



NEW SCIENCE AHEAD



1

New

ScienceAhead

has been developed in accordance with

- the CBSE's educational initiatives for effective teaching and learning
- the guidelines laid down in the National Curriculum Framework
- tried and tested methodology in the teaching of science
- the needs of the teacher and the student



Students' Book

- carefully graded text
- experiments and activities
- appealing images
- attractive layout

Teachers' Resource Pack

- For each lesson:
 - lesson plan
 - question bank with answers
 - worksheet with answers
 - answers for exercises in the students' book
 - activities for assessment
 - Tests* and Examination papers with answers
- * for classes 3–8

In the Students' Book

Concept Development

Learning Objectives

- encourage students to evaluate their progress and take responsibility for their learning

Mind Opener

- draws students into the lesson
- prepares them for new learning

Lesson Text

- carefully graded
- enables understanding
- visually appealing

In-lesson Activities

- help students develop a scientific temperament

You Now Know

- summarises the lesson
- enables easy revision

Reference

Did You Know?

- nuggets of interesting information

Be Inspired! Scientists and Values

- information on people who have expanded the world of science or made the world a better place

OUR HERITAGE

NEW!

- an exploration of India's rich heritage in science

Internet Links

- enable students to use IT to explore topics in greater depth

Glossary

- definitions of technical terms



Smart Book for Teachers

informative, interactive and exciting, with:

- animations
 - picture galleries
 - audio
 - interactive tasks
 - presentations
 - teachers' resources
- including
- extra questions
 - worksheets
 - concept maps
 - question-paper generator

Students' App

questions that help students
review lessons
for classes 3–8

NEW!

Web Support

a portal dedicated to the series
with free access for teachers

In the Students' Book

Skill Development

Looking Back

- within-lesson questions
- immediate feedback for the teacher

Higher-order Thinking Skills

- questions to improve students' analytical and problem-solving skills

Exercises

- multiple choice questions (MCQs)
- true or false
- fill in the blanks
- diagram-based questions
- long-answer questions
- ...and more

Life Skills

- decision making
- problem solving
- critical thinking
- self management
- effective communication
- ...and more

Activities for Assessment

- science experiments
- written assignments
- simple projects
- presentations (IT)
- model making
- field trips
- ...and more

Fun Activities

- activities that make learning science joyful

Testing

Tests

- short tests to assess students' understanding of concepts
for classes 3–8

Examination Papers

- for examination practice

NEW!



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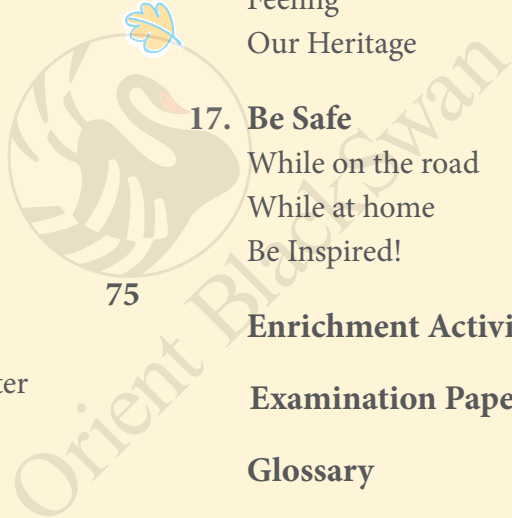
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List of enrichment activities included in New ScienceAhead 1

- Multiple choice questions: 15, 23, 28, 61, 63
- Written assignments: pages 59, 86
- Research work on the computer (IT): Internet links at the end of every chapter
- Group work: pages 48, 63, 93, 97
- Simple science experiments: pages 21, 56
- Collecting natural specimens: pages 10, 11, 24, 43
- Show and tell/Interviews: pages 17, 73
- Field tour: pages 6, 17, 24, 43, 58, 80
- Simple projects and presentations: pages 10, 11, 24, 63, 68, 74, 79, 80, 85, 86, 93, 97
- Class response: Mind openers at the beginning of each lesson; 'Looking Back' questions; higher-order thinking skills questions
- Crafts: pages 6, 10, 11, 17, 18, 24, 30, 36, 37, 43, 48, 54, 63, 68, 74, 86, 97
- Games, puzzles and quizzes: pages 1, 6, 9, 22, 24, 29, 31, 36, 54, 88, 93





Plants Grow from Seeds

Mind Opener

When you eat a mango, which parts do you throw away? Sometimes you throw away the peel. Which other part do you throw away?

