



Central Board of Secondary Education

**(An autonomous Organisation under the Union Ministry of Human Resource Development, Govt. of India)
'Shiksha Sadan', 17-Rouse Avenue, New Delhi – 110 002**

CBSE/EO(SD)/CIRCULAR/2009

30.11.2009

Circular No. 62

All Heads of Institutions
Affiliated to the Board

Dear Principal,

In continuation to Circular No. 42 issued by CBSE regarding CCE in Class IX for IInd Term (Oct 2009 to March 2010) dated 12.10.2009, the design of the question paper in Science for the Summative Assessment IInd Term for Class IX which is going to be held in March 2010 has been modified as follows :

The modified design is as follows :

Modified Design of the Question Paper

Sl. No.	Type questions of	No. of questions	Marks allotted to each question	Total marks
1.	Very Short Answer Type(VSA)	05	01	05
2.	Short answer Type-I (SA I)	09	02	18
3.	Short answer Type-II (SA II)	09	03	27
4.	Long answer type (LA)	03	05	15
5.	MCQ(Practical Skills)	15	01	15
	TOTAL	41		80

The syllabus of Science and Mathematics and the design of the Mathematics question paper for Summative Assessment II of Class IX will remain same as per the Circular 42 dated 12.10.2009. The final syllabus and design of Science and Mathematics is placed at Annexure I and Annexure II respectively.

The details of the Formative Assessment to be followed in Science and Mathematics for Class IX in the IInd term is given in Annexure III (Science) and Annexure IV (Mathematics).

This may be brought to the notice of all the teachers and the students involved in the teaching and learning for Class IX.

Yours faithfully,

(DR. SRIJATA DAS)
EDUCATION OFFICER(SD)
CONTACT NO. 23237779 (O)

Copy to :

1. The Commissioner, Kendriya Vidyalaya Sangathan, 18-Institutional Area, Shaheed Jeet Singh Marg, New Delhi-110 016.
2. The Commissioner, Navodaya Vidyalaya Samiti, A-28, Kailash Colony, New Delhi.
3. The Director of Education, Directorate of Education, Govt. of NCT of Delhi, Old Secretariat, Delhi-110 054.
4. The Director of Public Instructions (Schools), Union Territory Secretariat, Sector 9, Chandigarh-160 017.
5. The Director of Education, Govt. of Sikkim, Gangtok, Sikkim – 737 101.
6. The Director of School Education, Govt. of Arunachal Pradesh, Itanagar-791 111
7. The Director of Education, Govt. of A&N Islands, Port Blair-744 101.
8. The Secretary, Central Tibetan School Administration, ESSESS Plaza, Community Centre, Sector 3, Rohini, Delhi-110 085.
9. All the Regional Officers of CBSE with the request to send this circular to all the Heads of the affiliated schools of the Board in their respective regions.
10. The Education Officers/AEOs of the Academic Branch, CBSE.
11. The Joint Secretary (IT) with the request to put this circular on the CBSE website.
12. The Library and Information Officer, CBSE
13. EO to Chairman, CBSE
14. PA to CE, CBSE
15. PA to Secretary, CBSE
16. PA to Director (Acad.)
17. PA to HOD (AIEEE)
18. PA to HOD (Edusat)
19. PRO, CBSE

EDUCATION OFFICER(SD)

**EVALUATION SCHEME – II TERM
OCT TO MARCH 2009
CLASS-IX SCIENCE**

There will be two **formative tests** and a year end **summative test**. The weightages and time schedule will be as under :

Type of test	Weightage	Time schedule
Formative Assessment 3	10 %	Oct – Dec., 2009
Formative Assessment 4	10 %	Jan – Feb 2010
Summative Assessment 2	40 %	March 2010
Total	60 %	

Formative Assessment 3 and 4 will include the following :

- i) Written Assessment based on Theory
- ii) Practical Assessment based on CBSE curriculum 2009-2011
- iii) Continuous Assessment in the following suggested areas :
 - a) Home Assignments/Class Assignments
 - b) Class Response/oral assessment/quiz
 - c) Seminar
 - d) Symposium
 - e) Group Discussion
 - f) Group Activity preferably in groups of 4-5 students. Suggested areas
 - Investigatory/Experimental Projects
 - Action Plan
 - Survey
 - Assessment on worksheets based on field trips

