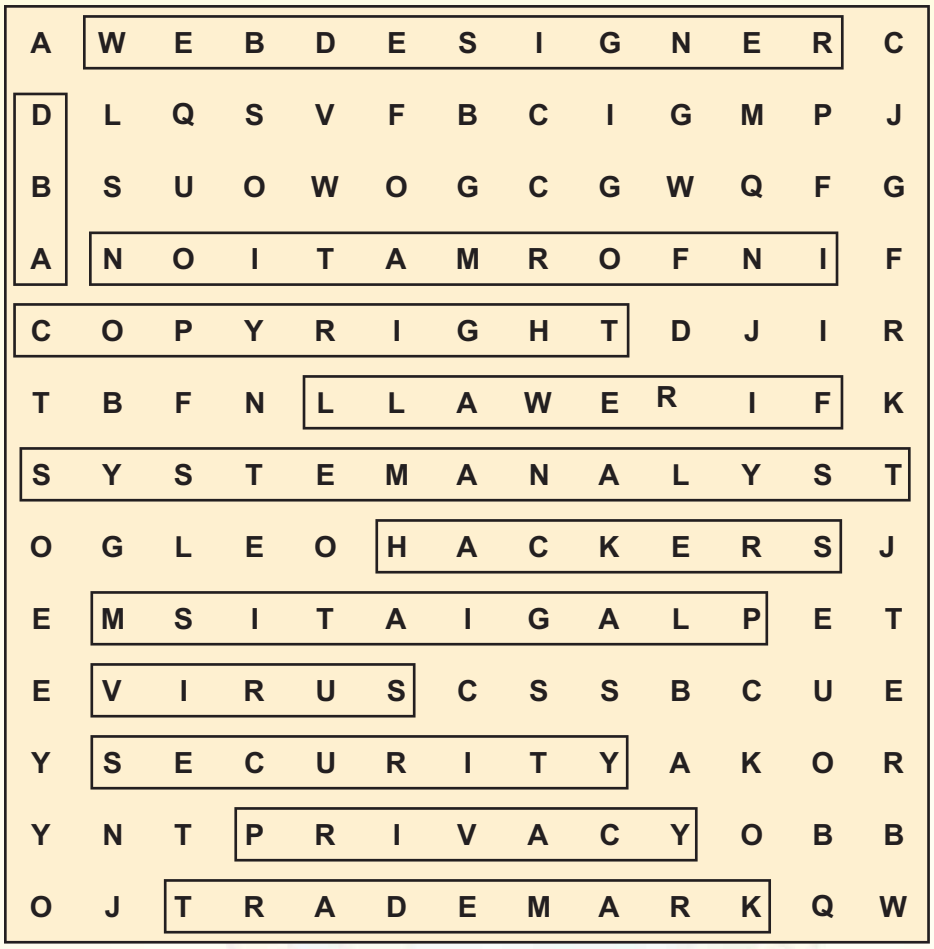
Topic	**Societal Impacts of IT**
Period of task	Post Content
Content Coverage	Plagiarism, Privacy, Security and Integrity of Information; Intellectual Property Rights, Careers in IT
Learning Objectives	Name and identify different commonly used terminology associated with impacts of IT on the society.
Task	Word Search
Execution of task	Each student would be given an activity sheet with a grid of letters. They would then be asked to search for commonly used IT related terminology in the grid.
Duration	1 period
Criteria for assessment	This is just a fun activity aimed at finding out the terms related with societal impact of IT.
Follow up	The teacher will point out the words that the students were not able to find in the grid and also discuss briefly about each of the terms that were found by the students.

Activity Sheet- Word Search

A	W	E	B	D	E	S	I	G	N	E	R	C
D	L	Q	S	V	F	B	C	I	G	M	P	J
B	S	U	O	W	O	G	C	G	W	Q	F	G
A	N	O	I	T	A	M	R	O	F	N	I	F
C	O	P	Y	R	I	G	H	T	D	J	I	R
T	B	F	N	L	L	A	W	E	R	I	F	K
S	Y	S	T	E	M	A	N	A	L	Y	S	T
O	G	L	E	O	H	A	C	K	E	R	S	J
E	M	S	I	T	A	I	G	A	L	P	E	T
E	V	I	R	U	S	C	S	S	B	C	U	E
Y	S	E	C	U	R	I	T	Y	A	K	O	R
Y	N	T	P	R	I	V	A	C	Y	O	B	B
O	J	T	R	A	D	E	M	A	R	K	Q	W

