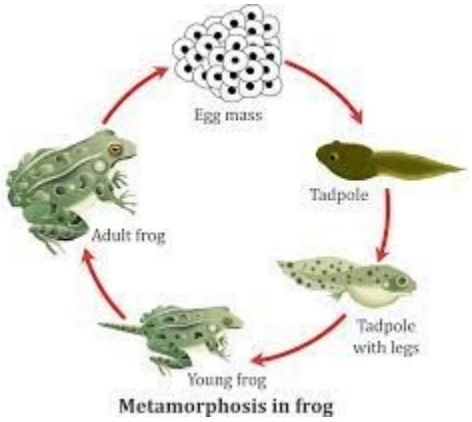
Theme : Cycles

The below lessons are for age group : 6-12

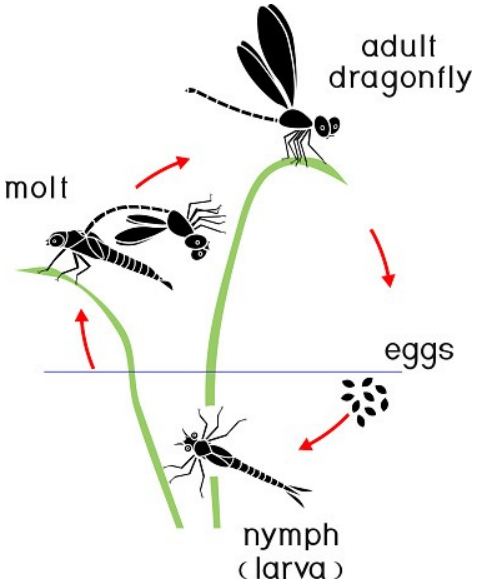
Objective: Understanding the different cycles that exist in nature and in our daily lives that govern the ways the biosphere functions.

Lesson 1:

1. Observe the following life cycles in a pond .Draw and label.
2. Life cycle of a frog.



3. Life cycle of a dragonfly.



4. Compare what is drawn and what is in the picture and learn the keywords.

Lesson 2:

Lifecycle of a butterfly :

1. Draw the lifecycle of a butterfly.
2. Observe and name a plant/shrubs/trees that attract lots of butterflies . Eg :Singapore cherry
3. Observe and name a plant/shrub/tree that has caterpillars(erukkam plant) .
4. Observe and name a plant where you find eggs of a butterfly (Neem tree).

   Note : Butterflies, bees and wasps play an important role in pollination. Draw the lifecycle of a flowering plant.

How do butterflies protect themselves?

Many species of butterflies are able to digest plant poisons from their food in the caterpillar stage. They store these poisons in their bodies and carry them through the remaining stages of their lives. When inexperienced predators, such as young birds attack these butterflies, they get very unpleasant reactions which quickly teach them to stay away! The bright colours and patterns are actually a way for these predators to remember the distasteful species and be warned to stay away.

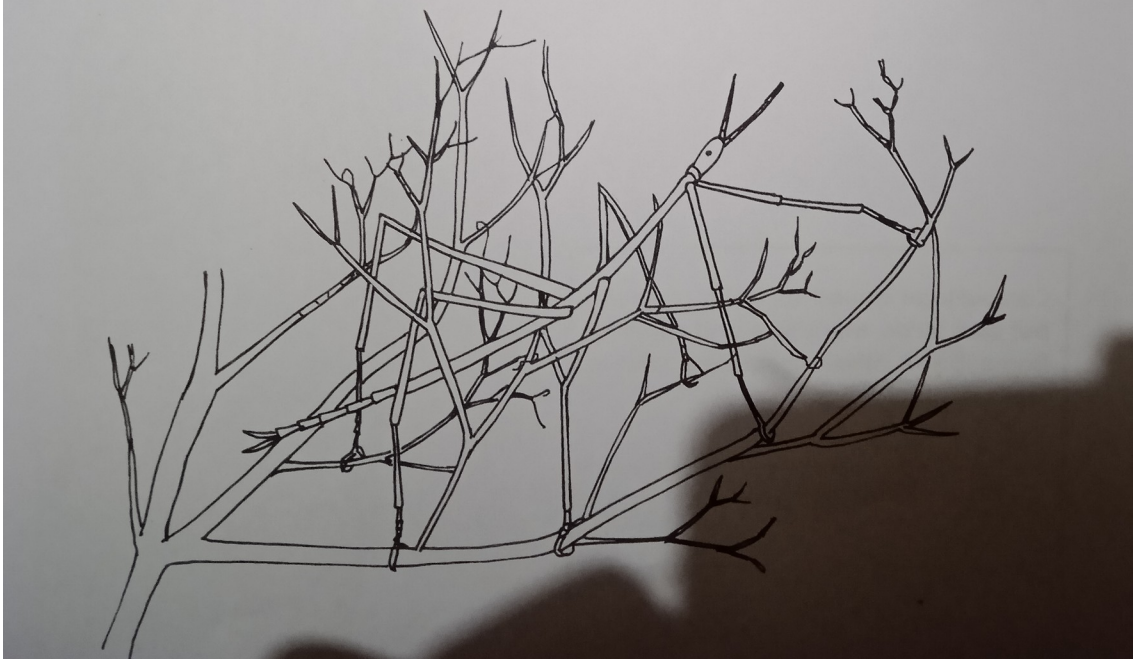
Then there are some species which are not distasteful, but look very similar to the distasteful ones. The predators get fooled and keep away from them too! This is called mimicry.

