SeedPop! Teacher's Guide

General Description

SeedPop! is a teacher-led, five-session plant science outreach programme designed for 5th and 6th-class students. It introduces seed germination, environmental stress and seed priming through hands-on scientific investigation, connecting plant science to real-world challenges such as climate change, sustainable agriculture and food security.

Using the story of Liam and Lisa, two farmers whose crops are struggling with drought and high salt concentrations in the soil, students take on the role of scientists to investigate whether seed priming can improve seed germination and root growth under stressful conditions.

The programme concludes with a Scientific Conference, where students meet visiting scientists and discuss their research.

SeedPop! provides ready-to-use slides, a Teacher's Guide, Lab Books and experiment kits, with guidance and support from the project team.

On completion of SeedPop!, your students will…	
Understand the biological processes underlying seed germination	Have hands-on experience observing the effects of environmental stress, such as high salt, on plant growth
Have gained knowledge of sustainable agricultural practices that support improved crop performance	Understand the role that scientists have in helping to solve big world issues such as climate change and food security

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SeedPop! Classroom Kit Box

Learning Objectives & Outcomes

The SeedPop! programme has been designed for students in 5th and 6th class- a key transition period when learners begin forming long-term attitudes toward science and STEM. This age group is also especially receptive to real-world learning through exploration and hands-on activities.
The programme also supports you, the teacher, with a fully-resourced, low-prep kit aligned with the Science, Technology, Engineering, and Mathematics (STEM) Education curriculum. To bring the SeedPop! experience to your classroom, you will receive guidance and training from a dedicated project manager, helping to support this experience of delivering STEM education.

Learning Objectives

By the end of this series of activities, students will;

- Understand the biological processes underlying seed germination.
- Understand how to observe the effects of environmental stress on seed growth.
- Apply the scientific method through a hands-on experiment.
- Understand sustainable innovations for agriculture

Learning Outcomes

By the end of this series of activities, students will be able to;

- Explain the process of seed germination
- Explain the role of priming in plant growth
- Explain why priming is important in agriculture
- Explain the role of agriculture in food security
- Explain the impact of climate change on agriculture
- Conduct a germination experiment using the scientific method (forming a research question, setting up the experiment, observing, recording root growth, and analysing results)
- Analyse, discuss, and present their scientific findings

Expected Impact on Science-Related Attitudes

Beyond scientific knowledge, the SeedPop! programme aims to;

- Broaden children's perception of who can be a scientist.
- Develop an understanding of how scientists contribute to solving real-world problems.





Students at Scoil Chaitríona Senior taking part in the SeedPop! pilot.

Curriculum Connections

The SeedPop! Science Learning Programme has been designed to support the Science, Technology, Engineering and Mathematics (STEM) education curriculum for primary school students. It provides opportunities for students to develop their curiosity, STEM skills, conceptual and procedural understanding, critical thinking, and capacity to communicate ideas using disciplinary language.

STEM Education Strands	STEM Education Elements	Key Competencies
Nature of STEM: Identify and appreciate the key features of the Nature of Science, Technology, and Engineering. Explore and discuss topical STEM issues in Ireland and globally	Exploring and understanding	Being an active citizen
Living Things: Demonstrate an awareness of how learning about living things connects to the wider field of Biology and related 'Bio' disciplines.	Creative and critical thinking	Being an active learner
	Applying and problem-solving	Being a communicator and using language
	Evaluating and communicating	

Real-World Connections

SeedPop! uses the story of Liam and Lisa, two farmers whose crops are struggling with drought and high salt concentrations in the soil, to connect scientific concepts to real-world agricultural challenges. Throughout the programme, students take on the role of scientists, investigating whether seed priming could help Liam and Lisa grow healthier crops.

Through the SeedPop! activities, students develop:

- A better understanding of seed germination, plant growth and the science of agriculture.
- Awareness of how plant science can help address global challenges such as climate change and food security.
- An appreciation of how scientific research can contribute to more sustainable agriculture.



Liam and Lisa introduce the real-world farming challenges explored in SeedPop! (Image from the SeedPop! Overview Video).

General Organisation

The SeedPop! Science Programme is structured across five sessions, each lasting between 20 and 60 minutes.

