

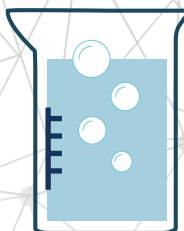
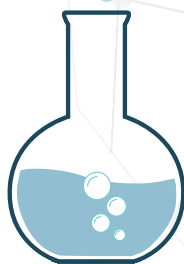
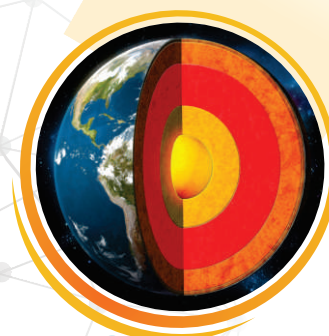
Insight into **SCIENCE**

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Preface

Insight into SCIENCE is a series of science books for classes kindergarten to V, specially designed to lead young minds to explore the world of science and to bring to an end the teacher's perennial search for the ideally graded science books that develop a scientific aptitude in young learners. The books are designed for schools teaching a specialised science course at the primary level.

Science is a subject that appeals greatly to young minds and becomes most interesting for both the learner and the teacher if taught using an interactive and innovative method. The books in the series equip the teacher with innovative techniques and explain the concepts of science in a most interesting, learner-friendly manner, using very lucid language. The books focus on students' understanding the concepts and discourage rote learning. For this, scientific principles have been correlated with children's everyday experiences.

Some key features of the **Insight into SCIENCE** series:

- ☀ The approach adopted is innovative and emphasises learning actively by investigating, observing and experimenting.
- ☀ The text is supported by rich, self-explanatory illustrations to aid learning.
- ☀ *Naughty Nitoo* comic stories arouse students' interest in the topic to be taught.
- ☀ *What you already know*, at the beginning of each chapter, activates students' background knowledge and relates it to the topic, which arouses students' interest in the topic and helps them to understand it easily.
- ☀ *What you will know* has topic-based questions that usually arise in young children's minds. It encourages students to explore the subject to find the answers to their questions, while also setting learning objectives.
- ☀ *Fun and learn* has interesting experiments and activities to consolidate learning.
- ☀ *Know a fact* provides extra information related to the topic, which motivates students to further explore the subject in particular and the world of science in general.
- ☀ *Words to remember* provides explanations of all the important words that may be new for students.
- ☀ *Points to recall* sums up the chapter perfectly, facilitating revision.
- ☀ *Exercises* are comprehensive and include a wide variety of questions for testing all types of students: not so intelligent, average and extraordinarily intelligent.
- ☀ *Tell your teacher* inculcates moral values in students and develops their communication skills.
- ☀ *Find out* asks students questions about daily life situations involving the application of the scientific principle taught in the chapter. It encourages students to explore the scientific world on their own.
- ☀ *Project*, provided in each chapter, gives students an interesting task in the application of the theory or principle taught and aims at making them scientifically creative.
- ☀ *Experiment* or *Activity time*, at the end of the chapter, aims at making students scientifically innovative with the help of an activity using easily available resources.

We sincerely hope that with all these valuable qualities, the books in the series will not only impart scientific knowledge but also develop a scientific aptitude in children and lead them to apply scientific principles for a better and brighter future of humanity.

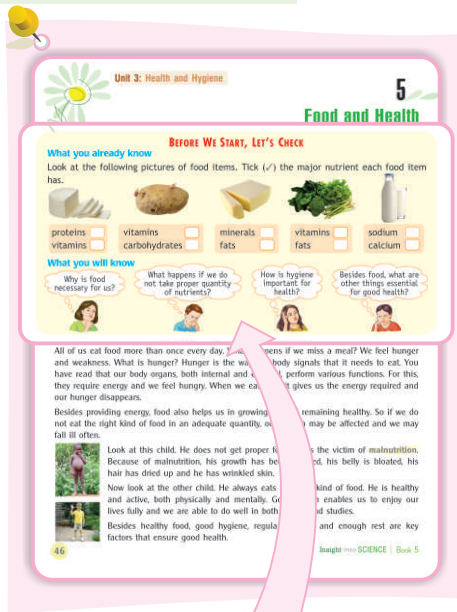
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Highlights



