Understand that changing one thing has an impact on a simple experiment.

INVESTIGATING THE FACTORS FARMERS MUST BALANCE WHEN PLANNING THEIR GRASS GROWTH.

ESSENTIAL QUESTION
Can I use Cows that Moo Softly to make my grass grow faster?

WHAT ARE WE LEARNING?
- Asking questions, finding evidence and exploring simple models.
- Carrying out appropriate investigations to develop simple explanations.
- Gathering, sorting and displaying multivariate category and whole number data to answer questions.

TRY THIS WITH
- Years 4–6
- Students who enjoy testing and predicting.
- Students who love investigating.

FIND
- Label
- Identify
- Retell

APPLY
- Construct
- Choose
- Translate
- Establish
- Research
- Simplify

PRODUCE
- Create
- Design
- Hypothesise
- Compare
- Conclude
- Infer

Curate a YouTube playlist of germination time lapse videos.
Watch ’Got Seeds’ and look at ’What a seed needs to grow.’
Identify both the seed parts and the factors required for germination (oxygen, warmth and moisture).
Add different genres of music as soundtracks to a selected germination time-lapse.
Reflect on whether that changes the way you view what is happening.
Create a Twitter feed for a seed as it germinates using the blank tweet template.
Understand that seeds will not germinate until the conditions for germination (especially moisture) are met.
NB: Seeds will require some type of moist air to germinate - a mini ‘greenhouse’ is a great solution.
Brainstorm how you will keep the climate for your germinate - NB: Seeds will require some type of moist air to germinate.

Research designs for miniature greenhouses and pin to a class Pinterest board.
Read to reconfirm the concept of independent and dependent variables for you as an educator.

Explain to students that they are about to see who can make grass grow the fastest and the tallest.
Draw the parallel that farmers must do this every day to make sure their cows have enough to eat.
Re-visit the factors that influence germination and reflect on why the atmosphere must be moist.
Review the Pinterest board of greenhouse proposals and select a design for the control.
Construct the greenhouse(s) as a class using the design guidelines from your chosen pin design.
(NB - every experiment will require an identical greenhouse unless it is selected as an independent variable).
Control seeds will be in the woolmat, in the pot, inside the selected greenhouse design, have soil, 30 ml of water a day and be in plain sunlight.
Introduce the Cows Moo Softly Mnemonic and Fact Sheet.

Explain to students that they will be selecting one thing only (independent variable).
Explain that they will measure how quickly and how tall the grass grows (dependent variables).

Students can check they have completed the task successfully by:
- Creating a twitter feed in the narrative voice of a seed as it goes through stages of germination.
- Constructing a miniature greenhouse to be used in the experiment.
- Conducting an experiment that investigates the impact of an independent variable on a dependent one.

SUCCESS CRITERIA

PRINCIPLES
Learning to learn
Coherence

VALUES
Innovation
Inquiry and curiosity
Ecological sustainability

KEY COMPETENCIES
Thinking
Participating and contributing

LEARNING AREAS
Science
Mathematics and Statistics

WORD BANK
Independent Variable
Dependent Variable
Hypothesis
Conclusion

KEY CONCEPTS
Germination
Variables
A Fair Test
Controls

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