

**Abdul in the Garden**

**1. The stick which was stuck in the ground fell very easily. It was difficult to pull out a small grass. Why?**

**Answer:**

The roots of grass were firmly holding the grass with soil. But whereas, the stick has no roots and hence it is difficult to pull out small grass.

**2. Do all plants have roots?**

**Answer:**

Yes, all plants have roots.

**3. Look at some plants and trees around you. Imagine how deep and spread out the roots of these are.**

**Answer:**

The roots of plants are two inches to ten inches deep, while the roots of a tree are five feet to ten feet deep. Also, roots of some trees go as deep as 50 feet into the earth.

**4. After three days, Abdul saw that one broken part of the pea plant had dried. Guess which part would have dried up? Why?**

**Answer:**

The leaves of the broken part of the pea plant would have dried up. This is because the broken part of the plant did not get water and minerals from the soil.

**5. Why do you think the neem tree did not fall despite the strong wind?**

**Answer:**

The roots of the neem tree are big, strong and deep which anchors the tree strongly. Hence, this is the reason why neem tree did not fall in spite of the strong wind.

**6. On putting water in the soil where the plants are growing, the dropping leaves become fresh again. How?**

**Answer:**

The water from the soil is transported to the leaves and other parts by the roots. Due to this dropping leaves becomes fresh again.

**7. What do you feel, do all plants need water?**

**Answer:**

Yes, all plants need water.

**8. Which of the plants around you need regular watering?**

**Answer:**

Flowering plants need regular watering.

**9. What will happen, if nobody gives water to these plants?**

**Answer:**

These plants would die if nobody gives water to them.

**10. Abdul realised that he never watered the huge neem tree. "Where did it get its water from?" he thought. Which of the plants around you do not need watering. Where do they get water from? Make two guesses.**

**Answer:**

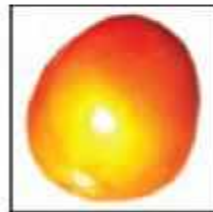
This is because the roots of the neem tree go deep into soil and suck water from the soil. Also, other big trees like mango, banyan, etc. do not require us to water them.

**11. Abdul wondered whether radish was a root. Why did he think so?**

**Answer:**

Abdul was right to have wondered that radish was a root. The small roots on the radish and the fact that radish grows under the ground must have made Abdul think that it is a root.

**12. Look at the pictures below and find out which of these vegetables are roots.**



**Answer:**

The following vegetables are roots.



**Carrot**



**Radish**



**Beetroot**



**Root cabbage**

**Abdul has more Questions**

**1. How deep must the roots of this plant be going?**

**Answer:**

The roots of this plant would be going up to at least 10 inches to 20 inches deep.

**2. How do the roots get water?**

**Answer:**

The roots get water from the moisture present in the wall.

**3. How big will this plant grow?**

**Answer:**

The plant can grow up considerably big.

**4. What will happen to the wall?**

**Answer:**

The wall will crack and finally break if the plant is not removed.

**5. Can you give the name of the plant in the picture?**

**Answer:**

The name of this plant is peepal plant.

**6. Have you ever seen a plant growing from a crack in a wall?**

**Answer:**

Yes, I have seen a plant that grew over the wall of my grandmother's house.

**7. Where was it?**

**Answer:**

That was the back wall of her house.



**8. Did you have any questions when you saw it?**

**Answer:**

Yes, I had one question in my mind when I saw it.

**9. What were some of your questions? Ask elders and find the answers. Find out the name of the plant you saw.**

**Answer:**

The question that I had in my mind was “From where the seed of that plant come on the wall”. The answer I got from the elders was “The seed of that very plant was carried by a bird to the wall”. The name of the plant I saw was banyan plant

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**1. Would someone have uprooted such a big tree or would it have fallen on its own?**

**Answer:**

Strong winds (natural disasters) could have uprooted that tree.

**2. How old would this tree be?**

**Answer:**

This tree would be no less than 50 years old.

**3. Abdul on seeing a tree surrounded by cemented ground, thought that how will it get rain water?**

**Answer:**

This tree gets water through its roots which go deep into the soil.



