Science

Level: Standard 2

Strand: Systems and Interaction

Topic: Plant Growth

Key Points:

- Healthy plants grow and …….
  - ✓ will increase in length.
  - ✓ will have more leaves.
  - ✓ bear fruits (if fruit bearing).
- Plants **need** air, light, warmth, and water to grow.
- These needs are called conditions for growth.
- We can observe how the plant grows by varying one need, such as water or sunlight (condition) at a time
- As each need/condition is varied (variable) any changes in height (or count the number of new leaves or fruits) is recorded.
- The observations should be recorded in a table. Two examples are given below.

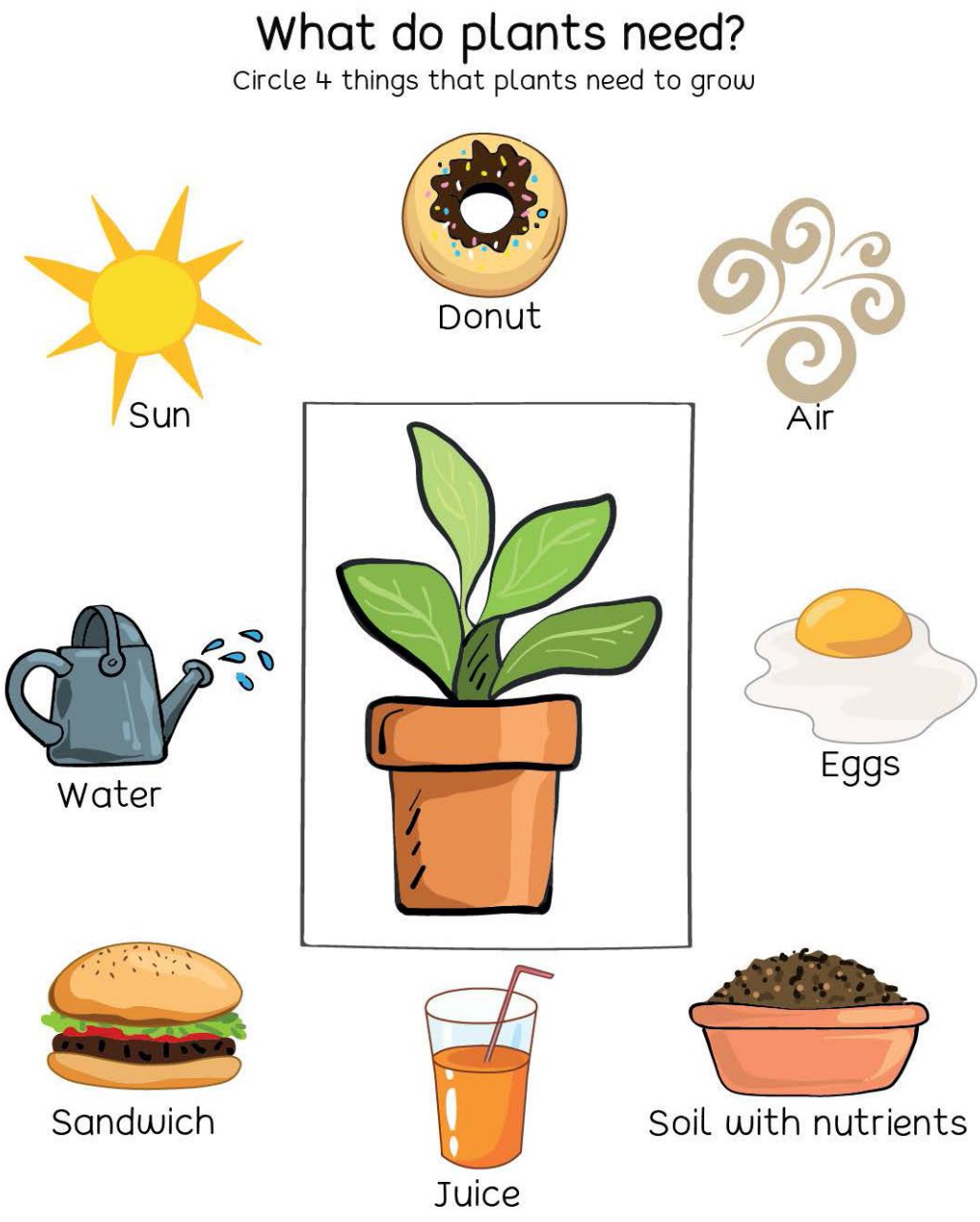
Table 1: Height of plants after 3 days

Type of condition	**Height/cm (after 3 days)**
Plant #1 (no sunlight)	2
Plant #2 (sunlight daily)	6