Summative test will be taken at the year end from the following chapters :

Sl. No. Name of the chapter

1. Is matter around us pure
2. Atoms and molecules
3. Structure of the atom
4. The fundamental unit of life
5. Tissues
6. Gravitation
7. Sound
8. Work and Energy
9. Why do we fall ill
10. Improvement in Food Resources

Modified Design of the Question Paper

Sl. No.	Type of questions	No. of questions	Marks allotted to each question	Total marks
1.	Very Short Answer Type(VSA)	05	01	05
2.	Short answer Type-I (SA I)	09	02	18
3.	Short answer Type-II (SA II)	09	03	27
4.	Long answer type (LA)	03	05	15
5.	MCQ(Practical Skills)	15	01	15
	TOTAL	41		80

**EVALUATION SCHEME – II TERM
OCT TO MARCH 2009
CLASS-IX (MATHEMATICS)**

There will be two **formative tests** and a year end **summative test**. The weightages and time schedule will be as under :

Type of test	Weightage	Time schedule
Formative Assessment 3	10 %	Oct – Dec., 2009
Formative Assessment 4	10 %	Jan – Feb 2010
Summative Assessment 2	40 %	March 2010
Total	60 %	

Formative tests may be of following forms :

- i) Unit test based on the content taught during the respective periods.
- ii) Written test/oral test
- iii) H.W./C.W.
- iv) Worksheets/assignment
- v) Quiz
- vi) Group activity/discussion
- vii) Mathematics projects in groups of 3 to 4 students. The projects can be chosen from the ones given in the Activity Book for class IX or any other topic selected students related to the subject using the taught concepts
- viii) Mathematics activities (Hands on) given in the Activity Book for Class IX or something which is related to concepts.

Summative test will be taken at the year end from the following chapters.

1. Number systems
2. Polynomials
3. Lines and angles
4. Triangles
5. Quadrilaterals
6. Areas of parallelograms and triangles
7. Circles
8. Surface areas and volumes
9. Statistics

Design of the Question Paper

	Type of question	No. of questions	Marks allotted to each question	Total marks
i)	M.C.Q.	8	1	8
		4	2	8 = 16
ii)	Short Answer Type-I	7	2	14
iii)	Short Answer Type-II	10	3	30
iv)	Long Answer Type	5	4	20
	TOTAL	34		80

ANNEXURE-III

Formative Assessment in Science will include the following:

I. Assessment on Paper-pen test.

Due weightage to be given to different types of questions (short answer, long answer, MCQ etc.)

The questions should include all difficulty levels. (Easy, Average, Difficult and HOTS)

II. Practical assessment based on CBSE curriculum 2009-2010 would include the following:

The students should be asked to conduct experiments from all areas of curriculum.

The assessments should be based on the following:

- Experimental Set up
- Observation
- Record of observation/data
- Analysis of observation/data
- Conclusions drawn by the student
- Practical Record File
- Viva

III. Continuous Assessment in the following suggested areas:

a) Home assignments / class assignments

Due weightage to be given to:

- Regularity
- Neatness
- Presentation
- Correctness

b) Class response may include:

- Oral Questioning
- Quiz
- Worksheets

S.No.	Assessment Method	Areas of Assessment
1.	<u>Oral Questioning</u> Oral Questions to assess the understanding of the topic	Listening Skills Clarity of expression Clarity of concepts Communication Skills
2.	<u>Quiz</u> The class students divided in groups and Questions pertaining to the topic asked to assess the students of a group	Thinking skills Alertness Time management Application of knowledge Reasoning skill Art of quizzing
3.	<u>Worksheets</u> Use of worksheets to assess the students in the class.	Comprehension Regularity Application of knowledge Attentiveness

c) Seminar

A topic may be divided among eight to ten students for them to research/study and 'present' it to all students. **e.g.** Topic "Improvement in Crop Yields" can be divided into sub topics for presentation by the students:

- i. Introduction
- ii. Crop Variety Improvement
- iii. Crop Production Management
- iv. Crop Protection on Management

Areas of Assessment

- ❖ Ability to research on the topic
- ❖ Acquisition of content knowledge
- ❖ Public speaking
- ❖ Verbal expression
- ❖ ICT skills
- ❖ Leadership quality

Suggested topics based on the curriculum

- Animal Husbandry
- Diseases and their causes
- Sources of energy & overcoming energy crisis
- Application of Archimede's Principle
- Physical and Chemical changes in daily life
- Separation of mixtures - the techniques

d) Symposium

Students can be asked to 'present' papers on the topics of their choice.