Learning Objectives

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

- give examples of fruits with one seed and many seeds
- explain how plants grow from seeds

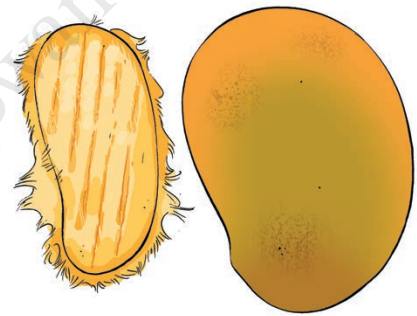
When you eat a mango, you throw away the hard thing inside the fruit.

This hard thing is the **seed**.

Other fruits also have seeds inside them.

Some fruits have only one seed.

Can you name a fruit with only one seed inside it?



Mango



Lychee



Avocado



Peach



Some fruits have many seeds inside them.



Pomegranate



Musk-melon



Papaya

In lesson 3, we learnt that we eat the seeds of some plants. Do you remember some of them?



Mungbean (*dal*)



Wheat



Maize

GROW YOUR OWN PLANT

Seeds grow into new plants. Let us see how.

Teacher's Note

The transformation from a seed to a plant is a slow process, and children may have difficulty comprehending the process until they see it for themselves. The experiment of growing seeds in class is therefore important.





Activity

Grow new plants

You will need: seeds, soil, a pot, water

Method

Take some bean seeds. Soak¹ them in water for a few hours.

Take a small flower pot. Fill the flower pot with some soil. Plant a few seeds in the soil.

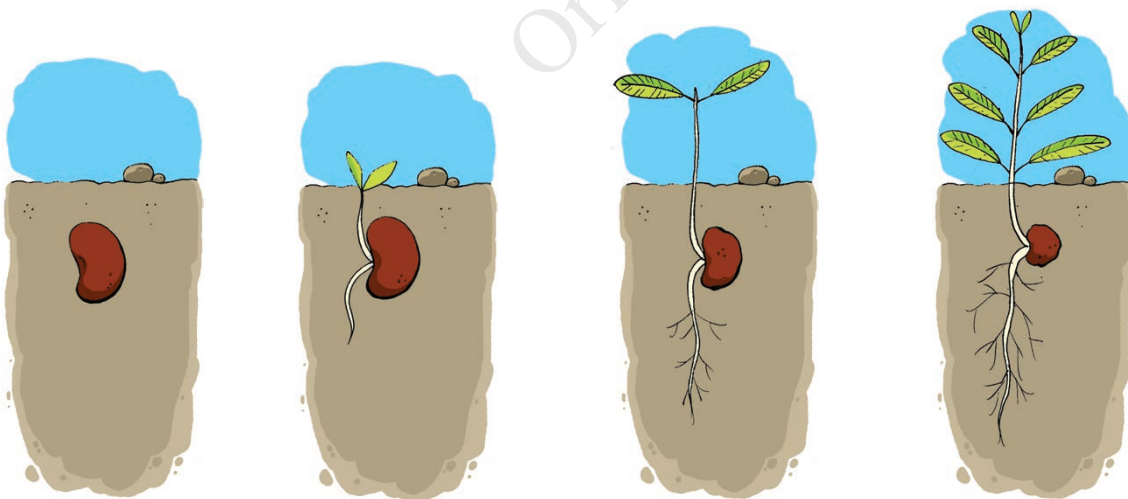
Water the pot. Place the pot near a window. Write your name on the pot. Water it every day. Do not pour too much water.