Table 2: Amount of new leaves after 5 days

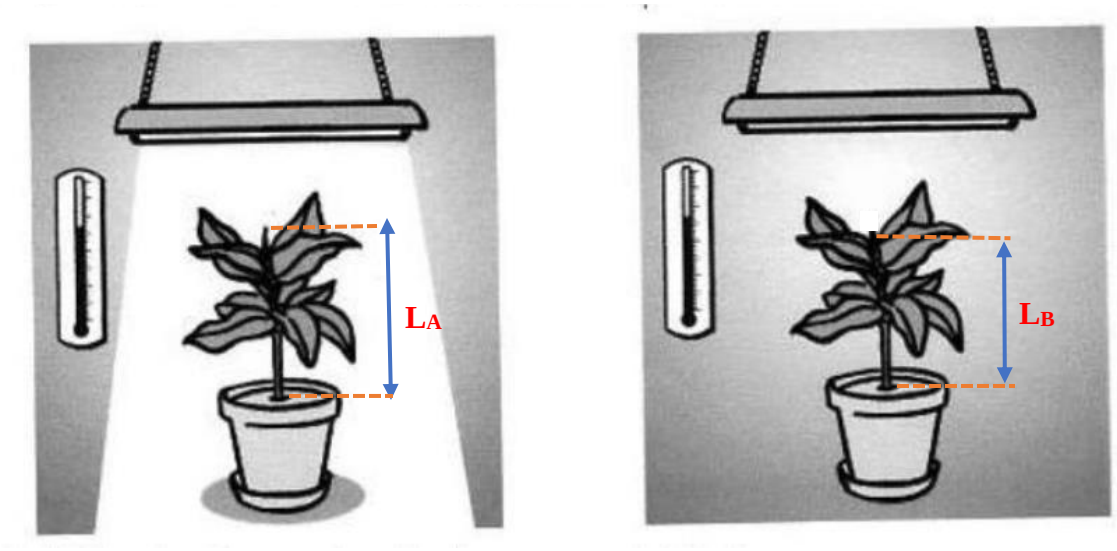
Type of condition	**Amount of new leaves (after 5 days)**
Plant #1 (no water)	0
Plant #2 (watered daily)	4

Activity 2:



Picture #1

Activity 2: A **picture #2**, of a student's project on day 1, is shown



Plant A **Plant B**

a) What needs or conditions are provided for the plant A?

_____

_____

b) Which need or condition was changed (**variable**) for plant B?

_____

c) Which need or condition remained the same **(control**) for both plants?

_____

d) Use a rule to measure the length (l) of the stem of each plant in the picture.

- The **"0 cm"** marking of the rule is placed at the base of the plant and held upright alongside the stem.
- The marking of the rule closest to the top of the shoot is recorded.

Length of plant A, L_A = _____ **cm**

Length of plant B, L_B = _____ **cm**

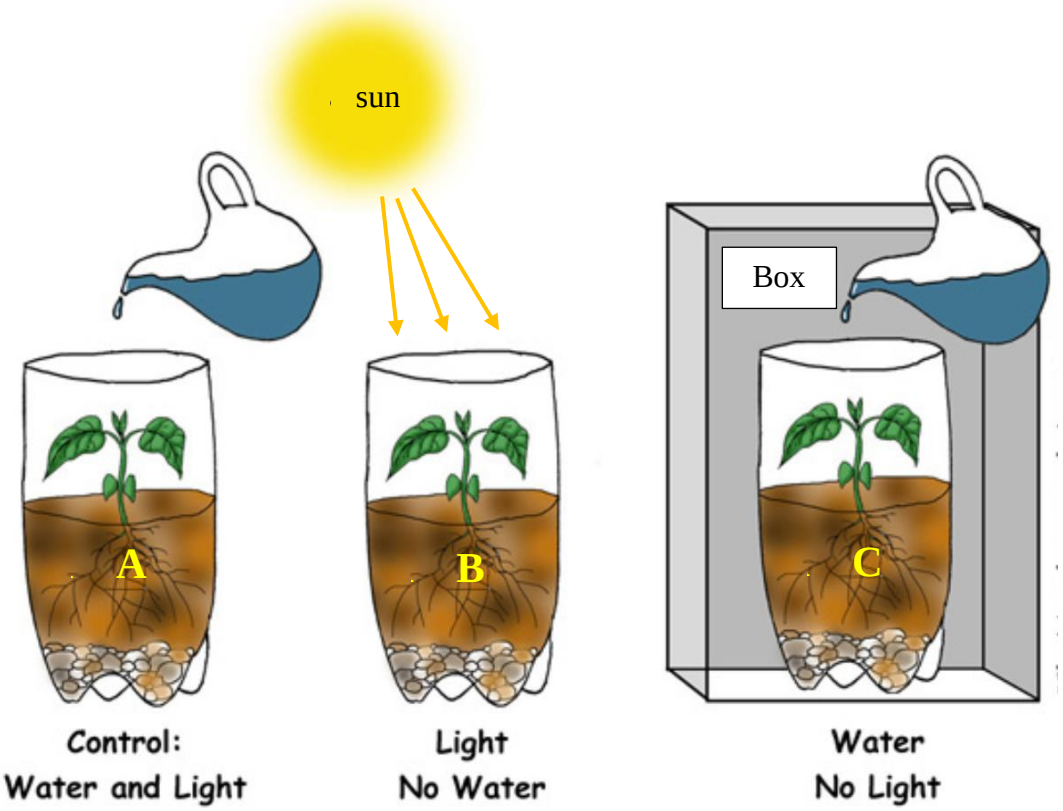
e) Complete the table to predict what you may observe for both plants after 5 days:

Name of Plant	Day 1 Height of plant (L/cm)	Day 5 Height of plant (L/cm)
Plant A	L_A = _____	Guess if height will be more or less than for day 1 L_A = _____
Plant B	L_B = _____	Guess if height will be more or less than for day 1 L_B = _____

Assessment:

In order to find out if plants can thrive without the essential elements of water and sunlight, a student conducted an experiment involving 3 similar plants. Each was planted with the same amount and type of soil as shown in the picture below.

Picture #3



Answer the questions based on the picture #3 above.

1. Which plant (A, B or C) will grow the tallest in after 5 days given the conditions shown in each case? _____

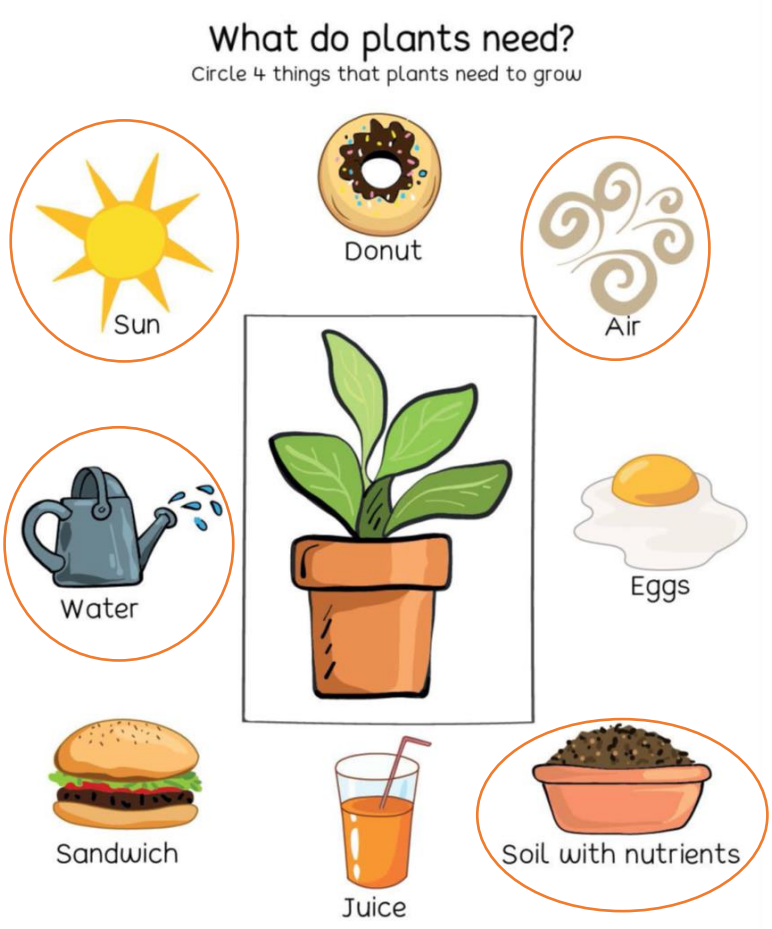
2. Why would plants B and C eventually die?

   _____

3. Plants A, B and C would take in nutrients from the soil. This would start in the plants_____. Then the nutrients move through the _____. Until eventually they reach the plants _____.

Answer key:

Activity 1:



Activity 2

(a) Light

(b) Less Light

(c) Temperature of air

(d) Length of plant A, L_A = ___3 cm___

Length of plant B, L_B = ___2.5 cm___

(e)

Name of Plant	Day 1 Height of plant (L/cm)	Day 5 Height of plant (L/cm)
Plant A	**L_A = ___10_____**	Guess if height will be more or less than for day 1 **L_A = ____More _____**
Plant B	**L_B = ___10_____**	Guess if height will be more or less than for day 1 **L_B = ____More, but less than height of plant A**

Assessment:

1. A
2. Because Plant B is not receiving water and Plant C is not receiving sunlight
3. Roots, Stems, Leaves

References:

1. https://www.pinterest.com/pin/371406300509989008/
2. https://www.exploringnature.org/db/view/Photosynthesis-A-Simple-Experiment