Session	Topics to be Explored	Duration
Session 1	Understanding seed germination, the impact of climate change on crop growth (drought and salinity) and understanding the ways scientists are working to address the challenge of climate change on agriculture (priming)	60 mins
Session 2	Introduction to the Scientific Method, learning how to form a research question, and establishing a hypothesis for the experiment	45 mins
Session 3	Seed experiment setup (Day 0) & root measurements (Day 3, 6 & 7)	60 mins (Day 0), 30 mins (Day 3) & 20 min seed checks (Day 6 & 7)
Session 4-1	Graphing results and analysing data	60 mins
Session 4-2	Presenting your research findings	60 mins
Session 5	Scientific Conference with visiting scientists	60 mins

Resources Provided

The SeedPop! programme provides:

- Experiment kits containing all required materials
- Digital teaching resources, including:
  - Teacher's Guide (lesson plans, theory manual, experiment protocol & Session 5 Running order)
  - Session slides
  - Lab Book (a student handbook containing worksheets and experiment protocol)
  - Evaluation tools and surveys

Download teaching resources from the SeedPop! Teacher Resources page (https://www.cellexplorers.com/seedpop-teacher-resources) as required

SeedPop! Lesson Plans

SeedPop! consists of five learning sessions, each with its own activities and learning outcomes. Sessions range from 20–60 minutes and are designed to be delivered over 3–4 weeks. The experiment in Session 3 runs over seven days to allow for seed germination, root growth and measurements.

In Session 5, visiting scientists join students for a Scientific Conference, where students present and discuss their findings.

Session 1

Understanding seed germination, the effects of environmental stress on crop growth, and how seed priming can help plants cope with challenging conditions.

Duration

60 minutes

Topics to be explored in this session;

- Understanding Seed Germination
- Climate Change & its impact on crop growth – learning about drought and salinity
- Priming of seeds - a method scientists are working on to address climate change challenges

Learning Outcomes

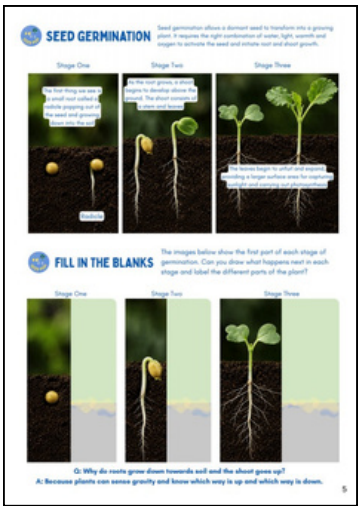
- Understand the seed germination process
- Discover the impact of environmental stresses, particularly climate change, on plant growth
- Define seed priming

Resources Provided

- SeedPop! Session 1 slides
- Lab Book containing;
  - Graphic illustration of the seed germination process with key terms clearly labelled
  - Worksheet: graphic illustration of the seed germination process with missing pieces that the students must fill in to complete the full process.
- Two card games

Lesson Structure

Segment	Action	Duration
Session 1 Slides	Start the lesson with the powerpoint.	45 mins
Card Games	Pause the slides at the indicated point. The kit contains 5 sets of each of the 2 card games. Teachers can choose to play one or both games, swapping them between groups.	5 mins
Worksheet	Found in the Lab Book. Pause the slides at the indicated point. Encouragestudents to complete the seed germination diagram from memory, then check their answers against the Seed Germination illustration.	10 mins



Seed Germination Worksheet (Lab Book)

Advanced preparation required

- Download Session 1 Slides
- Distribute Lab Book
- Have Card games ready to distribute
- **Discussion Prompts**: Refer to the Discussion and Scientific Thinking (p.14) for suggested questions to use throughout the session.