In another form of mimicry, butterflies defend themselves by exhibiting body parts which look like other creatures. For instance, some butterflies have markings on their wings which look like big eyes, and when threatened, the butterfly suddenly displays them clearly. The predator is startled for a few moments, and the butterfly takes off!

While many butterflies display vibrant colours on the wings' upperside, the undersides are very drab and dull coloured. This is to help them merge with the background by making them resemble dead leaves, or parts of a plant. This is called camouflage and helps them go unnoticed by predators like spiders, birds, frogs and lizards.

Hiding in Plain Sight

Many insects use camouflage and appear like various things in their surroundings such as leaves, twigs, soil or rocks. Some caterpillars even look like bird droppings. There is a camouflaged insect hidden in each picture. Can you find and colour them? Do you know their names?



Read the above snap shots and answer the questions.

- Imagine you are a butterfly .How would you like to protect yourself from your predators?

- Would you camouflage?
- Would you mimic? Would you trick them?
- Draw yourself with wings .What would be the shapes, colors and patterns?

Lesson 3 :

Lifecycle of a flowering plant:

1. After drawing the life cycle of flowering plant in the previous lesson, observe a flowering plant . (Eg: Thanga arali , Chilly plant , Drumstick and Curry leaves)
2. Note down the observations.

Lesson 4 :

Food Cycle:

1.Draw the cycle of where the food we eat is coming from and where the food we eat is going to.(snapshot of child's work as below :)

2.Take a simple lunch menu and trace back what are the ingredients of the menu
3.Find out what are the sources of the food –

1. Plant or animal or sea.

2. Parts of the plant-Stem/leaf/flower/fruit/root/seed.

4. Find out how many days does it take from the day seed is sown till the harvest is made.

5.Find out the recipe of the dish made from parents .Do a cooking activity if possible.

6. Draw the digestion system of our body and trace the path of the food from the mouth to anus.

7.Discuss how the human waste gets back to the earth and trace it's journey.

Lesson 5:

Tamil Season Cycle :

1.Using the tamil calendar ,draw the yearly seasonal cycle of your area. For example ,

Season in English	Tamil Months	Gregorian Months
Spring	chithirai, vaigāsi	Mid Apr - Mid Jun
Summer	āni, ādi	Mid Jun - Mid Aug
Rainy	āvani, puratāci	Mid Aug - Mid Oct
Autumn	aippasi, kārthigai	Mid Oct - Mid Dec
Early winter	mārkazhi, tai	Mid Dec - Mid Feb
Late winter	māsi, panguni	Mid Feb - Mid Apr

*The rains in Thiruvannamalai occur in puratāci (south west monsoon)and karthigai (Northeast monsoon)

Lesson 6:

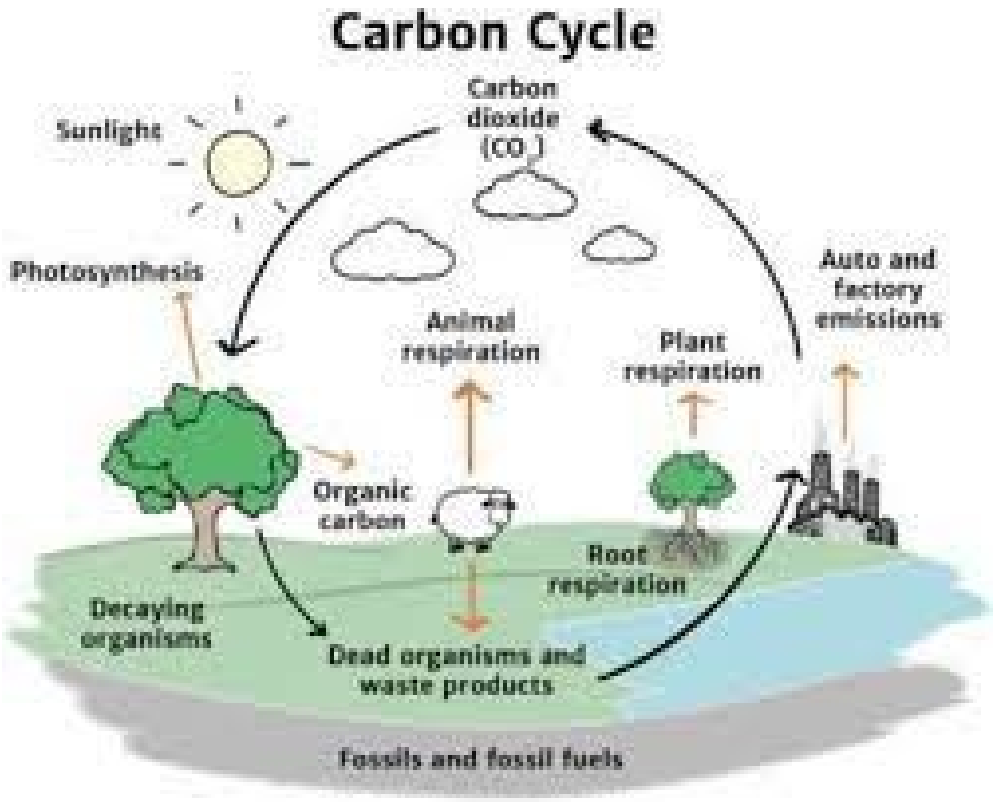
Season watch of trees:

Look at card below and make your own season watch card. Choose a tree and observe it through the year.

The below lessons are for age group -12-14

Lesson 7:

Carbon cycle :

