LIVING AND NON-LIVING

18

From among the things found around us, you consider some as living and the rest as non-living. You all know that a dog is a living being while rock is non-living.

Take a few minutes to make a list of all the animals, plants and other things around you. Longer the list, the better it would be.

Divide these into two groups, living and non-living. (1)

Identifying living beings

Make a list of all the characteristics of living beings on the basis of which you categorised them as living.

Now look at your list of characteristics again and place a tick mark (√) next to those properties which you have already studied in previous chapters. (2)

Is it necessary for each and every characteristic to be present in a living being for it to be called living or can something be called living even if it has only a few of these characteristics? Think over this question carefully.

Would you call plants animate or inanimate? (3)

Remember, they cannot move from place to place.

Is it still proper to call them animate? Give reasons for your answer. (4)

Think about the seeds of chickpeas, kidney beans, rice, and wheat.

Which of the characteristics of living beings do these seeds have?

(a) Do they eat?

(b) Do they grow?

(c) Can they move by themselves?

(d) Do they breathe?

(e) Do they reproduce? (5)

On the basis of answers to these questions, should the dry seeds be thought of as living or not? (6)

You know that a plant grows only when a seed is sown. This plant in turn, produces more seeds.

Would you still hesitate in accepting a dried seed to be living? If yes, why? (7)

Compare dried seeds to boiled seeds. Should boiled seeds be called animate? Explain. (8)

Do children grow continuously after birth? (9)

Do adults grow continuously too? (10)

Do you remember if there has been any increase in the height of your parents during the last 3-4 years. (11)

During this time, approximately how much has your own height increased? (12)

Do trees and plants also stop growing after reaching a certain height? (13)

Just because humans stop growing after a certain age, is it incorrect to call them living? Answer stating your reasons. (14)

You must have noticed that in summer and winter, frogs are rarely seen while during monsoons, they are plentiful. During summer and winter, frogs go underground. They neither eat nor move about. Before the rains, you can dig up the ground and have a look at them.

Do you consider these frogs to be living? Give reasons for your answer. (15)

You may have heard of religious men (*sadhus*) who meditate in a special place underground [*samadhi*]. As long as they remain there, they do not eat, drink or move around.

Do you think that in such a situation, these religious men are living? Why? (16)

In the light of above examples, can you say that a thing can be called living even if it does not possess all the living characteristics simultaneously? (17)

Would it be right to conclude that a thing is non-living by looking at just one characteristic? Think and write. (18)

Is it necessary to study all the characteristics of a thing (like a dry seed) at different times and in different conditions before deciding whether it is living or not? State your reasons along with the answer. (19)

A few exercises

Which of the following statements are true and which are false. Answer with reason.

(a) Living beings can always move from place to place by themselves.

(b) Insect-infested wheat is non-living.

(c) Broken eggs are non-living while eggs in the nest are animate.

(d) Rose grafts are not non-living.

(e) Cooked rice is living.

(f) The fungus which grows on pickles is non-living.

(g) The flowers on trees are not living. (20)

Is there a relationship between living and non-living things?

You must have either made manure yourself or may have seen it being made. Briefly explain how this is made. (21)

In order to increase the yield, farmers usually sow sun hemp in their fields. After it grows, they plough the fields. A few months after ploughing, where do these plants disappear? (22)

In the same way, what happens to the carcass of living after they die? (23)

What would happen to the body of a dead mouse or some other animal if it is buried in the ground? (24)

From these examples, what relationship do you notice between living and non-living things? (25)

You know that fertiliser is necessary for a healthy crop. What could be the relationship of the manure to the body of the plant? (26)

Why do we eat food? Will growth of our bodies stop without food? (27)

What do you think is the role of food in the growth of our bodies? (28)

Fertiliser and food are both non-living substances. However, from them growth and development of certain parts of plants and animals take place.

Think about the following statement:

'All living beings die after some time and turn into non-living substances. non-living substances are used for the growth and development of living beings.'

Think & answer

A train engine -

(a) eats food (in the form of coal and water)

(b) moves

(c) breathes in and out (when the pistons move forwards and backwards)

(d) grows in length (when more bogies are attached).

Would you call it living? Give reasons to support your answer. (29)

In terms of living and non-living, what is the difference between a buffalo and an engine? (30)