ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION
27, Ballygunge Circular Rd, Kolkata- 700019

Term: Second

Date: 05.11.20

Subject: Science **Class: 4**

Lesson: Plants- Living and Surviving (Plants that grow on the mountains, in the desert, in marshy areas and coastal areas)

ANSWER WORKSHEET – 18

Answer the following questions in detail:-

1. How do pine trees survive in winter?
   Ans: Pine trees can survive in the winter because of their pine needles. Their pine needles with their small surface area, reduce water loss through a process called transpiration. They also have a waxy coating that protects themselves from drying winds. Pine needles contain a chemical that prevents animals from eating them. The dark colour of the needles help the pine trees absorb the heat from the sun, which again then aids in photosynthesis that happens in early spring. The roots of pine trees do not stop growing in the winter time, instead the roots search harder for the moisture and nutrients during the winter time while the ground is frozen and cold versus (against) when it is warm and the ground is soft. So this helps them to survive and live through the winter times. The pine trees bark also helps them to survive in the winter because coniferous trees like these pine trees have thick bark to protect them against the freezing cold in winter.

2. Why do desert plants have small leaves?
   Ans: Desert plants are adapted to their arid environment in many different ways. Stomata are the holes in plant leaves through which they transpire water. Many desert plants have very small stomata and fewer stomata than those of other plants. The stomata of many cactus plants lie deep in the plant's tissues. This adaptation helps cactus plants to reduce water loss by keeping the hot, dry wind from blowing directly across the stomata. The leaves and stems of many desert plants have a thick, waxy covering. This waxy substance does not cover the stomata, but it covers most of the leaves, keeping the plants cooler and reducing evaporative loss. Small leaves on desert plants also help reduce moisture loss during transpiration. Some plants such as Mormon tea and cacti carry out most or all of their photosynthesis in their green stems. Some desert plants grow leaves during the rainy season and then shed them when it becomes dry again. When drought sets in and the plants loose their leaves, some of these plants can photosynthesize in their stems.

3. What are breathing roots?
   Ans: Mangroves grow in marshy soil. These plants develop special roots for breathing as their main underground roots do not get sufficient oxygen from the soil. Portions of their roots come out of the soil, above water level and take oxygen from the air. These roots have numerous pores through which oxygen enters into the underground tissues. In some plants buttress roots (large, wide roots that extend above the ground as a plate like outgrowth of the trunk supporting the tree) function as breathing roots and also provide mechanical support to the tree. Examples of plants with breathing roots are banyan, money plants, rubber plants, peepal tree and many more.

4. Write a short note on the weather and plants that grow in the coastal areas.-
   Ans: The weather in coastal areas is not as cold as other regions due to the water. Large bodies of water act as a heat sink. They absorb heat all summer and in winter keep nearby areas warmer then areas away from the coast. Then as the water is slowly cooled through winter, the opposite occurs and the water keeps the coastal areas cooler in spring. It's also responsible for onshore and offshore winds. Heat from the water moving from the land to the sea, creates offshore breeze. The soil in the coastal areas is sandy. Plants that grow in coastal areas usually grow tall and straight. They have a crown of giant feather- like leaves, which allow the wind to pass through. These plants are adapted to survive in conditions of salty water and heavy rainfall. The coconut trees grow in abundance in coastal areas.

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