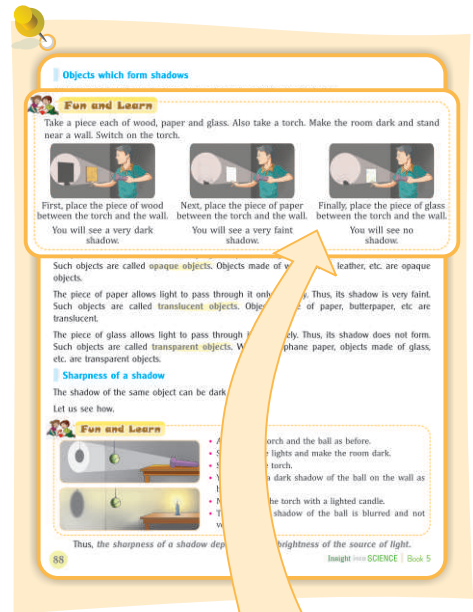
Naughty Nitoo

comic stories describe everyday activities of a typically curious and naughty child to arouse students' curiosity and make them eager to learn.



Before We Start, Let's Check

activates students prior knowledge related to the topic to be taught and makes every student active in class.



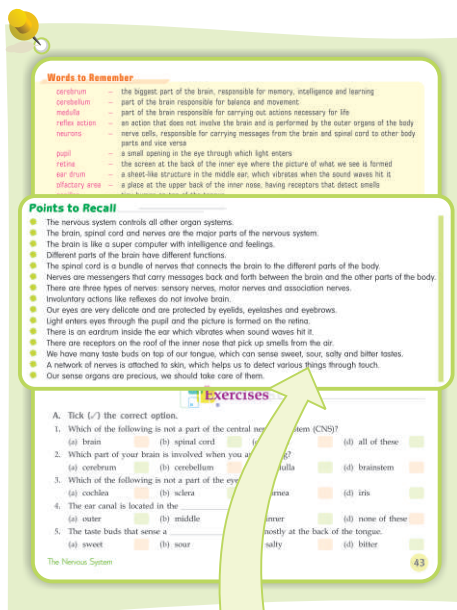
Fun and Learn

has novel activities and experiments within the text that help to consolidate learning.



Words to Remember

provides explanations of all the important words used in the chapter and does away with students' need for a dictionary.



Points to Recall

sums up the chapter perfectly, facilitating revision and the consolidation of learning.



Brainstorm

has questions to answer which students have to use their thinking skills and think out of the box.

TELL YOUR TEACHER

Some people do not have all the sense organs. We call them differently abled people. We should always treat them with love and respect.

Read the following activities and tell your teacher what right or wrong thing each child did.

- One day, when Rohit went to the park to play, he saw a deaf and mute girl with his friends. When Rohit asked about her, he was informed that she was his new neighbour. Rohit told his friends not to include her in their play group as she could not hear or tell anything.
- Yesterday, Sapna stopped her younger brother from using a matchstick to remove ear wax.
- Dipti, Raja and Vasu are classmates. Yesterday, Dipti saw Vasu using the handkerchief of Raja for blowing his nose. Dipti stopped Vasu from doing so.

FIND OUT

Why do we find food so tasteless when our nose is blocked due to cold?

What is Braille? How is it useful? Who invented it?

Project

Many people have achieved great success in life even after being differently abled. They are our sources of inspiration. Write brief bio-sketches of any two of the following personalities and show them to your teacher.

- L.V. Beethoven
- Helen Keller
- Stephen Hawking
- Ravindra Jain
- Jelena, the Internet, etc.

Experiment

1. To check the sense of smell

Choose a friend. Blindfold him. Collect some items that have a specific smell. Ask him to sniff them one by one and guess their names. (e.g., a mint leaf, coffee powder, a jasmine flower, a garlic clove, etc.)

2. Why do we have two eyes?

Hang a picture of a flower on a wall. Stand about a meter away from it. Point your finger at the flower and shut your right eye only. Now, without moving your finger, shut the left eye only.