⚠ Important Background Reading

See the Theory Manual (p 11) for more information on:

- Seed germination
- Environmental stress
- The importance of Brassica in agriculture
- Seed priming and treatment

Session 2

Getting to know the Scientific Method, how to form a research question, and establishing a hypothesis

Duration

45 minutes

Topics to be explored in this session;

- Introduction to the Scientific Method
- Forming a scientific research question and hypothesis
- Planning a scientific experiment

Learning Outcomes

- Understand the scientific method
- Understand what a scientific hypothesis is and how to form one from a research question

Resources Provided

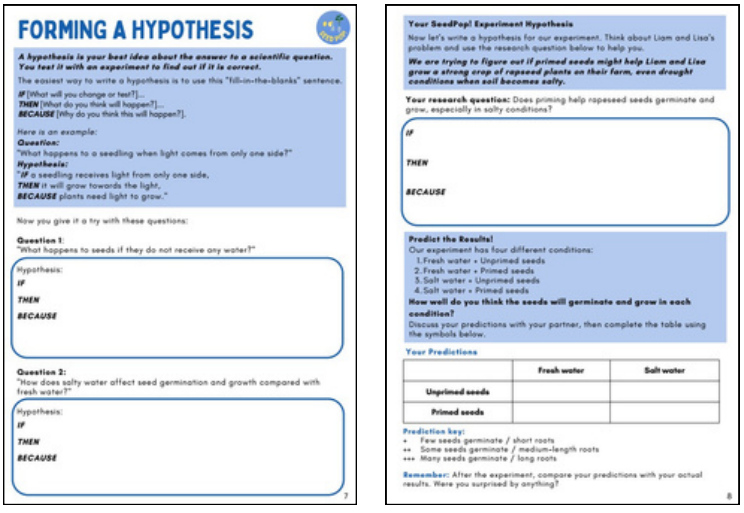
- SeedPop! Session 2 Slides
- Lab Book containing;
  - Scientific Method at-a-glance diagram
  - Worksheet: Forming a Hypothesis and Predicting Results

Lesson Structure

Segment	Action	Duration
Session 2 Slides	Start the lesson with the powerpoint.	30 mins
Worksheet	Pause the slides at the indicated point. Students work in pairs to form a hypothesis, then predict the results for all four experimental conditions using the table in their Lab Book.	10 mins (Hypothesis) + 5 mins (Predict results)

Advanced preparation required

- Download Session 2 Slides
- **Discussion Prompts:** Refer to the Discussion and Scientific Thinking (p.14) for suggested questions to use throughout the session.



Forming a Hypothesis and Predicting Results (Lab Book)

Session 3
Seed Priming Experiment

Duration

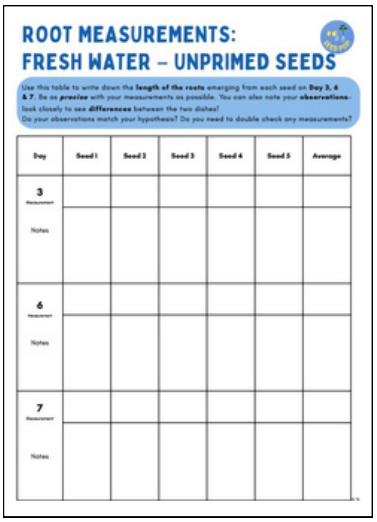
60 mins (Day 0); 30 mins (Day 3); 20 mins each (Days 6 & 7).

Topics to be explored in this session;

- Setting up & starting your SeedPop! Experiment (Day 0)
- Measuring root growth (Days, 3, 6 & 7)

Learning Outcomes

- Understand how to set up a scientific experiment.
- Observe and compare results across different conditions.
- Measure root growth and record data accurately.
- Investigate the effects of seed priming and salinity on rapeseed germination and growth.



Root Measurements Worksheet (Lab Book)

Resources Provided

- SeedPop! Session 3 Slides (experiment setup and root measurement guidance)
- Experiment Kit: all materials required for the experiment.
- Experiment Protocol: Included in the Lab Book and at the end of this Teacher's Guide.

Lesson Structure (Experiment Setup: Day 0)

Segment	Action	Duration
Session 3 Slides	Introduce the experiment and play the setup demonstration video.	20 mins
Materials Setup	Distribute kits and organise pupils into pairs or groups of three.	5 mins
Experiment Setup & Seed Placement	Guide students through the illustrated protocol in the Lab Book, including dish labelling, preparing solutions and placing seeds.	30 mins
Final Checks	Check dish orientation, labelling and placement in a suitable location.	5 mins

Lesson Structure (Measurement & Data Recording: Days 3, 6&7)

Segment	Action	Duration
Session 3 Slides (**Day 3 only**)	Continue the slides and play the root measurement demonstration video.	10 mins
Observation	Encourage students to observe and compare germination and root growth across the four conditions.	5 mins
Root Measurement	Guide students in measuring root growth using the string provided.	10 mins
Data Recording	Ask students to record their measurements in the Lab Book.	5 mins

Advanced preparation required

- Download Session 3 Slides
- Practice setting up the experiment beforehand.

