



TOPIC: VEGETABLE PLANTS NEED CERTAIN THINGS TO SURVIVE

National Curriculum Area/s: Science

Title: *Vegetable plants need certain things to survive. What are they and how do humans help to provide for them and maintain their survival?*

Year level(s): 2/3

Strands

- Scientific Inquiry (SI)
- Science as Human Endeavour (SHE)
- Scientific Communication (SC)

Understanding Goals

- Students will understand and follow how to conduct a practical investigation into factors that affect the growth of vegetable plants. (SI)
- Students will understand how to collect and communicate information about growing vegetable plants. (SC)
- Students will understand how humans are able to help to provide and maintain survival of vegetable plants. (SHE)

Possible links to other curriculum areas

- Mathematics – Measurement and Number: operations of problems based on the growth/measurements recorded of the plants; graphing of measurements etc.
- Art – still line drawings.
- Writing – weekly journal entries of observations and changes.
- T&E – planning and making an appropriate vegetable pot for growing the vegetable plant.
- For more suggestions see the 'Vegetables' Cross Curriculum Plan on the Smarty Plants website.

ACTIVITY/LESSON OUTLINES:

Introductory Lesson: The Inquiry Process

1. Begin by introducing the Science Inquiry Framework. This will outline where the inquiry process will lead. With this particular year group, the children are only being exposed to the process and will complete the process following a modelled teaching lesson.
2. Children will be given the title question/statement, "*Vegetable plants need certain things to survive. What are they and how do humans help to provide and maintain their survival?*" Discuss and brainstorm what ideas they can think of and develop a prediction as a whole group.
3. Once the ideas are collected, discuss and suggest ways to conduct an investigation to find answers to the proposed question. Introduce the term 'variables'. Identify the variables that affect the growth of vegetable plants – eg. Light, food, water. Also mention the need for the investigation to be fair and safe – what does this mean?
4. Once the variables have been recorded, decide as a group, which one will be tested initially by the whole group.
5. Discuss the methods required to follow the investigation through and what methods will be used for recording the data and information.

Continuing Lessons: Modelled Investigation

1. As a whole-of-class activity, prepare the investigation.
2. As the investigation proceeds over the next few weeks, discuss and record the results and make comparisons to the prediction. Reflect on the process and make conclusions about how fair the investigation had been.

Concluding Lesson: Communicate Findings

1. Communicate the findings/ results in a variety of ways such as diagrams, pictures, written report/paragraph.
2. Include recommendations.

MODIFICATIONS FOR OTHER YEAR LEVELS:

Middle Primary:

Students will have been previously exposed to the Inquiry Process. They will be able to follow the chart as a guide and work within small groups to apply developed skills of posing questions, identifying variables, negotiating and deciding on suitable recording methods and be able to collaboratively communicate their findings and conclusions.

Upper Primary:

For older year groups, the students will have been previously exposed to the Inquiry Process, so they will be able to apply their independent skills of posing questions, identifying the variables, deciding on suitable recording methods and communicating their findings and conclusions. Extended areas of investigation might include:

- The effect of soil pH, different nutrients or soil type used such as clay, sand, coir, pine bark (as in commercial orchid mixes).
- Differing needs of various vegetables such as those that need more sun or shade or require different amounts of water.
- Studying the light spectrum to see the effect of different colours on plant growth.
- Research the impact of salt on plant growth. Discuss how this affects farmers and what causes salinity.



TIPS:

- Use very fast growing vegetables such as peas, beans, rocket or radish for this experiment as these will begin to show variations quickly.
- If growing from seed, those listed above will take between 4 to 7 days to sprout. For a faster result, buy seedlings.
- If one of the variables is 'food', plant all seedlings into coir which does not have any fertiliser added. This then allows an opportunity for fertiliser to be added in liquid form. Slow release fertiliser can also be used though these are slow to get started and so will not have an impact on the plants for several days.

Our question is...

We will change...

**We will measure and observe...
(Variables)**

We will keep these things the same...

When I change...

What will happen to...

Why?