The Nervous System

Tell Your Teacher

inculcates moral values in young children and develops their communication skills.

TELL YOUR TEACHER

Read the following and tell your teacher what right or wrong each child did.

- Jatin and Radha were in the park. They were playing on a see-saw. Suddenly, Jatin got up without telling Radha about it.
- Rohit's grandfather had to go abroad. Rohit's mother was at the market to buy a suitcase for him. Rohit was also with her. Rohit requested his mother to buy a travel bag with wheels instead of suitcase.
- Shalu and her friends were playing hopscotch in her courtyard. They had a flat stone as the marker. After a few shots, they felt that the stone was a little too big. Shalu at once went inside the house and

FIND OUT

What do we call this? What is the advantage of it?

What is an Archimedes' screw? What is it used for?

Take a pencil and a notebook. Move around in each of the following rooms:

- Kitchen
- Living room
- Bathroom

Write their names and explain how each of them makes your work easier. Submit it to your teacher.

Activity Time

Making a Simple Machine

What you need

- a corrugated sheet
- new plastic 6 inches
- a 6-inch long iron wire
- a toy bucket
- smaller reel

Steps

- Cut four rectangular pieces of 4" x 4" off the corrugated sheet and paste them as shown.
- Put the wire on the reel.
- Make two holes on the rulers at one inch from the top and insert the wire through them.
- Take the wooden reel and hang it on the wire as shown.
- No need to tie the wire.
- Pass the cord through the reel as shown.

Your wheel with pulley up or down as you ease the rope.

Find Out

asks students questions about some additional daily life situations, which encourages students to explore the world of science on their own.

TELL YOUR TEACHER

Read the following activities. Tell your teacher what right or wrong thing each child does.

- Ruchi and Kanka are both very fond of writing with ball pens. When the refill of Ruchi's pen is used up, she throws her pen and buys a new pen. Kanka never throws her pen. She buys a new refill, replaces the old one with it and uses the same pen again.
- Ankit loves Sunday mornings because that is the time when his father washes his car and he helps him. But today Ankit refused to wash his car with the running hose. He brought a bucket and a sponge and asked his father to use them instead of the hose.

FIND OUT

What is an embankment? Why is it made?

What are CNG, LPG and PNG? Where is each of them most commonly used?

Project

The Appiko Movement was a movement based on environmental conservation. It was led by Panduranga Hegde. Find out more about it and write a brief report. Submit it to your teacher. Take help from books, newspapers, magazines, the Internet, etc.

Experiment

Understanding soil erosion

- Take 3 empty coke bottles and paste them on a piece of plywood. The opening of the bottles should protrude a little out of the surface.
- Cut rectangular holes along side of the bottle. Fill the bottles with garden soil. Press hard so soil must be below the level of opening of the bottle.
- Leave the first bottle as it is. Cover the soil in the second bottle with dead leaves, bark chips, etc. Plant some seedlings in the third bottle.
- Take 3 more empty coke bottles. Cut them horizontally over the necks of each of the bottles on the board. Leave the board open for a few days.
- Cut three pieces of string each and tie them to the necks of the bottles. Make two holes opposite to each other in the bottom of the bottles.

Make sure that the plants in the third bottle are well developed. Run slowly equal amounts of water into each of the bottles. Take note of the water collecting in the cups.

What do you observe? Why does it happen?

Insight into SCIENCE Book 5

Project

gives students an interesting task in the application of the theory or principle taught in the chapter and aims at making students scientifically creative.

TELL YOUR TEACHER

Read the following activities and tell your teacher what right or wrong each child does.

- Apila is very happy today. She is on a class tour to the historical Fort. She is very excited to see the large monuments made of red sandstone. She wants to leave an impression of her visit. So, she takes out her hair clip and starts inscribing her name on the walls.
- Shaan wants to boil some water. So he takes a pan, fills it with water and puts it on a lit gas stove. Then he covers the pan with a lid.
- Parv's school is not very far from his house. His father daily insists on dropping him at his school by car, but Parv always refuses and goes on his bicycle.