Answers

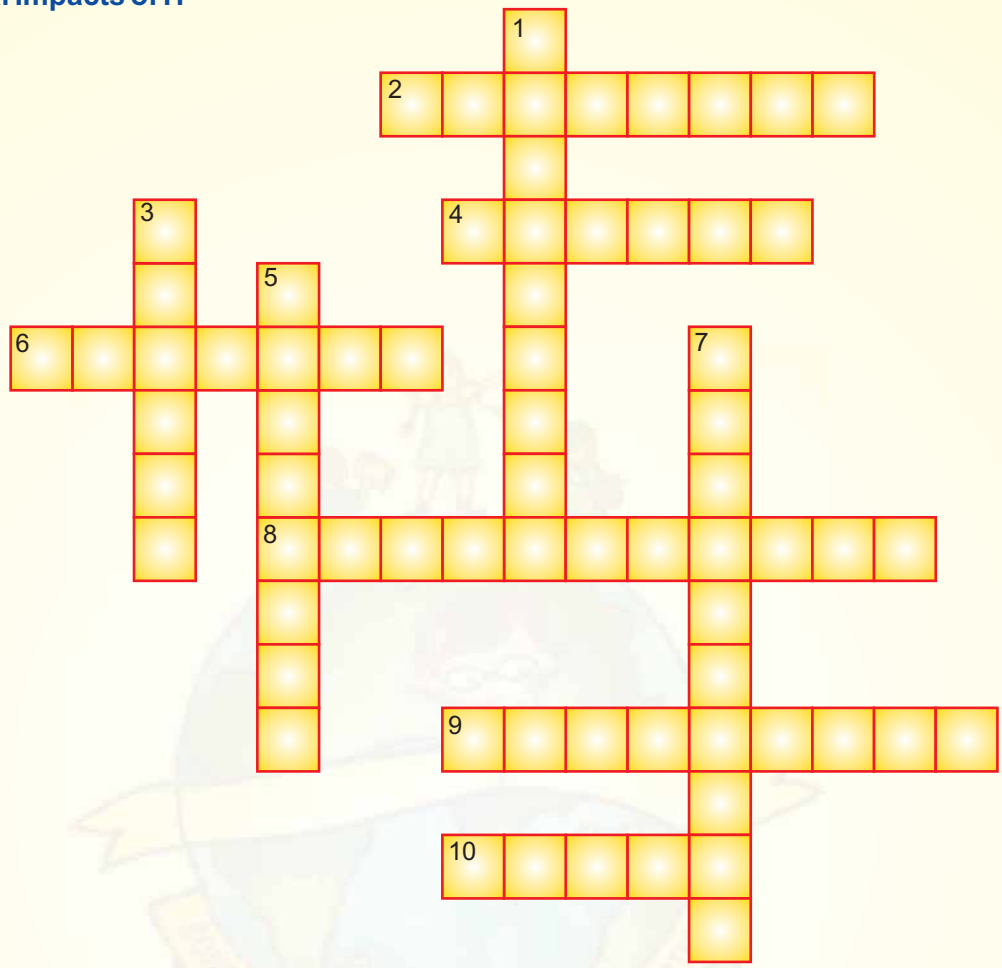
Copyright	Privacy
DBA	Security
Firewall	System Analyst
Hackers	Trademark
Information	Virus
Plagiarism	Web Designer



Task2: Crossword

Topic	**Societal Impacts of IT**
Period of task	Post Content
Content Coverage	Plagiarism, Privacy, Security and Integrity of Information; Intellectual Property Rights, Careers in IT.
Learning Objectives	Recall the societal impacts of IT.
Task	Crossword
Execution of task	Each student would be given the activity sheet. They would be then asked to identify the appropriate term after reading out the given clues. Teacher may draw a similar cross word on the chalk board also and speak out the clues one by one.
Duration	1 Period
Criteria for assessment	This activity is aimed at making the students review and recall the societal impacts of IT. The students should be marked on the basis of the number of terms identified correctly.

