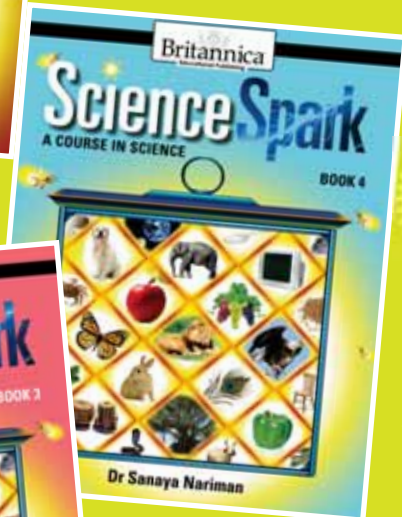
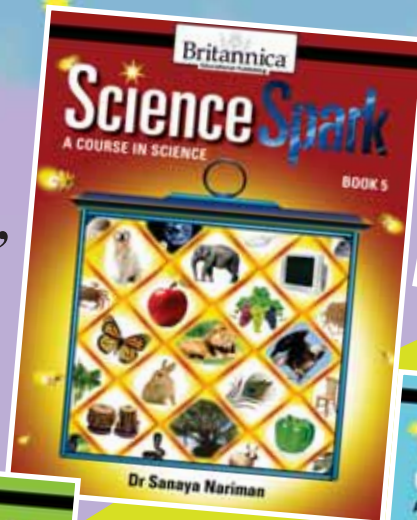




ScienceSpark

A COURSE IN SCIENCE

Encyclopædia Britannica, with its indisputable reputation as one of the world's most reliable reference authorities for more than two centuries, presents ScienceSpark, a series of eight science textbooks for Classes 1 to 8, for the school curriculum.



Igniting minds



Igniting minds

ScienceSpark 1 to 5 strengthens the scientific concepts taught through ScienceSpark 6 to 8 conforming to the vision of the National Curriculum Framework, 2005 and is designed according to the new NCERT Upper Primary syllabus, 2005. Also, the series

Stories and 'Let's talk' make learning interesting.

A day at a farmhouse

Rani and Raju went to visit Uncle Raman's farm. Look at what they did there.



Aunt Rekha is milking the cow. Rani is feeding the hen. Raju is feeding the sheep. The horse is carrying bags. Arif Bhai is ploughing the field. Uncle Raman is sowing seeds to grow vegetables. Uncle and Aunt also have two pets - Pip and Polky.

What do you think Pip the dog is doing? He is guarding the farmhouse.

Let's talk

Aunt Rekha has kept Polky the parrot in a cage. Do you think Polky likes to stay in the cage? Talk about it.

Book-1



Sample tests recapitulate and reinforce concepts.

Sample Test 1

(Maximum Marks: 25)

- Answer the following questions.
 - Which plants live for many years? Give two examples. (2X2)
 - What are spices? Why are they added to food?
 - Which animals are called extinct animals? Name two extinct animals.
 - Why is skeleton important for our body?
 - Write four ways to keep our teeth strong and healthy.
- Fill in the correct words to complete the sentences.
 - _____ helps the tree to stand upright. (2X2) (trunk/branch)
 - The skin of dead buffalo is used to make _____. (2X2) (wood/leather)
 - The _____ is a wild animal. (2X2) (lion/crocodile)
 - The place where two bones join together is called a _____. (2X2) (joint/trough)
- Write T for true and F for false.
 - Acacia plant gives us gum. (2X2) (correct/incorrect)
 - Lungs pump blood all over the body.
 - Lizards help in keeping the forest clean.
 - We keep sheep in a stable.
 - There are about 600 muscles in our body.
- Give one word for the following.
 - Plants that live for a few years _____ (2X2)
 - Animals that live with us in our homes _____
 - The food that helps us to grow big and strong _____
 - A part of our body which helps us to think _____
 - They protect the soft inner parts of our body _____

Book-2

Higher Order Thinking Skills (HOTS) encourage situational analysis.

Interesting projects develop Investigative skills.

Project

- Take a chart paper and cut out five circles the size of a bangle from it.
- Write the names of any five internal parts of the body on the cut circles.
- Join three newspapers and make your friend lie on it.
- Now take a sketch pen and trace the outline of your friend.
- Take the circles of different body parts and stick them at their correct places inside the sketch of the body.