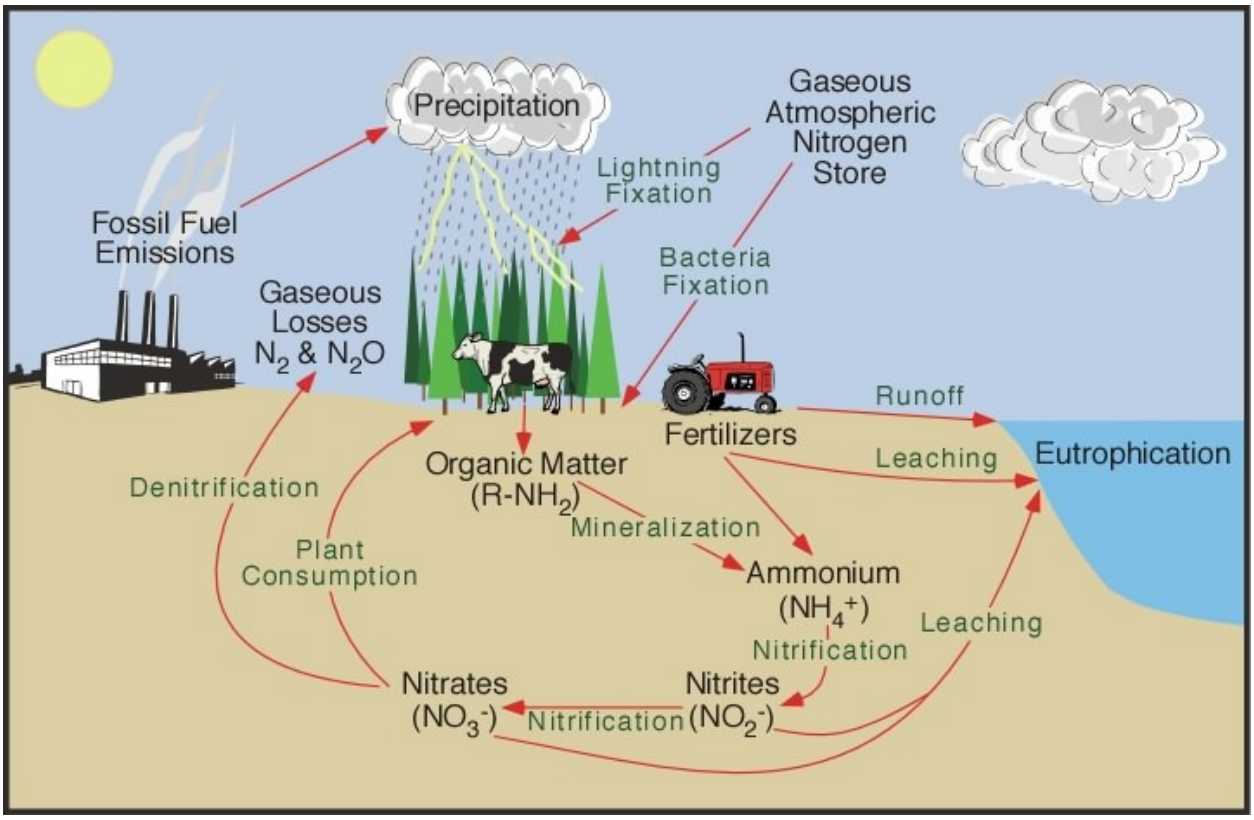


1. Look at the carbon cycle .
2. Write down the small ways in which can you reduce the amount of carbon dioxide in your daily life.
3. Eg: When you take food from the fridge , take it atleast one hour before so that the amount of heat is reduced. For shorter distances ,walk or use a cycle. Use degradable soaps rather than detergents

Note: Do you realize the one and only species which convert carbon dioxide into starch is a green plant?

Lesson 7:

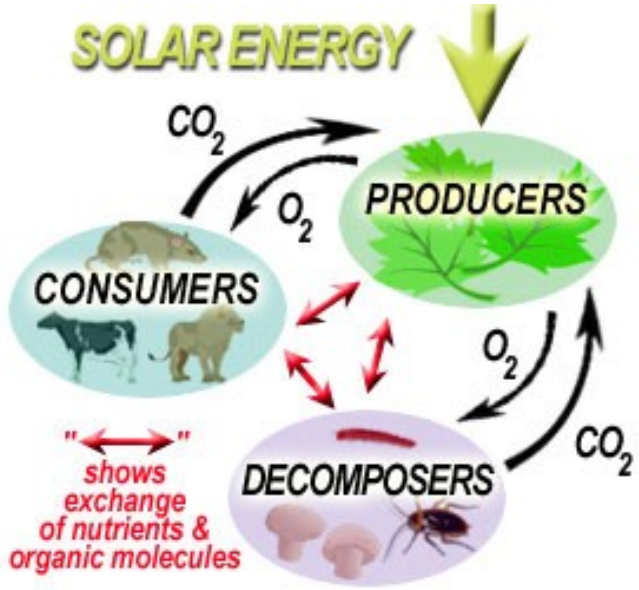
Nitrogen Cycle :



1. In this cycle, observe the nitrogen fixation by plants.
2. Name some plants that fix nitrogen in the soil.
3. Interview an organic farmer and find out what are the crops that fix nitrogen and how do they alternate crops.
4. In your body, find out how nitrogen is used for body functions eg: protein synthesis.
5. Look at the labels of different products that you eat .Write down the names of the compounds that contain nitrogen.

Lesson 8:

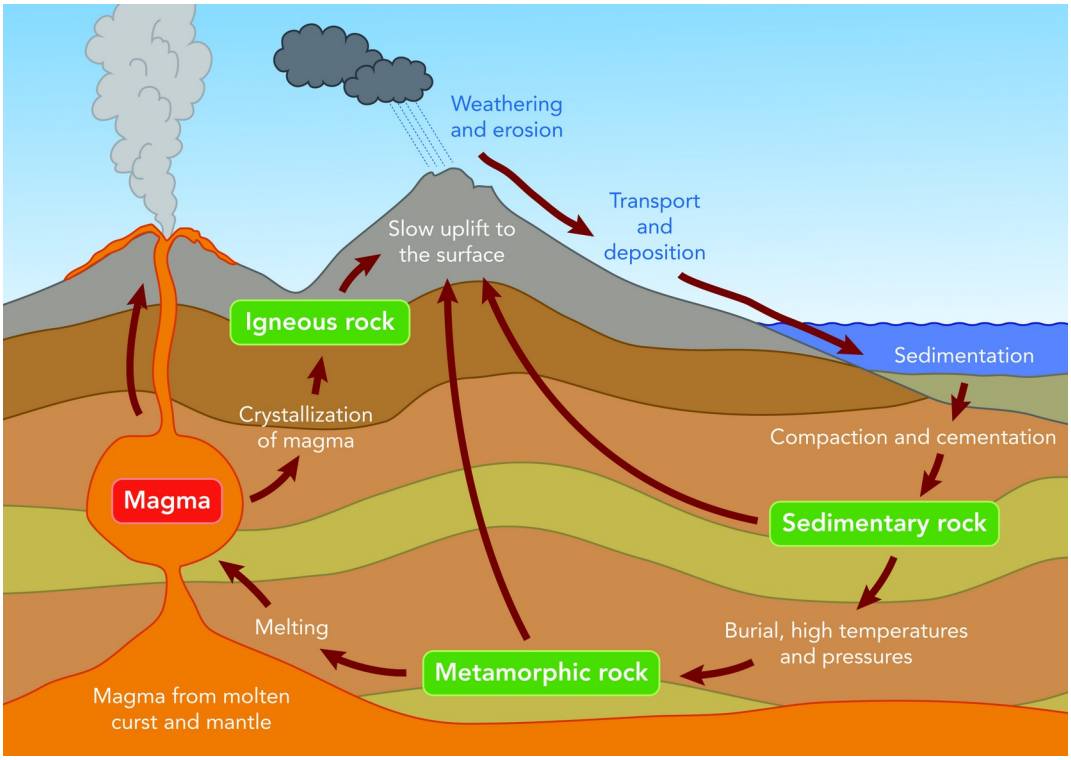
The cycle of Producer, Consumer and Decomposer:



1. Write a paragraph about decomposers using the following keywords: dead decaying matter, moisture, nutrients , soil , breaking down .
2. Write a paragraph on the role of fungal network for the growth of trees.

Lesson 9:

Rock Cycle:

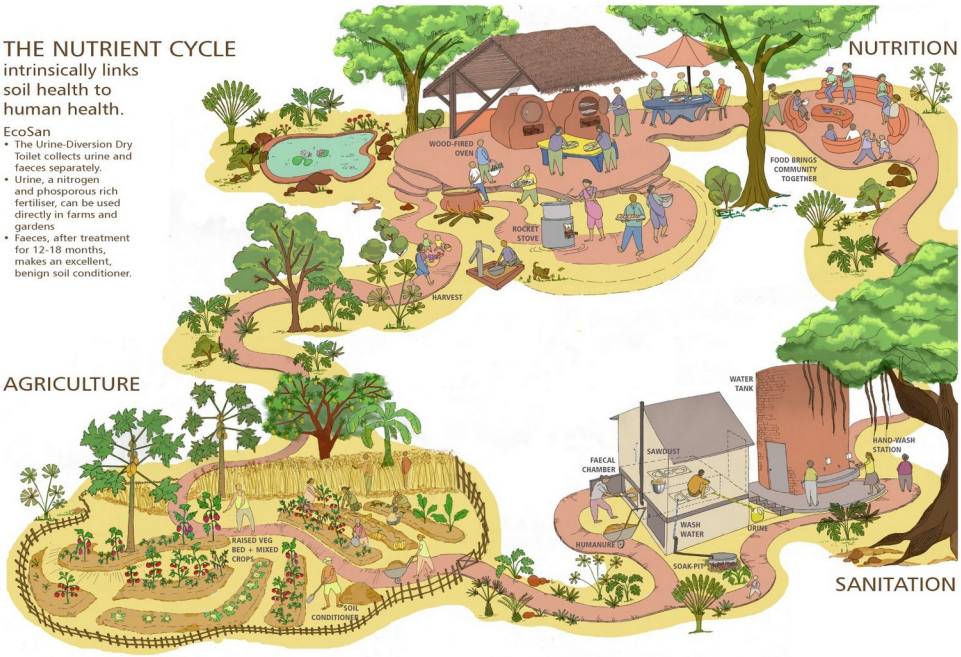


1. Find names of rocks that are found In your locality.
2. Write down the different forms of weathering.(Eg In Tiruvannamalai hill which is made of granite rock , often we see peeling happening due to heat and cracks form through which water penetrates and the gap increases eventually breaking the rocks. Roots of fig trees penetrate through smaller rocks. On of the teachers observed how a Pachai kiluvai tree had broken the rock into two parts. Similarly can you observe and find names of trees which penetrate and break rocks.
   A child's observation of weathering :