After a few days, the seeds will start growing. New plants will start coming out of the seeds.



¹ soak to keep something in water for sometime

A seed has a baby plant inside it. When a seed gets enough water, sunlight, soil and air, the baby plant grows into a new plant.



A baby plant growing from a seed



Looking Back



What could happen if you bury orange seeds in the soil and water them?



You Now Know...



- ✎ Fruits have seeds in them.
- ✎ Seeds have baby plants inside them.
- ✎ When seeds get enough water, sunlight, soil and air, they grow into new plants.



Exercises

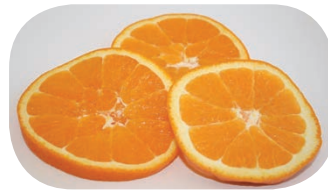
A. Match the pictures to the words.

1.



a. Mango

4.



b. Watermelon

2.



c. Orange

5.



d. Peach

3.



e. Apple

6.



f. Cherry



B. Fill in the blanks.

1. The hard things inside fruits are called _____.
2. A guava has _____ (one / many) seeds and a mango has _____ (one / many) seed.
3. Seeds grow into new _____.
4. A seed needs air, water, soil and _____ to grow into a plant.

C. Write ✓ for true and X for false in the .

1. A peach has only one seed inside it.
2. A papaya has only one seed inside it.
3. We eat bean seeds.
4. A seed has a baby plant inside it.
5. Seeds need water, sunlight, air and soil to grow.

D. Look at the pictures and fill in the missing letters.



1. A _ _ _ LE



2. P _ P _ _ A



3. CA _ R _ T



4. C _ B _ _ GE



Higher-order Thinking Skills

John planted seeds in a pot with soil in it. But he forgot to water the seeds. Do you think baby plants will grow from the seeds?





Life Skills

Collect as many seeds as you can from your kitchen or visit a grocery shop with a grown-up to get some seeds. Now, plant them in the garden or in clay pots. See how many grow into plants.



Enrichment Activities

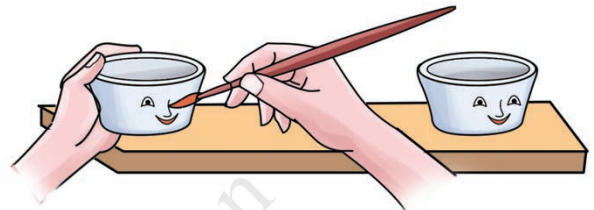
Make your own cup people!

You will need: ice cream cups, mustard and gram seeds, cotton, colours

Method

1. Take two ice cream cups.
2. Colour them and draw faces on them.
3. Place wet cotton inside the cups.
4. Place some mustard seeds in one cup and green gram seeds in the other.
5. Keep the cotton wet.
6. Place your cups where there is light.
7. Watch the small plants grow.

It will look like your cup people have hair!



Be Inspired!

Norman Borlaug

Norman Borlaug was an American scientist who grew wheat plants that were healthy and provided more wheat. He saved a lot of people from dying of hunger.



Internet Links

<http://kids.nationalgeographic.com/Animals/>

Your Senses

16

Mind Opener

Look at the pictures below.
Can you tell what each child is doing?

Learning Objectives

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

- 🌿 identify and name the five sense organs of the body
- 🌿 explain the functions of each sense organ
- 🌿 explain how the sense organs help us to know the world around us



Zapu



Selvi



David



Fatima



Sharandeep

Teacher's Note

Children will be aware of their sense organs such as eyes, ears and nose, and their functions. However, they may not relate tasting to the tongue, or feeling to the skin. Give special attention to these. The objective here is not only to tell them about the specific functions performed by the sense organs, but also the variety of sounds, smells and tastes that can be detected.

Use the words given in the box to fill in the blanks.

see taste hear smell feel

1. Zapu can _____ the painting with his eyes.
2. Selvi can _____ music with her ears.
3. David can _____ that the teddy bear is soft.
4. Fatima can _____ the food with her nose.
5. Sharandeep can _____ the food with his tongue.