Societal Impacts of IT



Across

2 This can be used to keep your data safe

4 Making illegal copies of software

6 Unauthorized access to data files

8 They design web sites

9 It is the set of exclusive rights granted to the author or creator of an original work

10 Program that can damage your files

Down

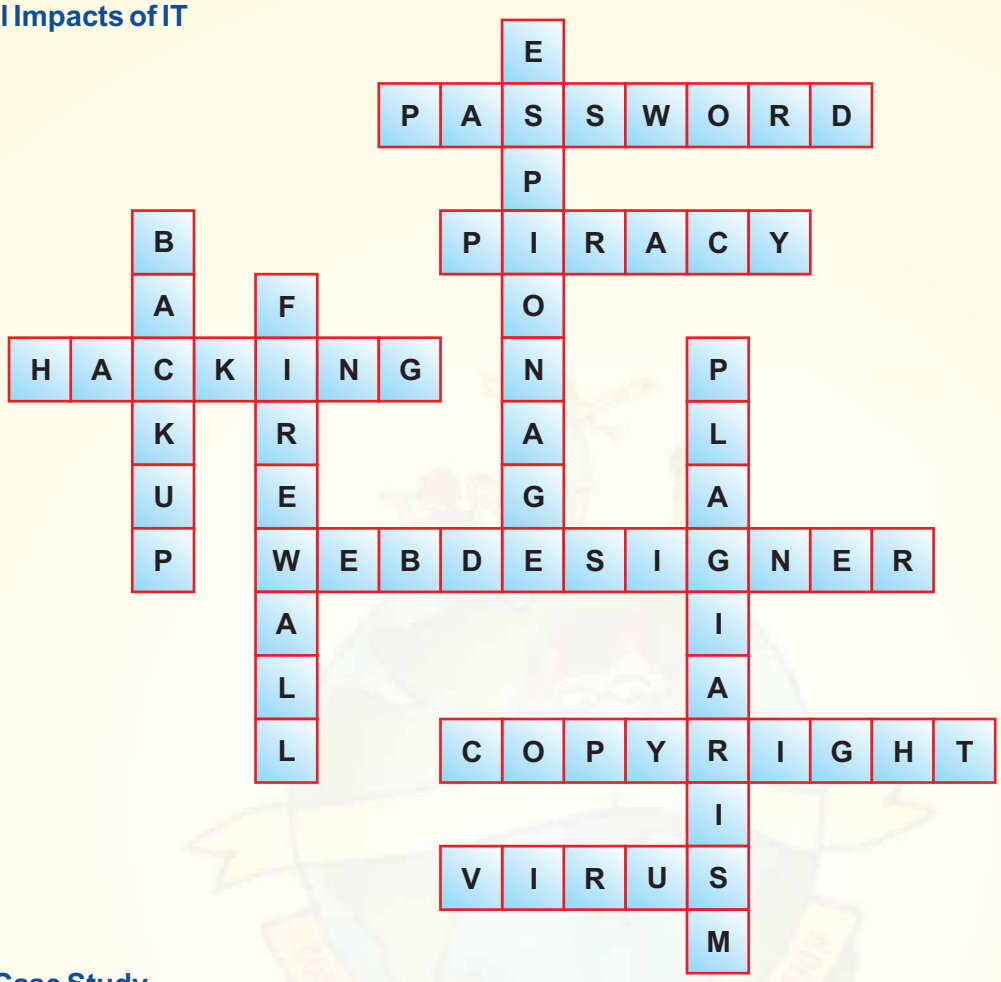
1 If an employee steals data to sell it to another Company

3 This should be done regularly to safeguard data against loss

5 This will stop hackers from accessing your system

7 Copying someone else's work and passing it off as one's own

Societal Impacts of IT



Task3: Case Study

Topic	Societal Impacts of IT
Period of task	Post Content
Content Coverage	Security and Integrity of Information
Learning Objectives	Observe, analyze and present solution related to different data security concepts
Task	Case Study
Execution of task	The teacher may divide the class into groups for this assessment. Each student or group will be given the activity sheet that contains a scenario. Students will study the scenario and answer questions related to it.
Duration	1 Period
Criteria for assessment	Teacher may record the performance of students / groups who are able to answer the questions and write the result. It's a part of C.W. assessment.
Follow Up	The teacher may create similar case studies based on the issues of plagiarism and privacy.

Task3: Case Study

A major theft attempt took place at the administrative offices of Studywell High School yesterday. It is believed that the thieves tried to break into the computer room.

Luckily the alert watchman raised an alarm and tried to nab the thieves. The bad news is that the thieves tried to set the computer room on fire in the bid to escape. The fire destroyed the office computer and some of the data stored on it. The school had student and staff details, fees and payroll accounts and examination and marks details on the hard drive.

