

## Chapter 5: Seeds and Seeds

### Discuss

#### Question 1:

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What things are soaked before cooking in your house? Why?

#### Answer:

Following things are soaked before cooking in my house—

*Chana, Rajma, Moong, Pulses, Soyabean.*

These things are usually stored after drying. Soaking them makes them softer and easier to cook. Hence, they are soaked overnight.

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#### Question 2:

What things do you eat after sprouting? How are they sprouted? How much time does it take?

#### Answer:

We commonly eat *Chana* and *Moong* after sprouting.

For sprouting these seeds, they are first soaked in water overnight and then the next day, they are wrapped in a moist cotton cloth to get enough air and moisture for sprouting.

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#### Question 3:

Has the doctor or someone you know ever told you to eat sprouts? Why?

**Answer:**

Yes, the doctor and my mother always advise me to eat sprouts because they are more nutritious than other food items. They are rich in minerals like potassium, calcium, and magnesium.

## Do This and Find Out

**Question 1:**

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Do you remember that in Class IV you did an activity with seeds? Now try another one.

- (i) Take some *chana* and three bowls.
- (ii) Put five *chana* in the first bowl and fill it up with water.
- (iii) Put a damp piece of cloth or some cotton wool in the second bowl. Now keep the same number of *chanas* in it. Make sure that the cotton wool or cloth remains wet.
- (iv) Put the same number of *chanas* in the third bowl. Do not put anything else in it. Cover all the three bowls. Observe after two days and note the changes in the bowls.

**Answer:**

	Bowl 1	Bowl 2	Bowl 3
Are the seeds getting air	No	Yes	Yes
Are the seeds getting water?	Yes	Yes	No
What changes did you see?	<i>Chanas</i> swelled up as they absorbed the water.	<i>Chanas</i> sprouted.	No change was observed.
Have the seeds sprouted?	No	Yes	No

## Tell and Write

### Question 1:

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In which bowl did the seeds sprout? What difference did you see between this bowl and the other bowls?

### Answer:

The seeds sprouted only in Bowl 2 because they received sufficient air and water for sprouting.

The seeds in Bowl 1 just got water, and they swelled up. As Bowl 1 was filled with only water, the seeds didn't receive the required air for sprouting.

The seeds in Bowl 3 neither got air nor water. So, no change in the seeds was observed.

Hence, it can be concluded that only Bowl 2 had the proper conditions for the seeds to sprout, whereas the other two bowls didn't.

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### Question 2:

Why did Gopal's mother tie the *chana* in a damp cloth?

### Answer:

Gopal's mother tied the *chana* in a damp cloth because it gives the required amount of moisture and air to the seeds for sprouting. Immersing them in water does not allow air to reach the seeds.

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### Question 3:

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When you split the whole *masoor*, you get me—*masoor dal*. But then you cannot sprout me! Can you think why?

**Answer:**

Yes, we cannot sprout the seeds which have split because they lose their capacity to sprout after breaking.

## Project: Plant your seeds

Take a clay pot or a tin can with a wide mouth. Make a small hole at the bottom of the can. Fill your can with soil. Put four or five seeds of the same kind in the soil and press them gently. Different groups can plant different kinds of seeds, such as mustard (*sarson*), fenugreek (*methi*), sesame (*til*) or coriander (*dhania*). (Page 44)

### Write

**Question 1:**

Name of the seed: .....

The date on which you planted them: .....

The day you observe something coming out of the soil, start filling the table:

Date	Height of the plant (in cm)	Number of leaves seen	Any other changes

**Answer:**

Name of the seed: Fenugreek (*methi*)

The date on which you planted them: 28th October 2021

Date	Height of the plant (in cm)	Number of leaves seen	Any other changes
4 <sup>th</sup> November 2021	1 cm	1	The seeds germinated
5 <sup>th</sup> November 2021	1.5 cm	2	-
6 <sup>th</sup> November 2021	2 cm	3	Stem is longer
7 <sup>th</sup> November 2021	4.5 cm	5	Stem has started thickening

**Find Out**

**Question 1:**

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How long did it take for the plant to come out from the soil?

**Answer:**

The plant took around 5-6 days to come out of the soil.

**Question 2:**

What was the difference in the height of the plant on the first and second days?

**Answer:**

The height of the plant was half centimetre more on the second day than the first day.

**Question 3:**

On which day did the height of the plant increase the most?

**Answer:**

On the fourth day.

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**Question 4:**

Did new leaves come out of the plant every day?

**Answer:**

Yes, new leaves came out of the plant every day.

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**Question 5:**

Was there any change in the stem of the plant?

**Answer:**

Yes, the stem became thicker and firmer every day.

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Discuss

**Question 1:** (Page 45)

Which seeds took the greatest number of days for the stem to come out of the soil?

**Answer:**

Seeds of sesame (*til*) took the greatest number of days for the stem to come out.

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**Question 2:**

Which seeds took the least days to come out of the soil?

