



Lesson Plan

Semester 1 Academic Year: 2018

Subject: Science MLP

Level: Primary 4

Time: 50 minutes

Date: 17 – 21 July 2018

Unit: 1 Name of chapter: Transport System

Topic & subtopic: Transport system in plant

Standard/Indicator: Strand 1: Living and Family

Standard Sc1.1: Understanding basic units of living things; relationship between structures and functions of living things, which are interlinked; investigative process for seeking knowledge; ability to communicate acquired knowledge that could be applied to one's life and care for living things.

Learning Outcomes/Objective: By the end of lesson all students will be able to

- 1.1. Explain "what is the plant transport system?" (Sc1.1.5)
1.2. Explain and experiment about plant transport system (Xylem and phloem) (Sc1.1.3)

Teaching aids:

- 1. Power Point: Transport system in plant
2. Vocab Card
3. Notebook, pencil, and colored pencils
4. Experiment materials

References (name of book, website, newspaper, magazine):

- 1. Science MLP Textbook.
2. iPSLE2017: Science Revision Guide Primary 5&6

Activity (Peer/Group):

INTRODUCTION: (5 mins)
- Vocabulary Review
- Put students in small groups.
- Students learn all vocabulary by vocabulary game.
TEACHING PROCEDURES: (20 mins)
- Give instructions to small groups: Explain the process of transportation in plant using-The words: xylem tube, phloem tube, water, food (or sugar/glucose), roots and leaf
- Student study the transportation in plant using PPT and animation.
STANDARD FORMATIVE ASSESSMENT: (25 mins)

Table with 4 columns: Type of Tubes, Run From, To, Function(s). Rows include Water-carrying tube (Xylem) and Food-carrying tube (phloem).

Display board:

Plant Transport System
Key:
- Movement of water and minerals
- Movement of food
Get it Right!
- Wrong concept: The water-carrying and food-carrying tubes of the transport system are found only in the stem of a plant.
- Right concept: Both the water-carrying and food-carrying tubes are also found in other parts of a plant — in leaves, flowers and roots. This is to ensure that water and food can also reach these parts of the plant.
When a stalk of celery is placed in coloured water for some time, the water-carrying tubes that transport the coloured water up the stem are stained by the coloured water.
Cross-section of stem
The water-carrying tubes can be seen in the cross-section of the celery stalk.

Table with 4 columns: Type of Tubes, Run From, To, Function(s). Rows include Water-carrying tube (Xylem) and Food-carrying tube (phloem).

Multiple-choice Questions: Choose the correct answer.

1. Mary puts a plant into a beaker of water in which some blue ink has been added. A few hours later, she observes that the flowers turn from white to blue.



iPSLE Exam 2018

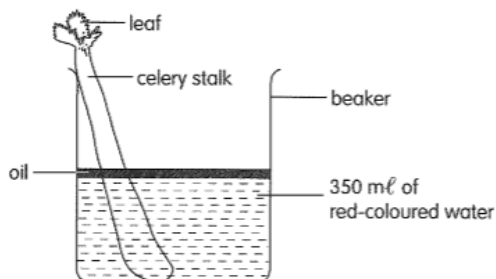
What does this experiment show?

- (1) The stem joins the roots to the rest of the plant.
- (2) Water is absorbed by the plant only through its roots.
- (3) The stem carries water from the roots to the rest of the plant.
- (4) Water is lost to the surroundings from every part of the plant.

Answer: (3)

Use the information below to answer Question 2, 3 and 4.

2. Philip set up an experiment as shown below. He placed a celery stalk with leaves in a beaker of red-coloured water and left the set-up by a window for a day.



What is the purpose of the layer of oil?

- (1) To keep the celery green and glossy
- (2) To prevent air loss by the celery in the water
- (3) To prevent the celery from taking in water
- (4) To show that any water loss is due to the absorption of water by the celery

Answer: (4)

3.

Which one of the following correctly states the observations Philip will make after a day?

	Colour of leaves	Amount of water left in the beaker (mℓ)
(1)	Green	350
(2)	Green	300
(3)	Green with red patches	350
(4)	Green with red patches	300

Answer: (4)

4.

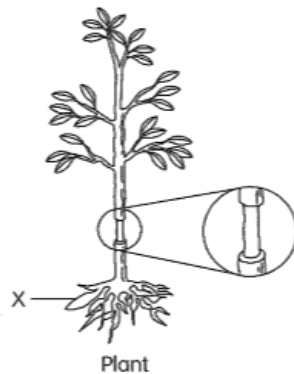
Philip cut across the stalk of the celery and observed it carefully. He saw some red dots on the cut surfaces. What can he conclude from this experiment?

- (1) Evaporation of water occurs all the time.
- (2) Water is absorbed through the roots of the plant.
- (3) Water is transported in the food-carrying tubes of the plant.
- (4) Water is transported in the water-carrying tubes of the plant. ()

Answer: (4)

Use the information below to answer Question 5 and 6.

Study the diagram below.



5.

Danny knew that plants make food in their leaves. However, he was puzzled when his teacher told him that food made by the plant shown on the previous page was stored in part X. How did food get stored in part X?

- (1) The food made in the leaves was transported to part X through food-carrying tubes.
- (2) The food made in the leaves was transported to part X through water-carrying tubes.
- (3) The plant absorbed food through its roots and stored it in part X.
- (4) The plant was able to make its own food at part X. ()

Answer: (1)

6.

Danny removed a part of the stem as shown in the diagram on the previous page. After a few days, the plant still looked healthy but part X did not become bigger. What is the likely reason?

- (1) The plant was unable to transport the food made in the leaves to part X as the food-carrying tubes were removed.
- (2) The plant was unable to absorb water to make food as the water-carrying tubes were removed.
- (3) The plant was unable to make food as both the water-carrying tubes and food-carrying tubes were removed.
- (4) The plant was unable to transport water to the leaves to make food as the water-carrying tubes were removed. ()

Answer: (1)

Evaluation Instruments

1. Q&A Rubric

Mark Allocation	Marks
Answers are correct 81-100%	5
Answers are correct 61-80%	4
Answers are correct 41-60%	3
Answers are correct 21-40%	2
Answers are incorrect 1-20%	1

2. Activity Rubric

Mark Allocation	Marks
Contributed exceptional effort to the group's project and showed leadership in organizing group efforts. Exhibited positive, supportive attitude toward group members. Completed share of work with great effort.	5 (Excellent)
Contributed great effort to the group's project and helped organize group efforts. Exhibited positive, supportive attitude toward group members. Completed share of work with great effort.	4 (Good)
Contributed fair effort to the group's project. Exhibited positive, supportive attitude toward group members. Completed share of work with fair effort.	3 (Fair)
Contributed little effort to the group's project. Exhibits negative attitudes toward group members. Did not complete his or her share of work.	2 (Poor)
Contributed no effort to the group's project. Exhibits negative attitudes toward group members. Did not complete his or her share of work.	1 (Not Done)