

# Cycles in Nature



## INTRODUCTION:

The balance in nature or on Earth has been achieved through cycles. Different systems are dependent on each other and have settled in cycles which has resulted in the right environment and conditions required for life to evolve and sustain.

The lesson plan encourages students to investigate cycles in nature. The learning processes includes hands on demonstration by individual students, brainstorming, reading and exchanging information pertaining to the topic (especially as part of twinning), classroom interactions, group work, nature walk, analysing responses from the twinned school and communicating about the topic through an article.

## Objectives:

Students will be able to

- list “cycles” in nature.
- explain concept of cycle through water cycle.
- illustrate the nutrient cycle (Nitrogen).
- explain the steps in a nutrient cycle.
- explain how cyclic systems in nature do not produce waste.

**Eco-Schools Steps:** Curriculum linkages, Environmental review, Inform and Involve

**Curriculum Linkage:** Science/ Environmental Studies/Social Science



Eco-Schools



## Time required/ Duration:

- **Classroom Session 1:** 45 minutes for each student to conduct the hands-on demonstration to understand the water cycle.
- **Classroom Session 1:** 45 minutes (15 min to explain what “Cycles” mean and to then brainstorm with students other cycles in nature. 30 minutes provided to students to label and colour the Nitrogen cycle worksheet and explain the importance of cycles in nature and that in a truly natural system, no waste is created).

## Resources Required:

- Hot water
- Large transparent bowl
- Cup to be placed in the center of the bowl
- Transparent plastic sheet
- Ice cubes
- Student notebooks, pencils and other stationary
- An online film of the facilitator's choice, which depicts to students the nitrogen cycle
- Resource 1 - (Nitrogen cycle worksheet)



# Activity

## Classroom session 1

### 1. Demonstrating water cycle

- Place some hot water in a large transparent bowl. Explain to students that the bowl represents water on Earth.
- Place an empty cup at the centre of the bowl to collect water which will precipitate back as rain.
- Cover the bowl with a transparent plastic sheet and place a few ice cubes on it.
- Ask students to record their observations.
- Explain to students that, when the hot water rises, it condenses in the atmosphere in the form of rain/precipitation (where there is lower temperature - represented here in the form of ice cubes).
- Students will notice that the empty cup which was placed in the centre of the bowl now has some water. Explain to them that the water got into the empty cup because of the process of condensation and precipitation.
- Explain to students that this movement of water is a continuous process and repeats over and over again and hence is referred to as the “water cycle”.
- Discuss the advantages of the water cycle. *For Example - It brings fresh water.*

## Classroom session 2

### 2. Understanding the Nitrogen cycle

- Screen the film, Nitrogen Cycle | It's AumSum Time to depict to students the importance of the nitrogen cycle.
- Provide students with worksheets of the nitrogen cycle. Ask them to label the same and complete the representation of arrows to indicate the flow of nutrients through this cycle.
- Check out <https://betterlesson.com/lesson/640166/exploring-the-nitrogen-cycle> .
- Assist students to understand that all waste in nature whether it is dead and decomposing matter from both plants and animals undergoes a decomposition process and becomes available for use again in the nutrient cycle.
- Discuss and emphasize to students that there is no “waste” in nature.
- Lead the discussion to bring out a list of human made items which which do not decompose/ or take very long to decompose. The facilitator must make students understand that these items which do not decompose are human made and piling up as waste in nature.

### Evaluation:

Ask students to write a letter to a friend explaining their trip through the nitrogen cycle. Ask them to Include information about (1) where they went, and (2) how they got to each destination.

# Resource 1

## Nitrogen Cycle Worksheet