Lesson 10:

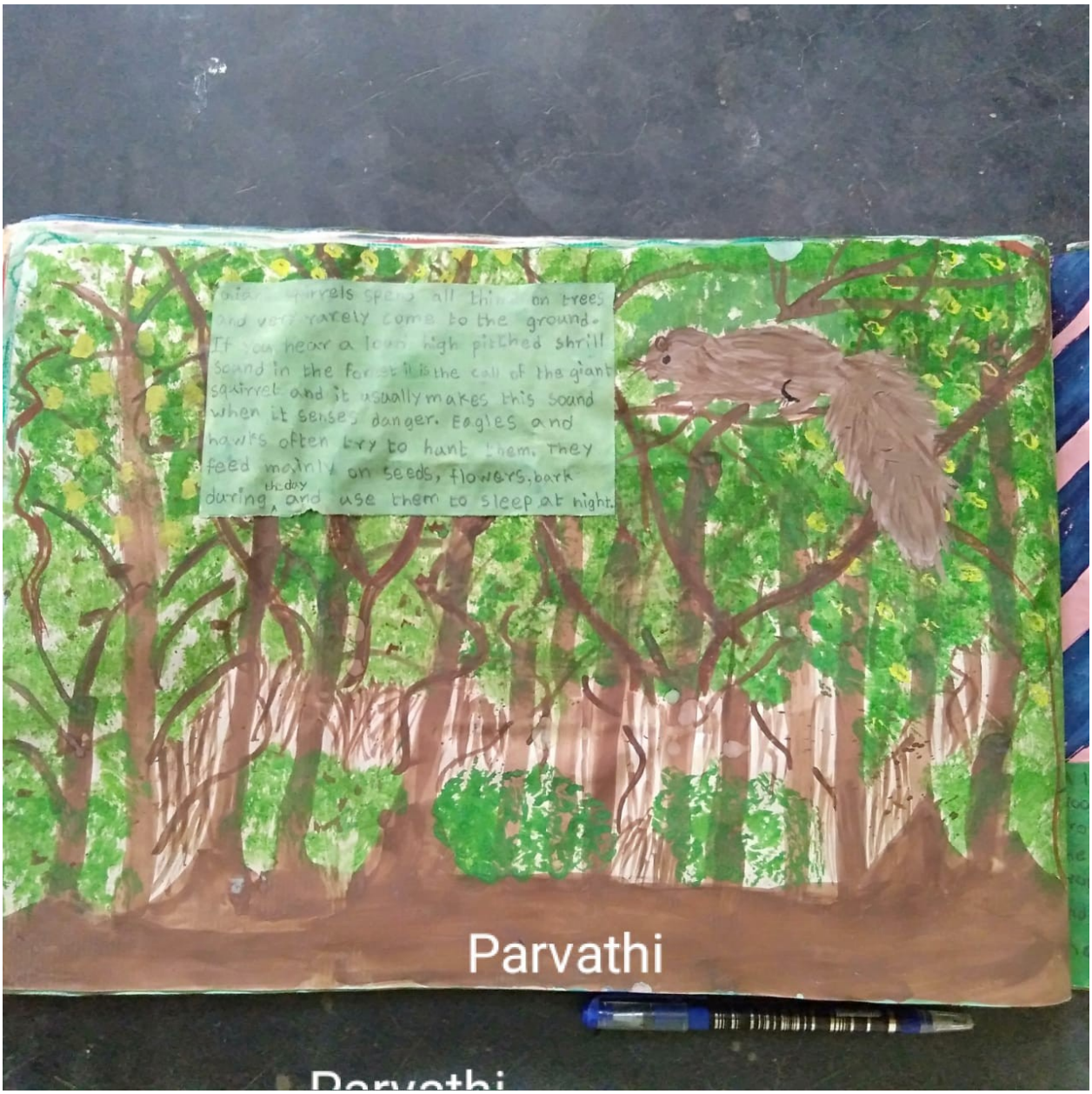
Soil Cycle:

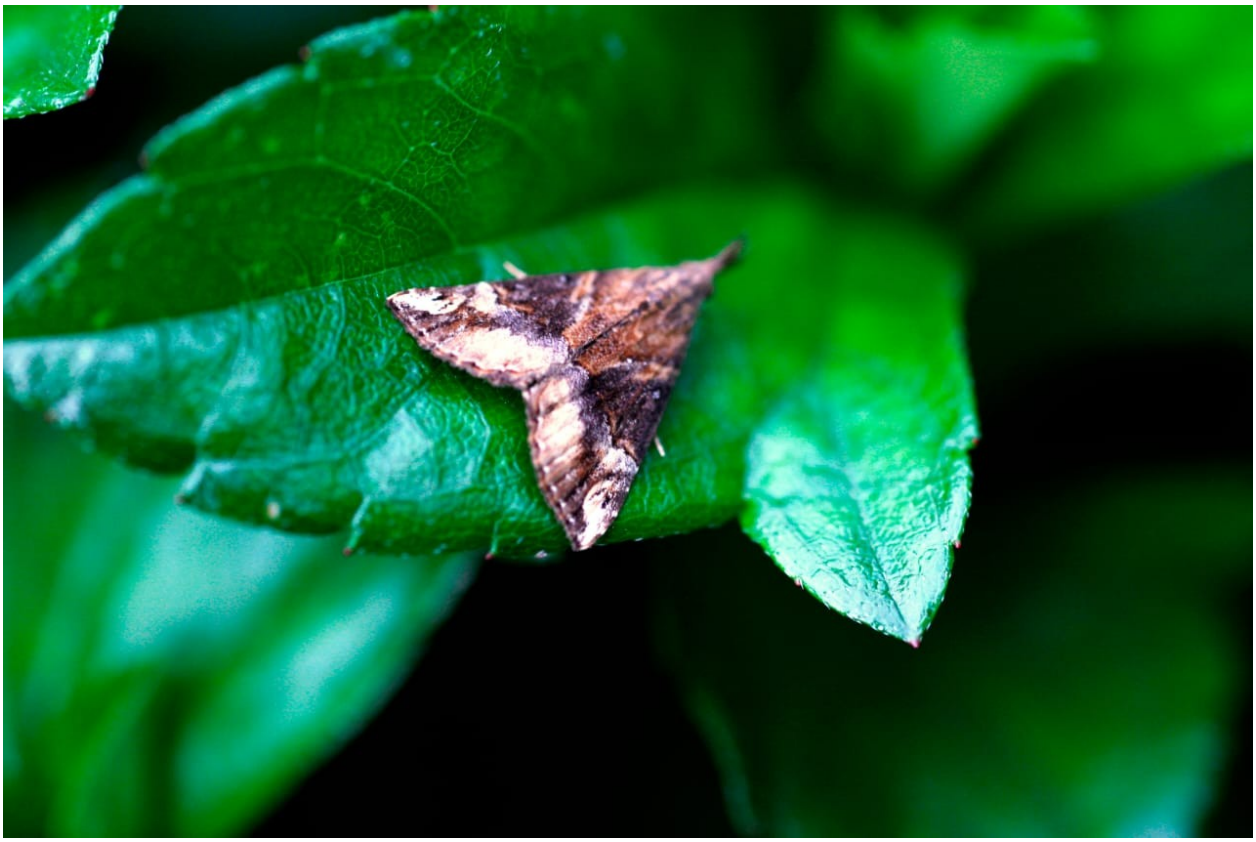
1. Take a handful of soil .Use a lens and write down what all you see in the soil.
2. Connect to the components that you have observed with the given picture of the soil cycle. Discuss the same.



Some of the observations made by children through drawings and photographs :

A child’s observation of weathering


squirrels spend all their on trees
and very rarely come to the ground.
If you hear a loud high pitched shrill
sound in the forest it is the call of the giant
squirrel and it usually makes this sound
when it senses danger. Eagles and
hawks often try to hunt them. They
feed mainly on seeds, flowers, bark
during the day and use them to sleep at night.
Parvathi




Shot on realme C1