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Fully Revised

Shikha Gupta
Shikha Nautiyal

SCIENCE OLYMPIAD

National Science Olympiad



Strictly according
to the latest
syllabus of Science
Olympiad

Plants

Animals

Safety Rules

Weather
and Sky

Air and Water

Analogy

Odd One
Out

Patterns

The
Gen X
Series

A SUCCESS PACKAGE FOR ASPIRANTS OF SCIENCE OLYMPIAD

NATIONAL SCIENCE OLYMPIAD

Exploring the World of Science

Class 1

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Shikha Nautiyal



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Publisher's Note

V&S Publishers, after the grand success of a number of Academic and General books, is pleased to bring out a series of *Science Olympiad books* under *The Gen X series – generating Xcellence in generation X* – which has been designed to focus the problems faced by students. In all books the concepts have been explained clearly through various examples, illustrations and diagrams wherever required. Each book has been developed to meet specific needs of students who aspire to get distinctions in the field of science and want to become Olympiad champs at national level.

To go through the exams successfully, the students need to do thorough study of topics covered in the *Olympiad syllabus and the topics covered in the school syllabus as well*. The Olympiads not only tests subjective knowledge but Reasoning skills of the students also. So students are required to comprehend the depth of concepts. The Olympiads check efficiency of candidates in problem solving. These exams are conducted in different stages at regional, national, and international levels. At each stage of the exam, the candidate should be fully prepared to go through the exam. Therefore, this test requires careful attention towards comprehension of concepts, thorough practice, and application of rules.

While other books in market focus selectively on questions or theory; V&S Science Olympiad books are rather comprehensive. Each book has been divided into five sections namely *Science, Logical Reasoning, Achievers section, Subjective section, and Model Papers*. The theory has been explained through solved examples. To enhance problem solving skills of candidates, *Multiple Choice Questions (MCQs)* with detailed solutions are given at the end of each chapter. Two *Mock Test Papers* have been included to understand the pattern of exam. A CD containing Study Chart for systematic preparation, Tips & Tricks to crack Science Olympiad, Pattern of exam, and links of Previous Years Papers is accompanied with this book. The books are also useful for various other competitive exams such as NTSE, NSTSE, and SLSTSE as well.

We wish you all success in the Olympiad and a very bright future in the field of science.
All the best

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Section 1: Science



Living and Non-living Things

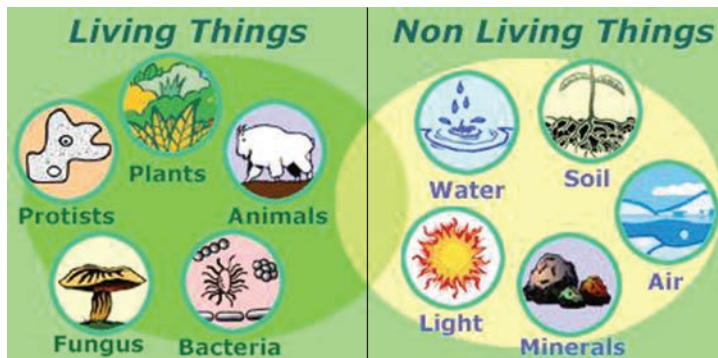
Learning milestones:

- Living and non-living things
- Characteristics of living things
- Natural and man-made things

Living and Non-living Things

We see many things around us. Some of them have life. They are called **living things**. Some of the things do not have life. They are called **non-living things**.

Thus, things can be classified as living or non-living on the basis of the activities they perform and properties they possess.



Characteristics of Living Thing

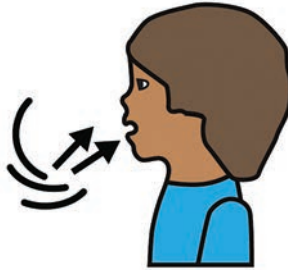
Living things possess some properties which help us to differentiate them from the non-living things. These characteristics are as follows:

1. Living things can move from one place to another as shown in the picture.



2. Living things can breathe as shown in the picture.

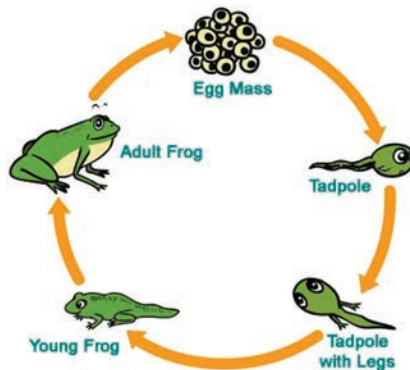
Take deep breath



3. Living things need food and water to live.



4. Living things grow constantly. The increase in the size of body is called growth.



5. Living things give birth to babies. All living organisms have the ability to produce their offspring.



6. Living things can feel and respond to the things around them, such as light, temperature, water, gravity and chemical substances.

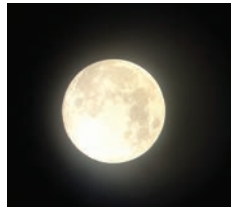
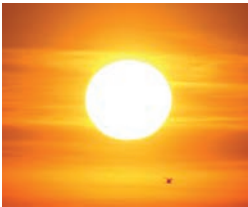
Test Your Skills

See the table below and tick (√) in the boxes for correct activity and cross (x) for incorrect activity to find out whether these things are living or non-living.

