



EXPLAINING HOW LIVING THINGS ARE SUITED TO THEIR PARTICULAR HABITAT. UNDERSTANDING THE ROLE OF PHOTOSYNTHESIS IN VEGETABLE PRODUCTION.

ESSENTIAL QUESTION: CAN I USE ALGEBRA TO MAKE MY VEGGIES BIGGER?

WHAT ARE WE LEARNING?

- Explaining how living things respond to change both natural and human induced.
- Connecting members of sequential patterns with their ordinal position.
- Using basic algebra and companion planting to solve the problem of what to plant where.

TRY THIS WITH

- Year 3-8
- Students who like designing projects.
- Students who love getting their hands dirty.

FIND

Select
Choose
Compare

Predict
Research
Estimate

Challenge students to find 3 contrasting pieces of food waste from school lunch time. Set up an experiment that creates a fair test for food decomposition rates.

Use time lapse skills to document the decomposition of these items over a week.

Create a YouTube playlist of explainer videos about photosynthesis on YouTube.

Use the information from the videos to create a summary of the process.

Create a voiceover using Dubme for this (french) photosynthesis animation.

Watch Photosynthesis and Food.

Use the Photosynthesis Fact Sheet to understand how crucial photosynthesis is to our lives.

Research a series of factors which some believe contribute to increased growth rates.

Prompt students to consider music, temperature, talking, light, coffee grounds etc.

APPLY

Correlate
Categorise
Choose

Prioritise
Examine
Distinguish

Investigate the predicted local rainfall for an area over the next few months.

Use Google Maps to identify hard surfaces around your school where runoff occurs.

Identify a site for a veggie garden once the seedlings are large enough for planting out.

Use a compass to calculate North, South, East and West.

Record compass points on the ground with chalk.

Re-inforce that sunlight is important for plants to continue growing.

Use Suncalc and the compass points to predict the sun's path for your site.

Plan and design the vegetable garden.

Consider a range of innovative solutions and designs that respond to the chosen space.

Clarify that some vegetables do not like to be planted near others.

Research your different types of seedlings to identify which plants prefer which.

Verify your research by confirming three sources for each seedling's preferences.

PRODUCE

Validate
Interpret
Theorise

Select
Measure
Estimate

Make a planting plan for the seedlings by checking each logic statement.

Create a virtual test - use counters, people or code a game that tests planting positions.

Reflect on learnings from the decomposing vegetables.

Watch How Compost is Made and Composting for Kids.

Prepare a garden bed for your vegetable garden.

Plant vegetable seedlings.

Set up a composting system that uses waste generated by the class or the entire school.

Investigate methods of rainwater harvesting.

Identify a realistic method of collecting rainwater at your school.

Calculate and predict how much rainwater you could potentially harvest.

Build an irrigation system to provide water to plants over weekends.

Use your Life Garden Tracker App to track where you have planted each seedling.

Share your precise veggie garden location with another class using what3words.

Update your veggie garden innovations with your 'partner class'.



SUCCESS CRITERIA

Students can check they have successfully completed the task by:

- Creating a voiceover that accurately summarises the photosynthesis process.
- Designing a vegetable garden in response to factors associated with a specific site.
- Preparing a vegetable garden that incorporates compost and water collection solutions.

| PRINCIPLES | VALUES | KEY COMPETENCIES | LEARNING AREAS | WORD BANK | KEY CONCEPTS |
|--|--|---|--|---|--|
| Learning to Learn High expectations | Ecological Sustainability Excellence | Participating and contributing Thinking | Mathematics and statistics Science | Compost Chlorophyll Companion Planting Triangular validation | Decomposition Photosynthesis Algebraic Statements Water Harvesting |