FIND OUT

Which Indian city is also known as the 'Pink City'? Why is it called so?

What is the Moh's scale of hardness? What mineral is the hardest and what is the softest?

Project

- Collect pictures of ten world famous monuments like the Taj Mahal and the Red Fort. Paste them in your scrapbook. Also write about the main rocks used in their construction.
- Make a list of any ten items in your home or school that are made of different forms of rocks and

Activity Time

Making a fossil model

Steps

- Take a baking tray, a plastic sheet, some paste of plaster of Paris and a leaf.
- Spread the sheet over the tray in a way that its edges hang over the edges of the tray.
- Pour a thick paste of plaster of Paris into the tray and spread it evenly.
- Keep the leaf on the paste.
- After some time, pour some more paste and spread it.
- Leave the tray to let the paste harden for a day.
- Pull out the sheet to take out the rock.
- Hold the rock and break it carefully to locate the leaf.

Remove the leaf. You will see the impression of the leaf on the rock.

Activity Time

has an interesting experiment to help students to learn practically. It can be conducted using easily available resources.

Revision Exercise 1

(Based on chapters 1 to 7)

A. Tick (✓) the correct answer.

- Which vitamin deficiency causes night blindness? (a) vitamin A (b) vitamin B (c) vitamin C (d) vitamin D
- The muscles are attached to the bones by (a) tendons (b) ligaments (c) cartilage (d) none of these
- Which of the following is in the middle in a second-class lever? (a) fulcrum (b) load (c) effort (d) none of these
- A strawberry reproduces from (a) runners (b) leaves (c) spores (d) none of these
- Which part of your brain is involved when you are walking? (a) cerebellum (b) cerebrum (c) medulla (d) brainstem
- How many pairs of legs are there in the skull? (a) 600 (b) 400 (c) 22 (d) 14
- Which of the following animals plays dead if it sees no escape? (a) cobra (b) mongoose (c) armadillo (d) mountain goat
- Which of the following is not a communicable disease? (a) measles (b) mumps (c) diarrhoea (d) osteoporosis

B. Mark the true statements and 'F' for false ones.

- Things together move more tightly than a nail.
- For most nutrients, we need to take a great quantity of vitamins.
- Wildlife Protection Act was introduced in 1992.
- Adults need more protein than a young sportsman.
- City has more bones than an adult.

C. Fill in the blank choosing the correct word.

- The car together move in _____ direction/directions. (the same / opposite)
- NaCl is used to _____ carry information towards the cell body. (conducts / transmits)
- The _____ is the longest bone in the human body. (humerus / femur)
- The _____ is the place where pollen enters the flower. (stamen / pistil)
- Shadu _____ from the Tibetan _____ (came / arrived) (here / anywhere)

Revision Exercises

test students' knowledge of the topics taught. Every aspect of the subjects taught is covered.

Activity Bank

Section A (Based on chapters 1 to 4)

Experiment

Do an experiment to check that the root grows downwards and the shoot grows upwards.

Steps

- Take a pot.
- Plant a sapling in it.
- Place the pot in an open space.
- After 2-3 days, turn the pot upside down.
- Every day, make the pot stand and water the plant.
- When the soil in the pot has soaked the water, lay it down again.
- After 2-3 days, you will see that the stem of the plant bends and grows upwards. If you take out the plant, you will see that the main root of the plant bends downwards.

Word Search

In the wordsearch, the names of 12 animals are hidden. Find and encircle them.

Find Out

Taking help from books, magazines, newspapers, the Internet, etc. Find the names of:

- ten endangered animal species
- ten extinct animal species

Project

Visit a gymnasium in your locality. Observe how the people who exercise there, their muscles. Ask them about their diet and lifestyle. Write your findings in the form of a report. Write your name and class on the report and submit the report to your teacher.

Group Debate

Make groups of four students each. Each group will have a debate on the following topic: "The nervous system is most important among all the organ systems." In each group, two students will speak in favour of the topic and the other two will speak against it.

Activity Bank

has a myriad of activities aimed at developing students' scientific creativity and inventiveness.

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