**Answer:**

Seeds of mustard (*sarson*) took the least days to come out of the soil.

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**Question 3:**

Which seeds did not grow at all? Why?

**Answer:**

The seeds which did not receive sufficient air and water did not grow at all.

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**Question 4:**

Did anyone's plant dry up or turn yellow? Why did this happen?

**Answer:**

Yes, some of the plants dried up due to lack of air or moisture.

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**Question 5:**

What would happen if the plants do not get water?

**Answer:**

The plants would dry up due to a lack of vitamins and minerals that are provided by water.

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**Question 1:**

What is inside the seed?

**Answer:**

A seed contains cotyledons and an embryo inside it.

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### Question 2:

How does a big plant grow from a tiny seed?

#### Answer:

The seed germinates to form the root system and shoot system. Until the root system establishes, the baby plant takes nutrients from the cotyledons. Once the root system develops fully, the baby plant starts to absorb nutrients and water from the soil which moves to different parts of the plant. This is how a tiny seed grows into a big plant with the help of nutrients, water, and air.

## Think and Imagine

### Question 1:

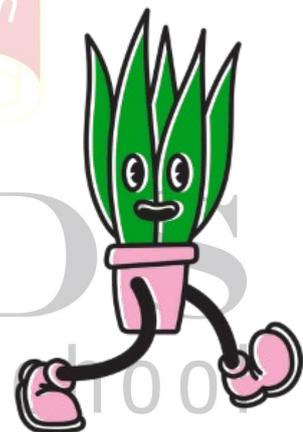
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What would happen if plants could walk? Draw a picture.

#### Answer:

If plants could walk, they would choose their own space for growing up, and they would select a place with a lot of sunshine and air. Secondly, they would not require deep roots as they would move according to water availability and absorb nutrients as per their own choice.

If plants had legs, then maybe it would look like the adjacent picture.



## Find Out

### Question 1:

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Do some plants grow without seeds?

### Answer:

Yes, some plants like *Bryophyllum*, potato, and rose grow without seeds.

## So Many Seeds!

### Question 1:

(Page 46)

How many types of seeds can you collect? Where will you find them? Each of you should try to collect as many different types of seeds as you can. After that, put all the seed collections together. Now observe these seeds carefully—their shapes, sizes, colour, textures (smooth or rough). Make a seed chart to put up in the class. You can start with a table like this.

Name of the seed	Colour	Shape (draw)	Texture
Rajma	Reddish brown		Smooth



**Answer:**

Name of the seed	Colour	Shape (draw)	Texture
<i>Rajma</i>	Brown		Smooth
<i>Moong</i>	Green		Smooth
Papaya	Black		Smooth
Mango	Yellowish-white		Rough
Chickpea	Brown		Rough
Lady's finger	White		Rough
Watermelon	Black		Smooth



Peas	Green		Smooth
Mustard	Black		Smooth
Cumin ( <i>jeera</i> )	Brown		Rough
Fenugreek ( <i>methi</i> )	Yellow		Rough
Aniseed ( <i>saunf</i> )	Green		Rough

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### Think

#### Question 1:

(Page no.47)

Did you keep aniseed (*saunf*) and cumin (*jeera*) in your list?

#### Answer:

Yes, I kept aniseed and cumin in my list.

**Question 2:**

Which was the smallest seed, and which was the biggest seed in your collection?

**Answer:**

In my list, mustard was the smallest, and mango was the biggest seed.

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**Make lists of**

**Question 1:**

(Page 47)

Seeds that are used as spices in your home.

**Answer:**

Fenugreek, cumin, mustard, fennel.

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**Question 2:**

Seeds of vegetables.

**Answer:**

Peas, lady's finger, tomato, brinjal.

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**Question 3:**

Seeds of fruits.

**Answer:**

Mango, watermelon, orange, litchi.

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**Question 4:**

Light seeds (check by blowing them).

**Answer:**

Aniseed (*saunf*) and cumin (*jeera*).

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**Question 5:**

Seeds which are flat.

**Answer:**

Watermelon, sesame, cumin.

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**Question 6:**

Make more groups. How many groups of seeds did you make?

**Answer:**

I could make seven following groups of seeds—

- (i) Edible seeds
  - (ii) Oil-producing seeds
  - (iii) Seeds which can be used as spices
  - (iv) Seeds that are light in weight and can float on water.
  - (v) Heavy seeds which sink in water
  - (vi) Tiny seeds
  - (vii) Large seeds
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**Question 7:**

Do you know any games that you can play with seeds? Discuss with your friends.

**Answer:**

The following games can be played using seeds—

- (i) There is an old game where cowrie shells were used to play games among 8 players similar to ludo. Here, cowrie shells can be replaced by any hard seed like that of litchi.
- ii) Similarly, *gutte* can be played using the seeds of tamarind.

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## Wandering Seeds

**Question 1:**

(Page no.48)

Have you ever seen any seed that can fly?

**Answer:**

Yes, I have seen *Madar* seeds floating in the air.

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**Question 2:**

What is it called in your area?