Book-2

is graded to the cognitive levels of the learners.

is presented as a live and growing body of knowledge rather than an information overload.

stresses on interactive approach through activities, projects, surveys, and games.

includes poems, stories, and a judicious mix of narratives and factual accounts.

implements CBSE guidelines through Higher Order Thinking Skills (HOTS) sections.

3. Name the action for the following pictures. Use the words given in the box.



squeeze push pull stretch

- Force can make things go _____.
- Force can change the _____ of the dough.
- Force can change the direction of a tennis ball.
- Force can _____ down a moving object.
- Force can _____ objects.

Let's think
Which force is used when we fill water in a package during flood. Which force is used to fill water in a balloon?

HOTS

- Which force is A using? Which force is B using? Force applied is in the opposite direction.
- Which force is A using? Which force is B using? The force applied is in the opposite/same direction.

Book-3

Fig 8.10 Ball and socket joint

Hinge joint It allows movement in one direction only. Observe a hinge of a door or your pencil box. It moves in one direction. Rotate your arm and leg. Bend your knees and elbow. Which joints are you able to move in one direction?

Fig 8.11 Hinge joint in the elbow

Pivot joint It allows rotating movement. It is present between the first and the second vertebrae directly under the skull. It allows you turn your head from side to side.

Fig 8.12 Pivot joint

Gliding joint A gliding joint allows one bone to slide over another. This joint is present in the small bones of wrist and feet of sideways.

Fig 8.13 Gliding joint

Activity 2
Perform each of the activity listed below and determine the type of joint or joints involved in performing each activity.

- Move your arm in a circle
- Push open a door
- Lift a notebook from a table
- Wave your hand
- Clasp your fist
- Kneel down
- Move your head from side to side

Infobits
There are over 230 muscles and some movable joints in our body.

Connective tissue
Besides bones there are three types of connective tissue in the skeletal system. These are tendons, ligaments, and cartilage. Tendons attach muscles to the bones. Ligaments are strong and elastic bands of fibrous tissue that join bones together. Cartilage is present at the ends of bones. It is like a cushion which acts like a shock absorber and prevents rubbing of bones at joints.

Movement in human body
Body movements are the results of bones and muscles working together. Bones cannot move on their own. Only muscles have the ability to move. They work in

Book-6

Infobits provide interesting facts.

Simple line diagrams for easy understanding

Book-7

Infobit
The art of spinning wool was first discovered about 4000 B.C. in the region of the Mediterranean Sea. The first wool factory in England was established in 1772. The first machine for spinning wool was invented by James Hargreaves in 1769. He called it the Spinning Jenny. It was a simple machine that could spin many threads at once. It was a great invention for the wool textile industry.

Health hazards associated with wool production
People working in the wool industry have to lift sheep and bend down to hold them during the shearing process. The work is tiring and causes back pain, skeletal and muscular injuries. Male sheep called wethers have been used as guard dogs for sheep. They are also used as a source of wool. They are also used in the wool textile industry. Some workers also develop respiratory diseases like asthma as they constantly breathe in dust and fine wool fibres.

Infobit
The Silk Route is a commercial route that has been used since ancient times. It was a network of trade routes that connected the East and the West. It was a major trade route for silk, spices, and other goods. The Silk Route was a vital link between the East and the West.

Characteristics of silk

- It is a comfortable fabric
- It is absorbent
- It is used in summer
- It is warm in winter
- It can be dyed easily
- It is strong
- It is the strongest of all natural fibres

Activity 2
Observe a piece of silk fabric. Note its texture and appearance. Try to identify the source of silk. Write down your observations.



Activity 6
Collect the following things and list them in the table given below as transparent, translucent, or opaque material.

Transparent	Translucent	Opaque

Solubility
Let us perform an activity to understand this property.

Activity 7
Take some solid materials like salt, sugar, sand, pencil shavings, and chalk in small quantities. Now take five glasses of water and dissolve each material in each. Use a spoon to mix the contents of each glass.

Activity 8
Take liquids like mustard oil, milk, kerosene oil, ink, vinegar, and orange juice. Now take separate glasses of water and dissolve each one separately. Keep them aside for some time.

Write down the names of the liquids which dissolve in water and those which do not in the table given below.

Dissolve	Does not dissolve

You will notice that some liquids like orange juice dissolve in water. These liquids are called soluble. The liquids that do not dissolve in water are said to be insoluble.