⚠ **Important!**
Practise setting up the experiment before the lesson. For detailed instructions, see the **Experiment Protocol** (p.15)

Session 4-1

Graphing and analysing data

Duration

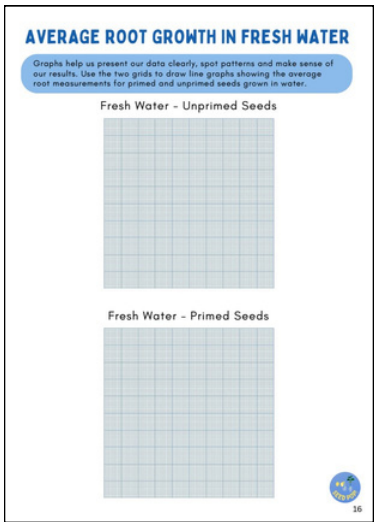
60 minutes

Topics to be explored in this session;

- Calculating average root growth
- Presenting experimental data using graphs
- Analysing and interpreting results

Learning Outcomes

- Calculate average root growth from measurements.
- Create graphs to present experimental data.
- Analyse and compare results across different experimental conditions.



Root Growth Graphing Grids Worksheet
(Lab Book)

Resources Provided

- SeedPop! Session 4-1 Slides: guidance on creating graphs and analysing results.
- Lab Book: Root Measurements Worksheet (for calculating average root growth) and Root Growth Graphing Grids (for graphing experimental results).

Lesson Structure

Segment	Action	Duration
Session 4-1 Slides	Introduce the activities using the slides.	5 mins
Calculating Averages	Ask students to calculate the average root growth for all four conditions on Days 3, 6 and 7, and record the averages in the **Root Measurement Worksheets** in their Lab Book.	15 mins
Graphing the Results	Guide students in plotting average root growth for all four conditions across Days 3, 6 and 7 using the **Root Growth Graphing Grids** in their Lab Book. Follow the slides to label the axes and distinguish conditions using different colours or symbols.	30 mins
Analysing Data	Use the prompts in the slides to guide students in comparing their graphs and observations, interpreting results and drawing conclusions.	10 mins

Advanced preparation required

- Download Session 4-1 Slides
- Check pupils' understanding of **averages** and prepare a brief explanation if needed.
- **Discussion Prompts:** Refer to the Discussion and Scientific Thinking (p.14) for suggested questions to use throughout the session.

Session 4-2

Presenting your research findings: Making a Scientific Poster

Duration

60 minutes

Topics to be explored in this session;

- Communicating scientific findings through a research poster
- Organising and presenting experimental results

Learning Outcomes

- Understand the purpose and structure of a scientific research poster.
- Summarise experimental methods, results and conclusions.
- Create a scientific poster to communicate findings.

Resources Provided

- SeedPop! Session 4-2 Slides: guidance on preparing and presenting a scientific poster.
- Lab Book: **Scientific Poster Guide** and **Comparing All Four Conditions** graphing grid for the poster.

Lesson Structure

Segment	Action	Duration
Session 4-2 Slides	Introduce scientific posters and explain the importance of communicating research findings using the slides.	10 mins
Creating a Scientific Poster	Guide students through each poster section using the step-by-step slides and the Scientific Poster Guide in the Lab Book. Discuss the Introduction, Hypothesis and Procedure as a class, then support student pairs in presenting their own Results and Conclusions.	50 mins

Advanced preparation required

- Download Session 4-2 Slides.
- Prepare one sheet of A3 poster paper for each student pair.
- Familiarise yourself with the step-by-step poster guidance in the slides.
- Discussion Prompts: Refer to the Discussion and Scientific Thinking (p.14) for suggested questions to use throughout the session.



Scientific Poster Guide (Lab Book)

Session 5

Scientific Conference

Duration

60 minutes

Topics to be explored in this session;

- Sharing experiment findings with classmates and visiting scientists

Learning Outcomes

- Present scientific findings using a research poster.
- Discuss experimental results with visiting scientists.
- Learn about scientists and their work.

