

# Grade 8 - Science

## Unit 1 - Plants and Photosynthesis

**Start:** August 2022

**Duration:** 7 weeks

### LEARNING EXPERIENCES:

In this unit, students will learn to draw the structure of a plant, explain how water is moved into a plant (osmosis, diffusion, surface area, root hairs), explain what causes water to move through the plant (xylem, phloem, capillary action) and how water leaves the plant (transpiration, evaporation, stomata). They will also learn to draw cross-section of a leaf and flower. They will be able to describe the main processes of photosynthesis, differentiate between Active and passive transport. All this will help them to outline the effects of photosynthesis on the world.

### KEY CONCEPT:

**Systems**

### RELATED CONCEPTS:

**Energy, Transformation**

### STATEMENT OF INQUIRY

**Energy transformations** sustain complex **systems**.

### INQUIRY QUESTIONS:

#### Factual:

How do plants use simple substances and solar energy to make glucose?

#### Conceptual:

Why are plants structured as they are?  
How are local plants adapted to their environment?

#### Debatable:

Can plants (and photosynthesis) affect the World?

### OBJECTIVES AND ASSESSMENT CRITERIA:

#### Criterion A: Knowing and understanding

Students will:

- i. describe scientific knowledge.
- ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations.
- iii. analyse information to make scientifically supported judgments.

#### Criterion B: Inquiring and designing

Students will:

- i. describe a problem or question to be tested by a scientific investigation.
- ii. outline and explain a testable hypothesis using correct scientific reasoning
- iii. describe how to manipulate the variables, and describe how sufficient, relevant data will be collected.
- iv. design a logical, complete and safe method in which he or she selects appropriate materials and equipment.

#### Criterion C: Processing and evaluating

Students will...

- i. correctly collect, organize and present data in numerical and/or visual forms
- ii. accurately interpret data and describe results using scientific reasoning.
- iii. outline the validity of a hypothesis based on the outcome of a scientific investigation.
- iv. outline the validity of the method based on the outcome of a scientific investigation.
- v. outline improvements or extensions to the method that would benefit the scientific investigation.

### ATLs

**Communication skills, Critical thinking skills & Creative thinking skills**

### RESOURCES:

MS Teams / Gizmos simulations/ Laptops / Experiments done as demonstration in class. All notes written by the students in the notebooks. Resources shared in TEAMS and ManageBac.

### SUMMATIVE ASSESSMENT:

Criteria B & C: Students will use Gizmos to investigate the topic given and write a lab report on it.

Criterion A: A paper and pen test will be given at the end of the unit.