Areas of Assessment

- ❖ Depth of the content
- ❖ Presentation of the content
- ❖ Use of audio-visual aids
- ❖ Expression
- ❖ Comprehension of the topic

Suggested topics based on the curriculum/related to the curriculum

- Hygiene to ward off the diseases
- Prevention is better than cure
- Application of ultrasound
- 'Pressure' – its application in daily life

- Chemical classification of metals
- Atomic models

e) Group Discussion

A group of ten students can be given a topic to discuss.

- Students to choose their group leader, a moderator and a recorder
- Their roles to be clarified
- The topic to be thrown open for discussion

Group leader to ensure all students participate in the group discussion

Moderator to ensure that there is no cross talk and no two students speak together and all listen to one speaker patiently.

Recorder to record the observation made by all students in the group including his/her own.

Areas of Assessment

- ❖ Courage to put forth views
- ❖ Team work
- ❖ Respect to peer
- ❖ Knowledge of content
- ❖ Appropriate body language
- ❖ Communication skills
- ❖ Listening skills

Suggested topics - Based on curriculum OR Related to the curriculum

- Global warming and its impact
- Role of students in bringing awareness among community members on :
 - Importance of hygiene
 - Saving of power and water
 - Importance of immunization
- Displacement of an object in the absence of any force acting on it.
- Energy transformation in daily life situations
- Laws of chemical combination
- Application of Colloids

(f) Group Activity

Group Activity may include the following:

i) Projects

The students may be asked to do the investigatory/ experimental projects

- **Investigatory Projects include:**

- Collection of data
- Analysis & interpretation of data
- Observation
- Conclusion and Inference

Areas of Assessment

- ❖ Inquisitiveness
- ❖ Observational skill
- ❖ Thinking skill (logical, rationale)
- ❖ Analytical
- ❖ Application of knowledge
- ❖ Comprehension & understanding (viva-voce)
- ❖ Computing skills
- ❖ Drawing conclusions

Suggested topics related to the curriculum:

- Conservation of resources
- Factors affecting buoyant force
- Application of reflection of sound
- Spread of diseases caused by mosquito in the locality
- Soil fertility

- **Experimental Projects include:**

- Identifying problem
- Making hypothesis
- Testing/experimenting
- Observation
- Analysis & Interpretation
- Conclusion & Inference
- Making a theory

Areas of Assessment

- ❖ Inquisitiveness
- ❖ Observational skill
- ❖ Thinking skill (logical, rationale)
- ❖ Analytical
- ❖ Application of knowledge

- ❖ Comprehension & understanding (viva-voce)
- ❖ Computing skills
- ❖ Drawing conclusions
- ❖ Experimental Skills

Suggested topics related to the curriculum:

- Floatation using vegetables
- Density of immiscible liquids
- Vibrating objects produce sound
- Location of apical meristem
- Determination of PH in different sample need in daily life (eg. soap, lotions, ford substances)
- Separation of substance using paper chromatography

ii) Action Plan

Students of a class to be divided in 5-6 groups to make an action plan.

Action Plan includes identifying a problem and making a plan to find a solution. The students to

- Identify a problem
- Study the causes of the problem
- Interact with people (stake holders) associated with the problem.
- Categorize the problem in terms of
 - magnitude
 - effect on people
 - impact on community
- Make a plan to find the solution of the problem. The plan to include:
 - Meeting people
 - Counseling the people
 - Listing people/authorities who can help find solutions
 - Seeking appointments with the authorities to discuss the identified problem and seek their help
- A follow up action on the solution of the problem

The work to be divided among the students or all work in a group as a unit. Assessment may be done group-wise or student-wise

Areas of Assessment

- ❖ Identification of a problem
- ❖ Concern for the community
- ❖ Team work
- ❖ Analysis of the problem

- ❖ Strategy planned by the students
- ❖ Self confidence
- ❖ Speaking skills
- ❖ Follow up action to see concern for people/environment

Suggested topics related to the curriculum

- Smoking among teenagers vis-à-vis health
- Sale of cigarettes near schools
- Hygiene in and around school
- Seepage of water in buildings
- Leaking of water pipes
- Wastage of electricity
- Stagnation of water in the coolers
- Control of contagious/infectious diseases

iii) Survey – Collecting information on a relevant topic of study in a group

Assessment may be done group-wise or student-wise.