The good news is that the school can continue functioning almost as normal because the damage was restricted to the office.

1. List the measures that the school could take to protect its system from physical threats such as theft of equipment.
2. The school has lost some of its important data. How do you think the school will be able to deal with this situation?
3. What other ways could the thieves have used to access the school's data other than breaking into the computer room?
4. What measures can the school take to prevent the unauthorized access of data by the methods discussed in the previous question?
5. Explain what the role of a firewall and anti-virus is.
6. What does 'encryption' mean? Explain why it might be useful to protect valuable documents.
7. The school staff has access to the school computer using a user id and password. What rules should the staff follow when choosing their password?

Answer Key :

1. Lock, burglar alarm, security guard, CCTV video cameras etc.
2. The school can recover the data using the backup taken earlier.
3. Hacking the school computer, through internet connection of the school, using somebody's user id and password, intercepting the data sent through the school network etc.
4. The school can use :
   a. Firewall
   b. Anti-virus
   c. Strong passwords and audit logs
   d. Data Encryption etc.
5. A firewall is a program that filters the information coming through the Internet connection into a computer or into a network. Anti-virus is special software which is used to detect viruses and to limit their damage by removing them.

6. Encryption is a method of scrambling data in such a way that only the people who have the key to unlock the message can read it.
7. Some of the common rules to be followed by the staff when choosing their password are:
   a. Passwords should be kept secret at all times
   b. Password should not be something that is easy to guess such as your name or date of birth
   c. It should include text and numbers or symbols
   d. It should be changed regularly

Suggested questions for oral assessment

1. Explain the term plagiarism. What are the different kinds of plagiarism that are commonly seen?
2. What do you understand by the term copyright?
3. Give three ways in which you can protect the data stored on a computer system.
4. Explain the term computer virus. Describe two ways in which virus can get into your computer system.
5. What are Intellectual Property Rights?
6. List any five career options in the IT industry.

Please Note : Formative Assessment Tasks are meant for learning. It is not always necessary to assess all of them. The teacher has the liberty to choose any of the tasks or create her own tasks for evaluating the students.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CONTINUOUS AND COMPREHENSIVE EVALUATION
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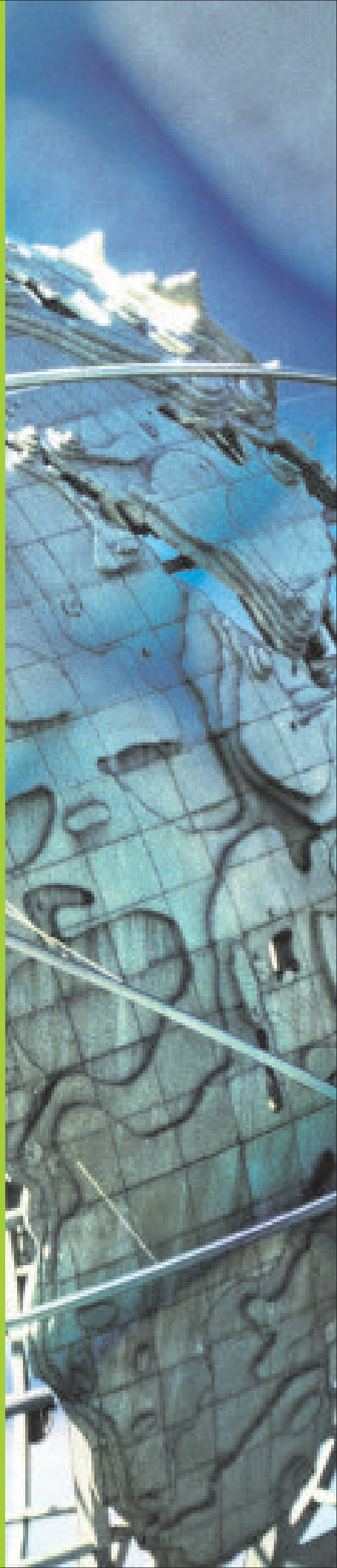

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CENTRAL BOARD OF SECONDARY EDUCATION

Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi - 110092, India
Tel.: 91-11-22509252-59 Fax : 91-11-22515826
E-mail : cbsedli@nda.vsnl.net.in website : www.cbse.nic.in