Seeing, hearing, tasting, smelling and feeling are your five senses.

SEEING

Look out of the window.

Write down the names of three things that you can see. Write down their colours too.

Also, write down if they are far or near.



Look out of the window.

Name of thing	Colour	Far or Near

Your **eyes** help you to **see** things around you.

You can see their colours too. You can see if they are far or near.

During the day, the Sun gives light.
You can see things clearly in the light of the Sun.

Walk into a dark room.
Can you see anything in the room?
Switch on the light. Can you see now?
You need **light** to see things clearly.



A dark room

HEARING

You **hear** with your **ears**.
Your ears hear various sounds.
Some sounds are pleasant.
Some sounds are unpleasant.
Some sounds are soft.
Some sounds are loud.



Pleasant sound

TASTING

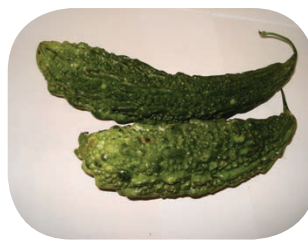
Your **tongue** tells you what type of food you are eating. It helps you to **taste**.
Try tasting these foods.



Sweet



Salty



Bitter



Sour



SMELLING

Your **nose** helps you to **smell** things.

A rose smells nice.
Garbage smells bad.



Rose



Perfume



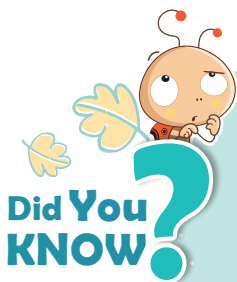
Garbage



Dirty water



Smoke



A snake cannot taste with its tongue. It uses its tongue to smell!

FEELING

Tell your friend to touch you very lightly on your hands, legs and hair.

You can feel the touch on your hands and legs.

You cannot feel the touch on the hair.

You can feel the touch wherever there is skin on the body.

You can **feel** with your **skin**.

You can feel if something is soft or hard.

You can also feel if it is smooth or rough.
You can feel if it is hot or cold.



Hard



Hot



Rough



Soft



Cold



Smooth

Looking Back



1. Close your eyes and ask your friend to give you something to eat. Can you say what you are eating? Do you need your eyes to taste?
2. Rohit was standing near a fish market while waiting for his school bus. He had to use a handkerchief to cover his nose. Why?



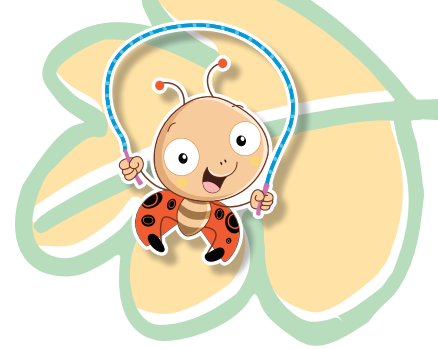
You Now Know...



- 🐝 The five senses in your body are seeing, hearing, tasting, smelling and feeling.
- 🐝 You see with your eyes, hear with your ears, taste with your tongue, smell with your nose and feel with your skin.



Exercises



A. Match the words in the two columns.

Column A

1. ears
2. tongue
3. skin
4. eyes
5. nose

Column B

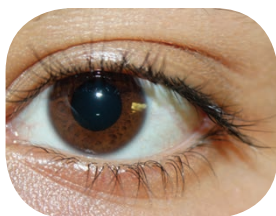
- a. The pan is hot.
- b. The food smells good.
- c. This is a red balloon.
- d. This medicine is bitter.
- e. The music is too loud.

B. Fill in the blanks.

1. You will not be able to see with your eyes if there is no _____.
2. When you hear loud and unpleasant sounds, you block your _____.
3. Cakes taste _____.
4. When you pass a garbage dump, you cover your _____ with a handkerchief.

C. Look at the pictures. What do you do with these body parts?

1.



2.



3.



4.



5.



D. Why can you not see anything in a dark room?





Higher-order Thinking Skills

1. Can you tell if your mother is angry by the sound of her voice?
2. Which senses do you use when your teacher teaches you in class?