**Answer:**

It is called *Aankra* in my area.

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**Question 3:**

Look at your seed collection. Guess how many of those could have travelled by flying?

**Answer:**

I think aniseed can fly as it is quite light.

**Question 4:**

Did you get any new ideas from these seeds?

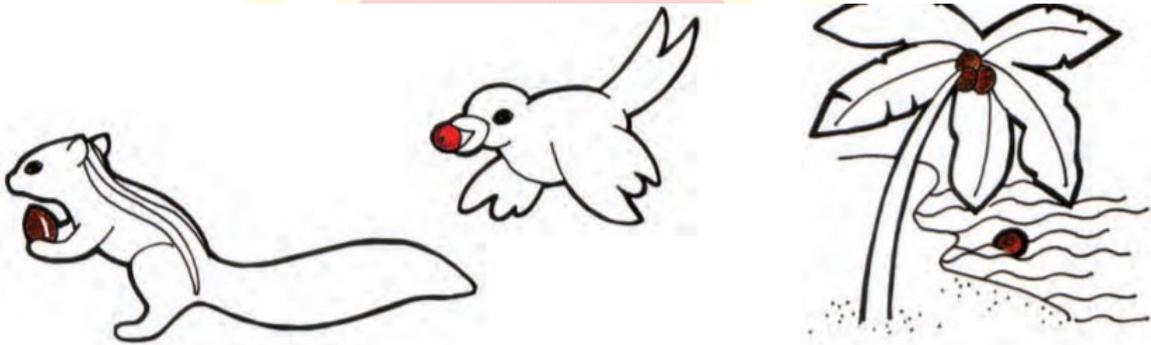
**Answer:**

Yes, these seeds can be used to make decorations and *rangolis*.

**Question 5:**

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Look at the pictures given below and guess how the seeds travel and reach different places.



**Answer:**

Seeds are carried by different living and non-living agents of our surroundings. The agents which help in the dispersal of seeds are called agents of seed dispersal.

- (i) The first picture shows that the seed is carried by a squirrel i.e., an animal.
- (ii) The second picture shows that the seed is carried by a bird.
- (iii) The third picture shows that the seed is carried by water, a non-living agent of the environment.

**Question 6:**

Some plants spread their seeds over long distances. When the soyabean pods are ripe, they burst, and the seeds are thrown out. Have you ever heard their sound?

**Answer:**

No, I never heard this sound.

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**Question 7:**

Think what would happen if seeds did not spread and remained at one place only?

**Answer:**

The following problems will occur if all the seeds remain in one place only—

- (i) Overcrowding of plants at one place.
  - (ii) Death of small plants due to competition for space, food, and sunlight.
  - (iii) Limitation of plant species to particular areas only.
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**Question 8:**

Make a list of the different ways by which seeds are spread.

**Answer:**

Both living and non-living agents help in seeds dispersal. They are as follows—

- (i) Water
- (ii) Air
- (iii) Birds
- (iv) Animals
- (v) Humans

## Who came from where

### Question 1:

(Page 50)

What all was grown in India long ago? Were mangoes and bananas grown here? What came from other countries? Imagine food without potatoes or tomatoes!

### Answer:

Different crops like tea, mango, orange, radish, *methi*, spinach were grown in India.

The following crops came from the other countries to India and are now grown here—

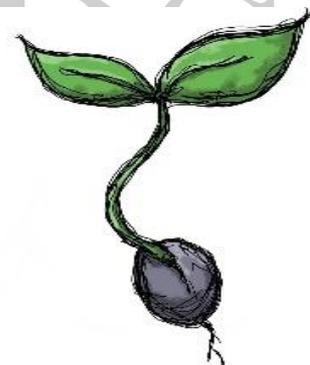
- (i) Tomato, potato, and green chilly from South America.
- (ii) Cabbage from Europe.
- (iii) Pea, coffee bean, and lady's finger from Africa.

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## What have we Learnt

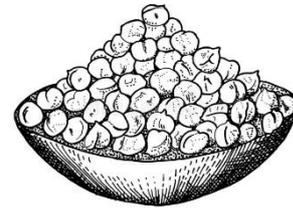
### Question 1:

Reena has drawn this picture of the seed sprouted by her. What do you think the seeds need for sprouting? Write in your own words. How would Reena's seeds look if they did not get the things needed? Show by drawing a picture.



**Answer:**

Seeds require air and water for sprouting. The seeds would have looked dry and hard if they had not sprouted due to the absence of air or water.



**Question 2:**

How do seeds spread to far off places? Write in your own words.

**Answer:**

Seeds are dispersed through different agents of seed dispersal.

- (i) Light-weighted seeds are dispersed through air. Example: Dandelion, Cottonweed
- (ii) Some seeds stick to animal fur and are carried from one place to another. Example: Xanthium
- (iii) Some seeds float on the water. Example: Coconut, Lotus.
- (iv) Some seeds are dispersed through birds and animals. Example: Guava, Mango.