Areas of Assessment

- ❖ Inquisitiveness
- ❖ Conversational skills
- ❖ Public relations
- ❖ ICT skills
- ❖ Data collection
- ❖ Analytical skills

Suggested topics as general awareness (related to science)

- Garbage collection in the locality
- Prevalence of diseases in a locality/community
- Contamination of water of different areas
- Consumption/misuse of electricity

FORMATIVE ASSESSMENT in Mathematics will include the following :

i) **Unit Tests**

These may be tests based on a single unit or a group of units studied during a specified period. A test may contain (15-20) questions for duration of one or two periods. This may contain

- a) multiple type questions
- b) fill in the blanks type questions
- c) short answer type questions which test the understanding of units
- d) may contain one/two long answer type question which test the application of a number of concepts.

ii) **Oral tests**

Small questions testing the

- a) knowledge of formulae involved in the units
- b) numerical ability of problems involved in the topics
- c) logical reasoning in the steps involved
- d) Clarity of concepts

iii) **Checking of Home Work**

The student may be checked on the following:

- a) regularity in doing the home work
- b) getting it checked by the teacher and re-doing the parts which have not been done correctly(follow-up)
- c) Neatness.

iv) **Class Work**

Whether the student is

- a) attentive in the classroom
- b) replying to questions raised by the teachers in the class
- c) interaction in the class with fellow students and teachers
- d) takes proper notes of concepts taught in the class and prepares according to the next-day's work.

v) **Worksheets/Assignments**

Worksheets/assignments on different topics may be given to the students related to the topics taught in the class to check the following :

- comprehension
- regularity
- understanding of concept
- application of knowledge

vi) **Quizzes**

Quizzes can be organized on the following :

- a) Comprehension of concepts
- b) Application of knowledge
- c) Reasoning skills
- d) Knowledge of historical events related to the subject

Some of the topics for quizzes can be

- Contribution of Indian Mathematician on various topics
- The knowledge on general topics like the number π , the golden triangle, the fourth dimension in the spatial concepts, etc.

vii) **Group Activity**

Activities given in the Activity books for classes IX and X can be done. Also teachers can think of other activities which help to clarify the concepts. Activities can be done in groups as well in individual capacity.

The student may be evaluated on the following :

- (a) Performance of activity
- (b) File record of the activities performed
- (c) Viva

viii) **Discussions/seminars, etc.**

The group discussions/seminars may be organized on the general topics like

- The concepts of zero and infinity
- Contribution of Indian Mathematicians
- The history of π etc.

i) **Project Work**

It may be presented in any of the following forms:

- a) Written project reports
- b) Charts/Models
- c) Power point presentations
- d) Survey analysis

Projects can be evaluated on the following :

- Rationale of the project
- Inquisitiveness, observation skill, thinking skill, analytical ability
- Application of knowledge
- Drawing conclusion
- Presentation in style

Some suggested projects are as follows :

- ii) Observing interesting patterns in a cricket match

This involves the performance of two teams involved in the following :

- a) run-rate per over
- b) runs scored in first 10,20,-----50 over by two teams.
- c) Wickets taken and runs per over given by bowlers.

Presenting the whole information in detail in

- Written form.
- Pictorial forms, - bar charts
- Tabular form – comparisons on bowling pattern, batting pattern, etc.

- iii) Designing a Cross Word Puzzle with Mathematics terms
- iv) History of ^
- v) Contribution and life history of a selected Indian Mathematician like
 - Aryabhata
 - Mahaviracharya
 - Bhaskaracharya, etc.
- vi) Number of different types of shop in a nearby shopping centre (A) ----- (B) -----
----- and its sufficiency.
- vii)
- viii) Survey type projects (involving field trips to different industries etc.)