Life Skills

Sense organs are very important to us. So, we have to look after them.

- Do not clean your ears with sharp objects.
- Do not rub your eyes hard.
- Do not put anything inside your nose.
- Do not scratch your skin with sharp nails or objects.
- Do not drink anything that is very hot; it will burn your tongue.



Enrichment Activities

Magic fingers

Blindfold your friend. Place different things on the table.

You can place things like a piece of wood, feather, wool, ice cube, brush, bottle, crayon, pencil, coin and hand towel. Do not use anything that is sharp. Let your friend name the things by feeling them.

Internet Links

http://www.kviekids.org/games/discover_science/my_five_senses.htm

OUR HERITAGE

Bitter gourd

Bitter gourd is known as *karela* in Hindi. It has a bitter taste, but it is a healthy food. Different parts of this plant are used in Indian medicines.



NEW SCIENCEAHEAD

CLASS 1



Orient BlackSwan

The National Education Policy (NEP) 2020 emphasises certain crucial parameters based on content and pedagogy.

The New ScienceAhead series provides a rich range of exercises and activities for each of the parameters.

Here is a quick reference guide to some of the examples in this book.

The New ScienceAhead series is mapped perfectly to the National Education Policy 2020.

21st Century Skills

A broad set of skills, knowledge, work habits and character traits that are important for success in the 21st century

Experiential/ Constructivist Approach

Learners construct their knowledge, based on what they already know, through experience or by doing and reflection

Integrated Approach

An approach to teaching and learning that works by connecting knowledge and skills across the curriculum, by bringing real life examples to the classroom

The NEP parameters	Features	Page nos.
The 4Cs		
Collaboration	Enrichment Activities	63
Collaboration	Enrichment Activities	102
Critical Thinking	Higher Order Thinking Skills	23
Critical Thinking	Higher Order Thinking Skills	53
Social and Emotional Learning	Life Skills	30
	Higher Order Thinking Skills	93
Multiple Intelligences	Fun Activity	99
	Fun Activity	102

The NEP parameters	Features	Page nos.
Experiential/Constructivist Approach	Life Skills	6
	Activity	56
	Enrichment Activities	80

The NEP parameters	Features	Page nos.
Subject Integration	Life Skills (General Awareness)	17
	Enrichment Activities (Language)	30
	Life Skills (Cooking)	85
Art Integration	Enrichment Activities	37
	Enrichment Activities	97
Health and Wellness	Life Skills	53
	Higher Order Thinking Skills	79
	Life Skills	93
Values	Be Inspired!	37
	Life Skills	58
	Be Inspired!	98

Sustainable Development Goals

A framework of 17 global goals designed to be a blueprint to achieve a better and more sustainable future for all

The NEP parameters	Features	Page nos.
Life Skills	Life Skills	10
	Life Skills	30
	Life Skills	97

The NEP parameters	Features	Page nos.
Sustainable Development Goals	Be Inspired!	6
	Life Skills	73
	Text	75–77

The NEP parameters	Features	Page nos.
Know more about India	Our Heritage	18
	Our Heritage	68
	Our Heritage	93

India Knowledge

A strong focus on ancient knowledge from India, traditional values, modern developments and future aspirations

Digital Integration

The use of digital tools to enhance and support the teaching–learning process

ICT/Digital resources

Teachers' Smart Book - Flipbook, Audio, Animations, Presentations, Picture Galleries, Interactive Activities, Embedded Questions, Worksheets with Answer Key, Games

Teacher Empowerment

Teachers' Resource Pack - Lesson Plans with Enrichment Activities, Question Bank with Answer Key, Worksheets with Answer Key, Sample Papers for Assessment with Answer Key, Students' Book Answer Key

Teachers' Portal - Lesson Plans, Question Bank with Answer Key, Worksheets, Sample Assessment, Answer Key (for Exercises, Enrichment Activities and Assessment Papers in the Students' Book; Worksheets and Assessment Papers in the TRP)



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