# PROJECT WORK (PROJECT ONE) senior one

# Theme: Diversity of living things

# Topic: Introduction to biology

**BACKGROUND SUB-TOPIC:LIFE PROCESSES**

**In your previous lessons, you found out that there is a set of characteristics, common in all living organisms and these are called life processes (Can you recall them?).**

**During this corona break, you will undertake the instructions given in this project. This project will last for at least 9 days. At the end of the project, You will be required as an individual to present/report your well written findings on the charts (or books).**

**Submission of the project findings/report must be within not more than 14 days from the start of the project.**

**Aim(s) of the project**

(i) To show how some of the life processes are manifested in real life situations and how biologists can find out their occurrence.

(ii) To determine the rate (speed) of growth (which is a life process) in plants.

**Requirements / apparatus:**

-Cotton wool
-Transparent tins/ cans/ empty bottles
-Rulers
-Dry seeds (beans, peas, maize)
-Water
-Chart

**Procedures**

(i) Sort out (healthy) seeds from the heaps provided to you.

(ii) Arrange two (2) transparent bottles/cans/empty bottles and label them as**B** and **C**. (Ensure that they have a widely open top side).

(iii) In the set up labeled **B**, wrap five (5) healthy seeds in **wet** cotton wool and insert into the empty transparent can/bottle/container.

(iv) In set up **C**, wrap five (5) healthy seeds in **DRY**cotton wool and insert into the empty transparent can/bottle/container.

(v) keep your set-ups together in a safe place .Every day , you will pick out only one ( 1) seedling from each set-up (i.e. one from B, and the other from C) and measure and record the length of the radicle /shoot (plumule) .

- You must observe the same seedling throughout from day one to the last day of your measurement from each set-up.

Take measurements every day and keep a record of those measurements taken every day.

(vi) Record your observations on a chart with a table drawn as shown below:

| Time (days) | Length of the radicle/ shoot (mm) | | Change in length of the radicle/ shoot (mm) | |
|---|---|---|---|---|
| | Seed from set-up B | Seed from set-up C | Seed from set-up B | Seed from set-up C |
| 0 | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |

Calculate the change in length and fill in the table above (Hint: how do we calculate change)

**QUESTIONS**

1. State the life process being investigated
2. Give the importance of the life process investigated
3. List the differences between the results in set ups B and C at the end of the project
4. Suggest reasons for the differences stated in 3 above.
5. Calculate the speed (rate) of growth of the seed in set-up B (Hint: remember how speed calculate calculated?)
6. Write a project report

**HINT**

**Writing your report**:

- A good report should include the following:
  - Name of the participant (student's name), class, e.g. Corona David ,senior one white
  - Time period for the project, date e.g. from 21th march ,2020 to 30th march ,2020
  - Subject area e.g Biology; diversity of living things

The main body of the report should have;

1. Title of the project( aim of the experiment)
2. Materials or apparatus used
3. Procedures taken
4. Results ( preferably in a table)/ observations
5. Conclusions. ( SHOULD be in line with the aim)