

For the new CBSE Uniform System of Assessment

NEW SCIENCE AHEAD

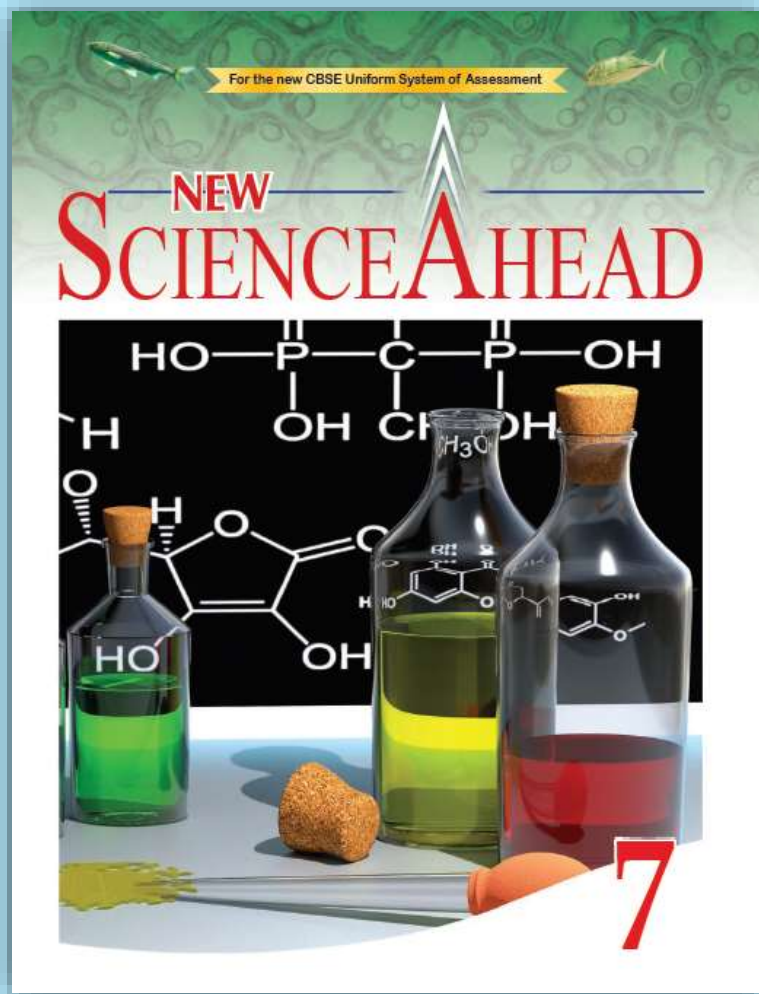


Orient BlackSwan

New Science Ahead

For the NCERT syllabus

PRODUCT PRESENTATION



THE PACKAGE

Students' Books

Introductory to 8

Teachers' Resource Packs

Classes 1–8

Smart Books for Teachers

Classes 1–8

Students' Apps

Classes 3–8

Web Support

Classes 1–8

COVERS





CORE FEATURES

- Follows the NCERT syllabus **CBSE/NCERT**
- In accordance with Bloom's *Revised Taxonomy of Educational Objectives*
- Learning objectives **CBSE/NCERT**
- Activities for assessment **CBSE/NCERT**
- Case studies **CBSE/NCERT**
- Be Inspired!
- Our Heritage **CBSE/NCERT**
- National Science Olympiad sample papers

Yearly Examination

Classes 7-10

Section A

Very short answer questions 2 x 1 = 2 marks

1. What are sperm and ova together known as?
2. How much of the total water on Earth is freshwater available for our use?

Short answer questions-I 3 x 2 = 6 marks

3. Nisha took an egg, dissolved its shell with acid, and left it in water overnight. The next day, the egg was larger. She wrote, "The egg swells because it takes in water by osmosis." Is Nisha's conclusion correct? Why, or why not?
4. Why do seeds need to be dispersed?
5. A body in uniform motion covers a distance of 300 m in 10 s. Calculate the speed of the body.

Short answer questions-II 10 x 3 = 30 marks

6. "All plants are autotrophic" is this statement true or false? Give reasons to support your answer.
7. Joseph was heating milk in a stainless steel vessel and a copper-bottomed vessel. In which vessel is the milk likely to boil faster and why?
8. List any three ways in which you can determine that a chemical reaction has taken place.