S.No.	Things	Moves	Grows	Feeds	Senses	Respires	Excretes	Reproduces
1.	Fish							
2.	Insect							
3.	Car							
4.	Fire							
5.	River							

Natural and Man-made Things

Non-living things such as the sun, moon, rocks, wood and water that are naturally present in the surroundings are called natural things.



Non-living things such as book, train, house, clothes, pencil, paper that are made by man are called man-made things.



Multiple Choice Questions

1. Which of the following characteristic(s) belong to plants and animals both:

- i. Need food and water to stay alive
- ii. Can respond to environmental change
- iii. Can move from one place to other by themselves
- iv. Reproduce

- A. i, ii and iv only
- B. i and ii only
- C. iii only
- D. i, ii and iii only

2. All non-living things have following characteristic(s):

- A. They need food to grow
- B. They can respond to changes around them
- C. They have offsprings
- D. They might have been made from things that were once alive

3. Which of the following thing(s) can grow?



- A. i and ii
- B. i and iii
- C. iii and iv
- D. i and iv

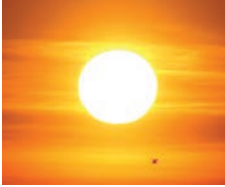



4. Which of the following group of things is obtained from living things?

- A. Bark, hair, paper, tile
- B. Bone, glass, sap, wood
- C. Cotton, clay, leaf, milk
- D. Cane, leather, silk, wool

5. Which of the following statements is not correct?

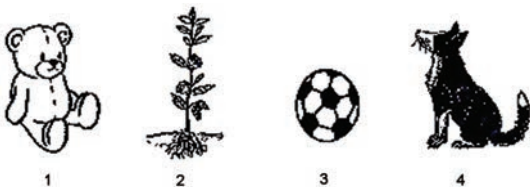
- A. Suchit: Non-living things do not grow
- B. Shubhi: Non-living things cannot feel
- C. Ananya: Non-living things do not breathe
- D. Akash: Non-living things produce their offspring

6. Match column I with column II and choose the correct option:

Column I	Column II
a. I am a man-made thing	i. 
b. I am a natural thing	ii. 
c. I need oxygen to live	iii. 
d. I need carbon dioxide to grow	iv. 

- A. a-ii, b-i, c-iv, d-iii
- B. a-i, b-ii, c-iii, d-iv
- C. a-iii, b-i, c-iv, d-ii
- D. a-iv, b-i, c-ii, d-iii

7. Study the following diagrams.



Which of the following need air, food and water to stay alive?

- A. 1 and 4 only
- B. 2 and 4 only
- C. 2 and 3 only
- D. 3 and 4 only

8. Sanchit observes an unknown thing that moves, grows and reproduces. What did he conclude about it?

- A. It is a man-made thing
- B. It is a non-living thing
- C. It is alive and a living thing
- D. It is a plant

9. Which of the following groups contains only non-living things in an environment?

A.			
B.			
C.			
D.			

10. Which of the following statements describes that animals and plants respire?

- 1. Animals take in carbon dioxide and give out oxygen.
 - 2. Animals take in oxygen and give out carbon dioxide.
 - 3. Plants take in carbon dioxide and give out oxygen.
 - 4. Plants take in oxygen and give out carbon dioxide.
- A. 1 and 3 only
 - B. 1 and 4 only
 - C. 2 and 3 only
 - D. 2 and 4 only

11. Identify the thing that does not need food and water.

A.



B.



C.



D.



12. Look at the car below.



The car shown above can move from one place to another, but still it is a non-living thing because it _____.

- | | |
|-------------------------|----------|
| A. Cannot grow | B. feels |
| C. Needs air to survive | D. food |

13. Somya picked up a dry leaf. Her mother said it was a non-living thing because it _____.

- | | |
|---------------------------|-----------------|
| 1. Cannot move on its own | |
| 2. Cannot grow anymore | |
| 3. Cannot breath anymore | |
| A. 1 and 2 only | B. 1 and 3 only |
| C. 1, 2 and 3 only | D. 2 and 3 only |

14. Which one of the following groups is classified correctly?

Group	Living Things	Non-Living Things
A	Cow	Calf
B	Wooden table	Chair
C	Coconut tree	Plucked fruit
D	Dried leaf	Vase

15. Look at the following pictures and choose the correct option that correlates the following set of images:



- A. Can give birth to their young ones
- B. Living things eat only grass
- C. Need air, food and water
- D. Can respond to changes around them

Answer Key

1. A 2. D 3. C 4. C 5. D 6. A 7. B 8. C 9. C
10. C 11. A 12. A 13. D 14. C 15. A



Learning milestones:

- Types of plants
- Parts of a plant
- Where do plants come from?
- A source of food

Types of Plants

We see many types of plants around us. Depending on their size, plants are of four types: trees, shrubs, herbs, and creepers and climbers.

Trees

Trees are big and tall plants with strong, brown stems called trunk. They have a woody bark and many branches. They live for many years.



Shrubs

Shrubs are smaller than trees. They have thick stems, but they are not as thick as those of trees. Shrubs are also called bushes. They are generally low in height.

