CLASSROOM ACTIVITIES

STAGE 2 LESSON FOUR

Fruit & vegie experiments

Students will learn about the scientific method through doing their own experiment. They can learn about capillary action, ripening/rotting processes, or the effect of packaging. Students can present their findings to the class, school or even the community.

Learning Outcomes

- **ST2-1WS-S** questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations
- **MA2-DATA-01** collects discrete data and constructs graphs using a given scale
- **ST2-2DP-T** selects and uses materials, tools and equipment to develop solutions for a need or opportunity

Resources and Preparation

Resources

Video (V)

- Video 12 - Scientific Method for Kids (start at 0:48)
- Video 13 - The scientific method
- Video 14 - What are the steps of the scientific method?

Worksheets (WS) and Powerpoints (PTT)

- Worksheet 12 - Fruit & Veg experiments
- PowerPoint 3 - Experiments
- Teacher Information Document (TID)

Materials

- See TID for specific material lists per experiment
- Classroom poster

Preparation

Prior to lesson

- See TID for specific preparation instructions per experiment

Introduction (10 mins)

Explain to the students that you will be doing a science experiment with fruits/ vegetables. Ask the students if anyone can identify what a science experiment is. Follow up with questions such as: 'are there any specific rules when doing an experiment'? To learn about the scientific method, go over PPT2 and/or the class can watch V12. (Watch V13 for a more in-depth explanation.) Need an example to show the students? Watch V14.

Activity (60+ mins, across multiple days)

1. Divide the class into groups of 3-4. Choose one, or multiple experiments from the Week 4 TID section for the students to work on.
2. Students can use the experiment description in the TID, or can use their computers to research and design the experiment themselves. They will use WS12 to guide them through their research steps.
3. Over the time required for the experiment, students continue collecting data and making notes on WS12. After the last measurement, they write their findings and conclusions.
4. When finished, the groups of students share their findings to the class. Fill out Week 4 on the classroom poster using the notes and findings from one of the experiments.
5. As an option, students can create posters or PowerPoint/Google slides about their experiment and present to the class/school/community (perfect to combine this with an organised School Science Fair).

Conclusion (15 mins)

Ask the students if anyone can summarise their experiment for the rest of the class. What data did they collect and what were their findings? Was it what they expected? Can they explain WHY they found what they did? Other students can ask questions about the experiments.

Assessment

For: Students understand how to do their experiment and can independently design an experiment.

As: Student successfully complete their experiment.

Of: Students collected data, made predictions and formed conclusions about their experiment.

Differentiation

Extend: Students can independently create posters, presentations or news reports about their experiment and findings.

Simplify: Do only one experiment with the whole class.

School/Home Link

Invite the whole school community to a science fair, where the students can present their experiment.

Duration | 85+ minutes

Fruit & vegetable science experiment

When food scientists do a science experiment, they follow the *scientific method*. These are the scientific method steps:

1. Think of your question: what do you want to know?
2. Write down what you think will happen
3. Make a plan for your experiment, gather everything you need and start your experiment
4. Carefully gather your data: write down your measurements and observations
5. When finished, you can write your findings and make graphs and tables. Look at your data and observations and see if your can answer your question from step 1.
6. Look at what you thought would happen in step 2: did that happen? Or was it different?
7. Share and discuss your findings

Follow the steps below to do your own experiment!

Step 1

Think of a fruit or vegetable science question to answer in your experiment. Write it down below.

Step 2

Write down what you think will happen. What do you *expect* the answer to step 1 will be?

Step 3

Make a plan for your experiment: answer the questions below:

- **Write in detail HOW your will do your experiment**:

(How are you going to answer the question in step 1?)

- **What exactly will you measure?**

(Think about your units of measurement. For example: if you are measuring 'level of mould', how will you measure that? You could for example rate the level of mould from 0 to 10, with 0 being no mould and 10 being ALL mold. But as long as you keep it the same every measurement, you can think of your own unit of measurement)
(you can measure multiple things!)

- **How many times will you do measurements?**

(Your experiment might take a few days, so you can do multiple measurements.)

- **What materials will you need for your experiment?**

(Write anything down you will need)

Step 4

Write down your measurements and observations in the table (you might need another blank page for additional measurements)

Date, time	Measurement 1:	Measurement 2:	Measurement 3:	Other observations

Step 5

Use your observations from step 4 and write your findings below. Answer the questions below and make graphs on the next page

- **What were the differences in measurements at the start and at the end of your experiment?**

(It is clear to see the results of your experiment by writing the measurements at the start and the finish. you can then also calculate and write down the difference)

	Start	Finish	Difference
Measurement 1			
Measurement 2			
Measurement 3			

- **If you compared two things, was there a difference between those measurements?**

(For example, if you compared the mould formation between an apple in a container versus one out in the open; was there a difference between the measurements above?)

- **If you did multiple measurements, did the numbers increase the same between each measurements?**

(For example, did the apples go mouldy at the same rate between the measurements? Or did it for example go slower in the beginning and faster at the end?)

Step 5

Measurement ....

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Measurement ....

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Step 5

- **In a few sentences, what were your findings?**

- **What does that mean?**

(Now that you know the results, what will you do with that information?)

Step 6

- **Were your findings the same as your prediction in step 2? If not, what was different?**

- **Can you think of any follow up experiments? Is there anything else you'd like to know?**

Step 7

When we do experiments and learn something new, it's important to tell others about it. So tell your teachers, classmates, parents and friends about your findings!