OR

How is the nature of a salt formed by a neutralisation reaction determined by the reactants?

9. Explain three differences between asexual and sexual reproduction.
10. You are at home one evening when a thunderstorm strikes. List three things you should do to keep yourself safe during the storm.

11. There was a water shortage in Survi's neighbourhood. He started a campaign to install rainwater harvesting systems in everyone's houses.

- (i) List two more methods we can use in our homes to conserve water.
- (ii) What values did Survi display?

12. Study the figure and answer the questions.

- (i) What does the figure represent?
- (ii) Which step in the process leads to the recharge of groundwater?
- (iii) What is the source of heat for evaporation of surface water?



13. What are decomposers? Why is it necessary to have these organisms in a forest?

14. Name three sources of waste water and one example of the contaminants present in each.

OR

What is sewage? What are the disadvantages of using open drains for sewage transport?

15. List three methods to control water contamination.

Long answer questions 6 x 5 = 30 marks


16. Describe two ways in which the presence of water bodies affects climate.

Sample question papers
Two tests and two examinations

In accordance with Bloom's
Revised Taxonomy of Educational Objectives
With a handy table of question cues and learning outcomes

3

Animal Fibres



Learning Objectives

By the end of the lesson, you will be able to:

- describe the processing of wool
- describe the life cycle of a silk moth
- list the stages of production in sericulture
- describe the diseases that affect the workers of the sericulture industry

Learning objectives
Guide the learning process and encourage students to take responsibility for their learning

Experiment Activities

Experiment

to show that heat travels from a hotter body to a colder body till both bodies are at the same temperature. You may use water at two different temperatures to do this experiment.

Visit a weather station near your town or city if there is one. Ask the officials how they measure temperature. Which kind of thermometer is used? Write a report about your visit.

Creating

Applying

Applying

Activity 7.2

Aim: To observe changes that take place during the burning of a candle.

Method: Take a small candle. Light it and fix it on the table. Let it burn completely. You will observe that a small amount of wax is left at the end. What happened to the rest of the wax? What kind of change has taken place?

Activities for Assessment

1. Making fossils


Aim: To make your own fossil

Materials required: shell, plaster of Paris, petroleum jelly, bowl, spoon

Method

1. Clean the shell carefully and dry it.
2. Use a brush to coat the shell with petroleum jelly. This is to prevent the plaster from sticking to the shell.
3. Mix a small quantity of plaster. Use the spoon to cover the shell with a thick layer of the plaster.
4. Leave the plaster to harden for a few hours. Then carefully remove the plaster.

You now have an impression of the shell!



Scientific experiments
For experiential learning

Activities for assessment
Experiments, field trips,
model-making and more

Categories

Remembering

Understanding

Skills Demonstrated

- observation and recall of information
- knowledge of dates, events, places
- knowledge of major ideas
- mastery of subject matter

Verbs used as question cues:

list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.

- understanding information
- grasping of meaning
- translation of knowledge into new situations
- interpretation



Case study

In 1822, Alexis St. Martin, a Canadian fur trapper, was accidentally shot in the abdomen. When the wound healed, there was a small hole left in his abdomen that extended into his stomach. Dr William Beaumont, a surgeon, carried out many experiments on the process of digestion using this hole in St. Martin's stomach. This work has increased our understanding of the process of digestion and the functions of digestive juices.

Case studies
In-depth coverage of important topics in classes 6–8

National Science Olympiad
sample papers
For competitive advantage



National Science Olympiad

The actual National Science Olympiad test paper has 50 questions.

There are 3 sections, 10 questions in section I (Logical reasoning), 35 in section II (Science) and 5 in section III (Achievers section).

Syllabus for Science

Motion and Measurement of Distances; Light, Shadows and Reflections; Electricity and Circuits; Fun with Magnets; Our Environment; Sorting and Separation of Materials; Changes Around Us; Living Organisms and their Surroundings; Food and its Components; Fibre to Fabric.

- Who wrote the book "The Origin of Species"?
(A) Louis Pasteur (B) Charles Darwin (C) Stephen Hawking (D) Sir Alexander Fleming
- The tail of a comet always points towards the Sun.
(A) false (B) true (C) cannot say (D) when nearing the Sun
- Which of the following is necessary for burning (combustion)?



Be Inspired!