Notation
Let us perform the following activity to understand this property.

Book-6

Activity for learning by doing develops observation, data collection, and inferential skills.

Writing minds

'Learn about' gives a bird's-eye-view of the chapter.

2 Microorganisms—Friends and Foes

Microorganisms, also called microbes, are very small organisms that we cannot see with our naked eye. We need a microscope to see these tiny organisms.

Microbes inhabit almost every place you can think of, from 20 miles beneath the Earth's surface to 20 miles overhead. They are found in boiling hot springs every time you walk on the ground. They live in the soil, on rocks, inside roots, in corrupting pits and toxic waste, and all over the Earth's surface. They live on and inside our body.

Microbes are found in abundance in many aquatic environments, such as streams, ponds, lakes, rivers, swamps, lakes, reservoirs, and seas. Microbes, like other organisms, require water to live and reproduce.

Microbes provide microbes with food. Actually animals derive a lot of their energy from microbes. That is why they are called "biomass" or microbes.

Learn about!

- Bacteria
- Fungi
- Algae
- Protozoa
- Virus
- Friendly and useful microorganisms
- Harmful microorganisms
- Diseases caused by microorganisms in animals and plants

Activity 1
Take some water from a public tap. Put a drop of water on a slide and observe it under the microscope. Do you observe any microorganisms? Write down your observations. Make a rough sketch of the organisms observed.

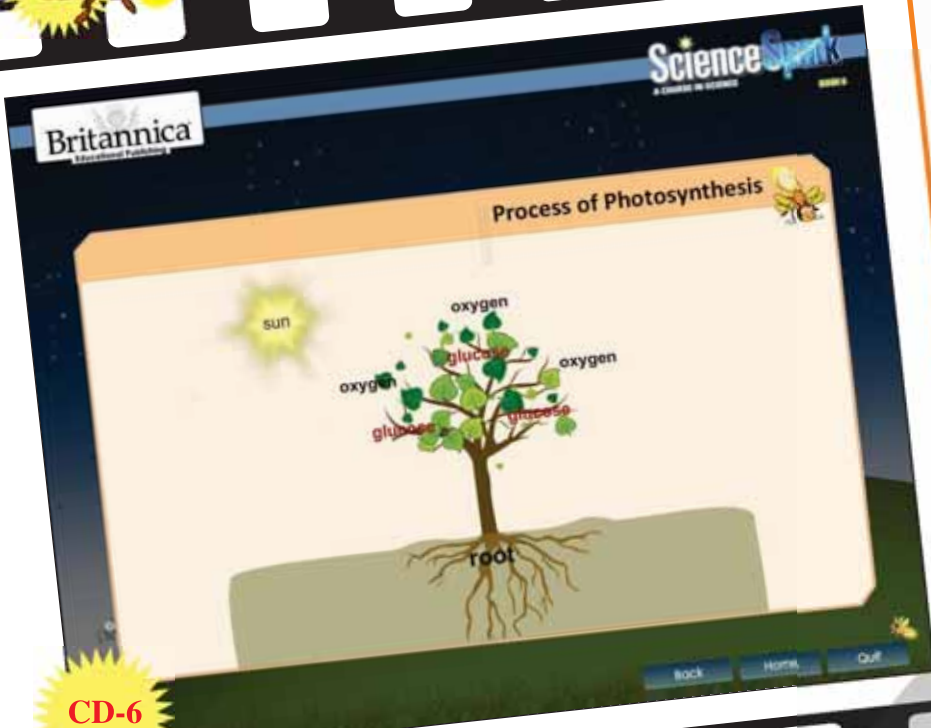
Book-8

Value adds

- Workbook format for Books 1, 2, and 3 lightens the load on the learners.
- The series includes experiments, animations, interactive exercises, and additional information.
- Real-life images and illustrations provide visual aid to the concepts.
- Indicators show segments for continuous and comprehensive evaluation (CCE).



Also available with each book, a CD that supplements the content through visuals



CD-6



Book-6



Teacher's support through teacher's manual for each level carrying tips for continuous and comprehensive evaluation (CCE).

Igniting minds

ScienceSpark has been designed to ignite young minds so as to develop in learners scientific attitudes and skills, with a propensity to naturally apply them to all aspects of life.

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