**Let us talk**

**1. Which are the oldest trees in your area? Find out from your elders how old the trees are?**

**Answer:**

There is a huge Banyan tree at the bank of a pond in my native village. People say it's more than 150 years old.

**2. Name animals who live on this tree.**

**Answer:**

Monkeys, squirrels, sparrows and crows live on that tree.

**3. Have you ever seen any big tree that had fallen down? What did you think when you saw it?**

**Answer:**

Yes, I have seen a big tree that had fallen down at the bank of the river because of flood. I was just

amazed to see the huge, thick and long roots of that tree.

**Unusual Roots**

**1. Have you swung from a banyan tree?**

**Answer:**

Yes, I always swing from a banyan tree with my friends whenever I visit my village

**2. What did you hold to swing?**

**Answer:**

I hold the rope like thick structures which is hanging from the branches of the tree.

**3. Have you seen any tree which has roots growing from its branches?**

**Answer:**

Yes, the big banyan tree in the near my home and the one in my village has several long roots like structures growing from its branches.

**Let us do this**

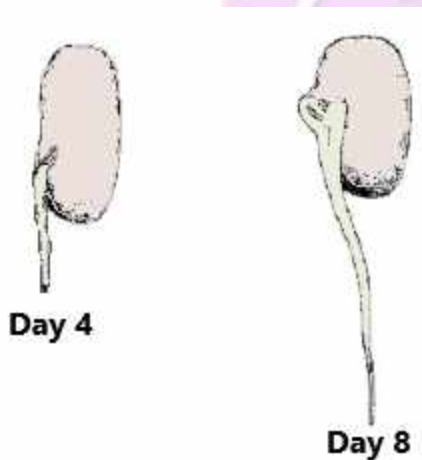
**1. Did you observe the seedlings come out of the seeds?**

**Answer:**

Yes, I observed that seedlings come out of the seeds.

**2. Draw the picture of the seedling as it looks on the fourth and the eighth day.**

**Answer:**



**Write in your notebook**

**1. What difference did you observe in the seeds after soaking? Compare with dry seeds and write.**

**Answer:**

I observed that the seeds after soaking get swollen and sprouted after two days while the dry seeds did

not get swollen or sprout.

**2. What do you think would happen if the cotton wool had been left dry?**

**Answer:**

If the cotton wool had been left dry then the seeds will not sprout.

**3. In which direction did the roots grow? And the stem?**

**Answer:**

The roots grew in the downward direction and the stem grew in the upward direction.

**4. How big did the plant grow in the cotton wool?**

**Answer:**

The plant grew up to height of 4 cm.

**5. Did small plants come out from all the seeds?**

**Answer:**

Yes, small plants did come out from all the seeds.

**6. What is the colour of the roots?**

**Answer:**

The colour of the roots is off white.

**7. Did you see any hair on the roots?**

**Answer:**

Yes, I notice the hair on the roots after 8 days.

**8. Try and pull out one little plant from the cotton wool. Were you able to pull it out? Why?**

**Answer:**

Yes, I was able to pull out but with much efforts as the roots made grip with the cotton.

**9. Did you see how the roots grip the cotton wool? Do you think that the roots hold the soil in the same way? Also look at the plants grown by your friends.**

**Answer:**

Yes, I did see how the roots grip the cotton wool. Yes, I think roots hold the soil in the same manner. Also, the roots of the plants grown by my friends also made grip with the cotton wools.

**What Grows?**

**1. What do you think? Which of these things listed by Arif and Roopali grow?**



**Answer:**

All the things listed by Arif and Roopali will grow.

**2. Why don't you make your own list of things that grow?**

**Your list can include the names of things that are in Arif's and Roopali's list.**

**Answer:**

Cats, dogs, rats, plants, lizards, hair, nails etc.. all grow.

**3. Think about yourself – in what ways have you changed over a period of time? Have you grown in any way? For example –**

**Answer:**

Yes, I have grown bigger.

**(a) Has your height increased? How much taller have you grown in the last one year?**

**Answer:**

Yes, my height has increased by 10 cm in the last one year.

**(b) What other part of your body (some people cut it regularly) keeps growing?**

**Answer:**

Our hair keeps growing.