Most of us have seen many children at railway stations, bus stops and traffic signals selling small items. They do not go to school, and thus have not been taught to read or write. A police constable, Dharamvir Singh, has been teaching the children who come to the Nizamuddin railway station in New Delhi to read and write. He also teaches them some basic mathematics. This has resulted in the children spending more time on their education and in bettering their lives.

Internet Links

- <http://www.aamath.com/mea.html>
- <http://www.schoolingkids.com/india-ap-inter/physics-kinematics/study-notes/rest-motion-kinds-translatory-rotatory-oscillatory-periodic-random.php>
- http://www.physics4kids.com/files/motion_intro.html

OUR HERITAGE

Our ancestors used certain traditional units to measure distances. The smallest unit was the *angula*, which is around two centimetres. Twelve *angulas* made up a *vitasta*, which is equal to a hand span. Four *vitastas* made up a *hasta*, which is equal to a cubit. A *yojana* is equal to around 15 kilometres in SI units.

Be Inspired!

Inspiring students through the lives of scientists and those whose values have made a difference

Our Heritage

India's scientific heritage



ADDITIONAL STRENGTHS

- Fresh, attractive layout with a focus on readability
- Well-labelled illustrations
- Science tidbits
- Lesson summary
- Higher-order Thinking Skills **CBSE/NCERT**
- Life skills **CBSE/NCERT**
- Internet links
- Glossary

Higher-order Thinking Skills

1. Why can we not see stars during the day?
2. What is the difference between day and night?

Life Skills

During the day, the Sun gives us light to see. Do not turn on the lights in your house during the day. Keep the windows open to let in sunlight.

Higher-order Thinking Skills
 Along with problem-solving, crucial for developing scientific thought

Life skills
 Skills to cope with real-life issues

Assess Yourself

Mark ✓ if you have understood the concept.

- ☞ The transfer of heat from a hot object to a less hot object when they are in contact is called conduction of heat.
- ☞ Materials that conduct heat readily are called good conductors of heat. Materials that do not conduct heat readily are called insulators.
- ☞ The process by which heat is transmitted in liquids and gases by the actual movement of molecules is called convection.
- ☞ The continuous movement that is seen when a warm substance rises and a cooler substance settles down in its place is called a convection current.
- ☞ The transfer of heat in the form of electromagnetic waves from one body to another through a vacuum or a medium is called radiation.

Lesson summary
 Quick recap to help concept retention

Well-labelled illustrations
 For visual learning

Internet Links

<https://spaceplace.nasa.gov/coloring-book/en/#>

Internet links
 For extended learning

Science tidbits
 To excite interest and raise awareness

Did You Know?

The ostrich lays the biggest eggs among all birds. An ostrich egg is as big as 24 hen's eggs put together in weight!

Glossary

immunisation protecting a person or an animal from a disease by giving them a vaccine

infectious can spread from one animal or person to another

microscope an instrument used to observe

Glossary
 Difficult words and terms explained in lesson footnotes and at the end of the book

Analysing

Activity 5.1

Aim: To carry out destructive distillation of coal

Materials required: powdered coal, distilled water, boiling tubes, glass tubes, one-holed stopper, two-holed stopper, stand, Bunsen burner

Method

1. Place powdered coal in boiling tube A.
2. Take distilled water in boiling tube B.
3. Set up the apparatus as shown.
4. Heat the coal strongly.
5. After a few minutes, bring a lighted splint near the tip of the glass tube from tube B.

What do you observe?

Observations

A vapour forms when the coal is heated. It passes through the water in tube B. Coal tar, a thick black liquid, settles at the bottom of tube B. Ammonia dissolves in the water to form ammoniacal liquor. Coal gas is

Fig. 5.2 Destructive distillation of coal



TEACHER SUPPORT: THE TEACHERS' RESOURCE PACK

FOR CLASSROOM TEACHING

- Lesson Plans
 - Concept maps / Graphic organisers
 - Learning outcomes
 - Essential questions
 - Activities
- Answer key to the students' book exercises



FOR PRACTICE AND ASSESSMENT

- Practical-based questions (PBQs) (CBSE requisite)
- Value-based questions (CBSE requisite)
- Question papers with answer key
- Question bank with answer key
- Worksheets with answer key

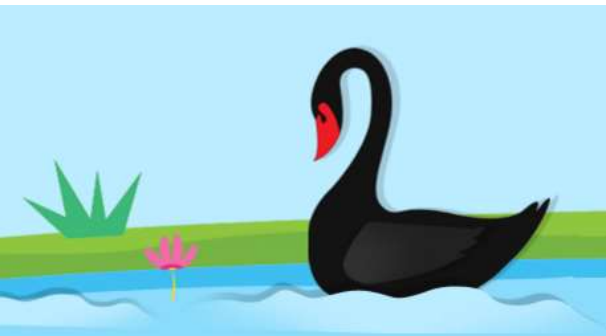


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D I G I T A L



EBOOK

**DIGITAL
SUPPORT**



Smart Books for Teachers

- Animations
- Videos of science experiments
- Interactive tasks
- Presentations
- Picture galleries





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D I G I T A L

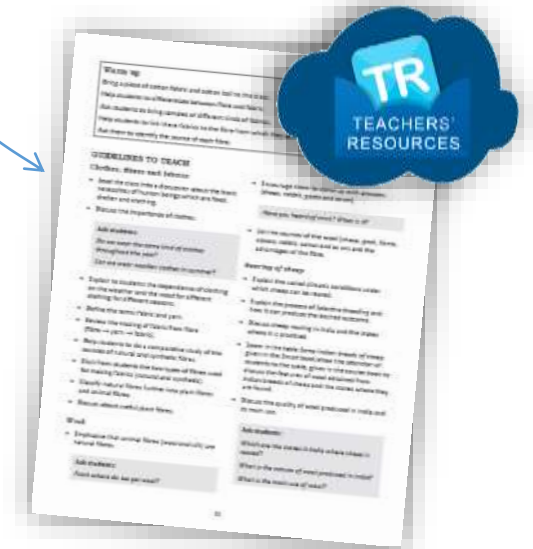
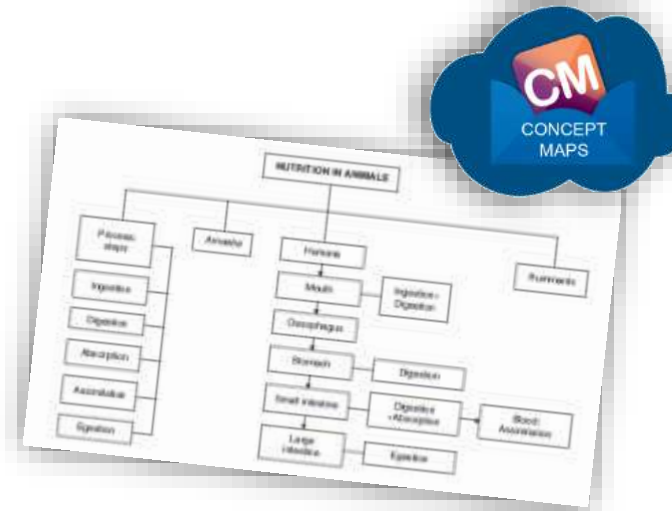
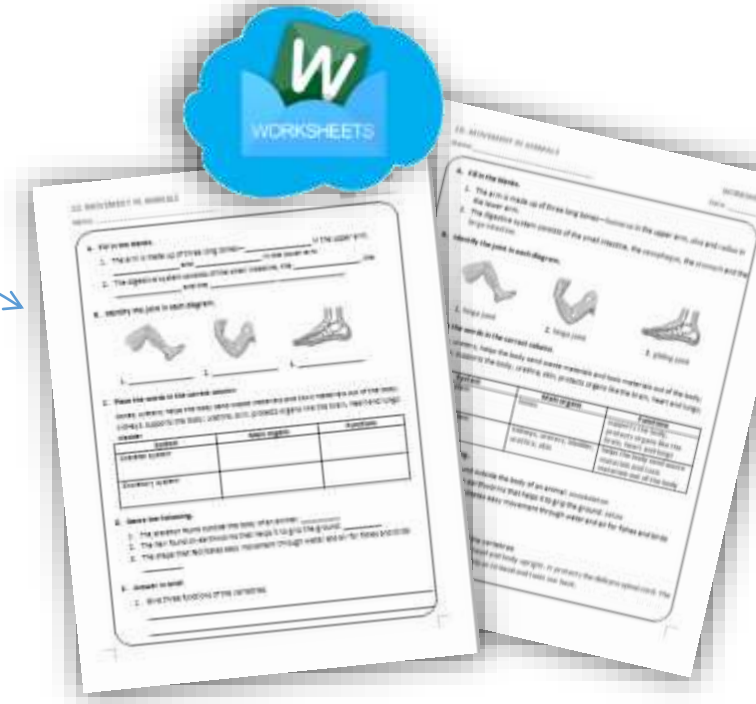


**DIGITAL
SUPPORT**



Smart Books for Teachers

- Concept maps
- Worksheets with answer key
- **Teachers' resource corner** with lesson plans
- **Question-paper generator**



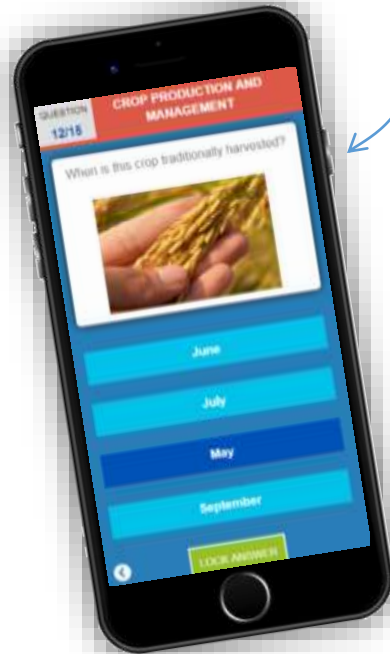


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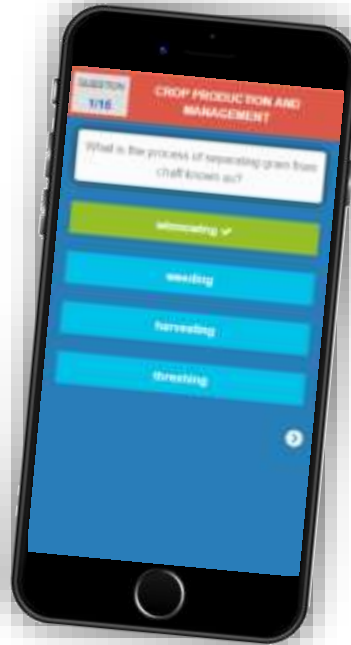


STUDENTS'
APP

Practice mode

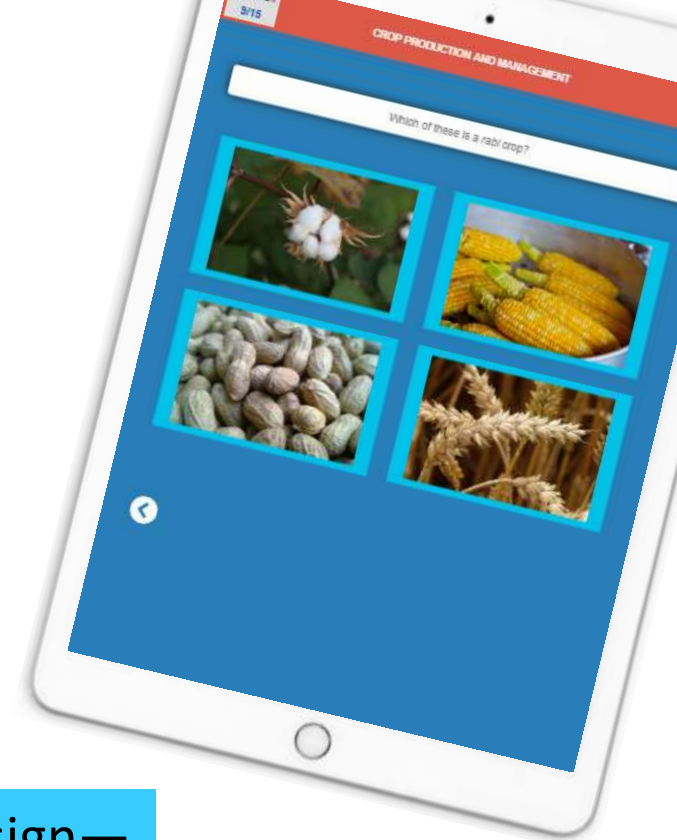


Test mode



Shuffled questions
and answers

Responsive design—
works across devices



Andriod and iOS
compatible!



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THANK YOU