Resources Provided

- SeedPop! Session 5 Slides: prompts to guide the Scientific Conference.
- Teacher's Running Order & MC Notes (p.19): guidance for facilitating the conference.

Lesson Structure

Segment	Lead	Action	Duration
Recap	Teacher	Briefly recap the SeedPop! investigation.	5 mins
Meet the scientists	Scientists	Invite each scientist to introduce themselves (1.5 min each).	10 mins
Poster discussions	Scientists at tables	Scientists visit each table to discuss students' experiments, results and posters.	20 mins
Conference stories	Scientists	Bring the class together. Scientists share short stories about their work and answer questions.	15 mins
Class reflection	Teacher	Invite 1–2 students to share reflections on their SeedPop! experience.	3 mins
Ask the scientists	Teacher / scientists	Open Q&A. Encourage students to ask questions about science and scientists' work.	5 mins
Closing & feedback	SeedPop! team / teacher	Close the conference, distribute certificates and collect brief student feedback.	2 mins

Advanced preparation required

- Download Session 5 Slides.
- Arrange desks into islands, ideally with three student pairs per table, where possible.
- Have students' A3 research posters and Lab Books ready.

Theory Manual

The Theory Manual provides background information on key scientific concepts covered in the SeedPop! programme:

1. Seed germination
2. Environmental stress
3. The importance of Brassica in agriculture
4. Priming & Seed Treatment

Topic 1: Seed Germination

Seed germination is a pivotal process in agriculture, marking the transition from a dormant seed to a vigorous seedling capable of sustained growth. Germination unfolds in several phases; water uptake softens the seed coat, allowing the radicle, the small starting root, to emerge and establish the root system. Subsequently, the shoot emerges, forming the initial leaves for photosynthesis. These phases mark the seed's transformation into a seedling, the young plant formed after germination, preparing it to grow into a mature plant.



Brassica species, such as Brassica rapa (included in the kit) or important crops such as oilseed rape (Liam's and Lisa's crop), exhibit unique germination characteristics influenced by genetic and environmental factors. Brassica seeds are renowned for their rapid germination rates and uniform seedling emergence, making them ideal candidates for educational studies on seed biology. Understanding Brassica germination is essential for optimizing how the seedling is established in the field, ensuring uniform crop stands, and maximizing yield potential.

Topic 2: Environmental Stress

Climate change has significant effects on plants by altering temperature and precipitation patterns, which in turn affect plant growth, reproduction, and distribution. The increasing frequency of extreme weather events, such as droughts, floods, and heatwaves, places further stress on plants, potentially leading to changes in ecosystems and biodiversity loss.

Salt stress, caused by high soil salinity, poses a significant threat to agricultural productivity worldwide. Too much salt in the soil makes it harder for plants to absorb water and can damage their cells. Salt-affected soils limit water uptake, impair nutrient absorption, and compromise plant growth and development, ultimately reducing crop yields and threatening food production.

By simulating salt stress in the germination kit, students gain firsthand experience in observing the detrimental effects of salinity on Brassica seed germination and seedling growth. Understanding salt stress is crucial for developing resilient crop varieties, implementing soil management practices, and limiting the impact of salinity on agriculture.



Topic 3: The importance of Brassica in agriculture

Brassica is a key genus within the Brassicaceae family, including several important crops that play significant roles in agriculture and cuisine. Species such as Brassica rapa (mustard), Brassica napus (oilseed rape), and Brassica oleracea (cabbage, cauliflower and broccoli among others) are grown for their edible parts like leaves, roots, and seeds.

Vegetables from this group, including broccoli, cabbage, and kale, are highly nutritious, offering vitamins, minerals, and antioxidants that are crucial for a healthy diet. Additionally, Brassica oilseeds, like canola and mustard, are essential for producing edible oils, biodiesel, and livestock feed.
Brassica crops also serve as cover crops, providing benefits such as preventing soil erosion, suppressing weeds, and recycling nutrients, thus enhancing the sustainability and resilience of farming systems.

The diverse uses and adaptability of Brassica crops make them vital for global food security, economic growth, and environmental sustainability.









Topic 4: Priming & Seed Treatment

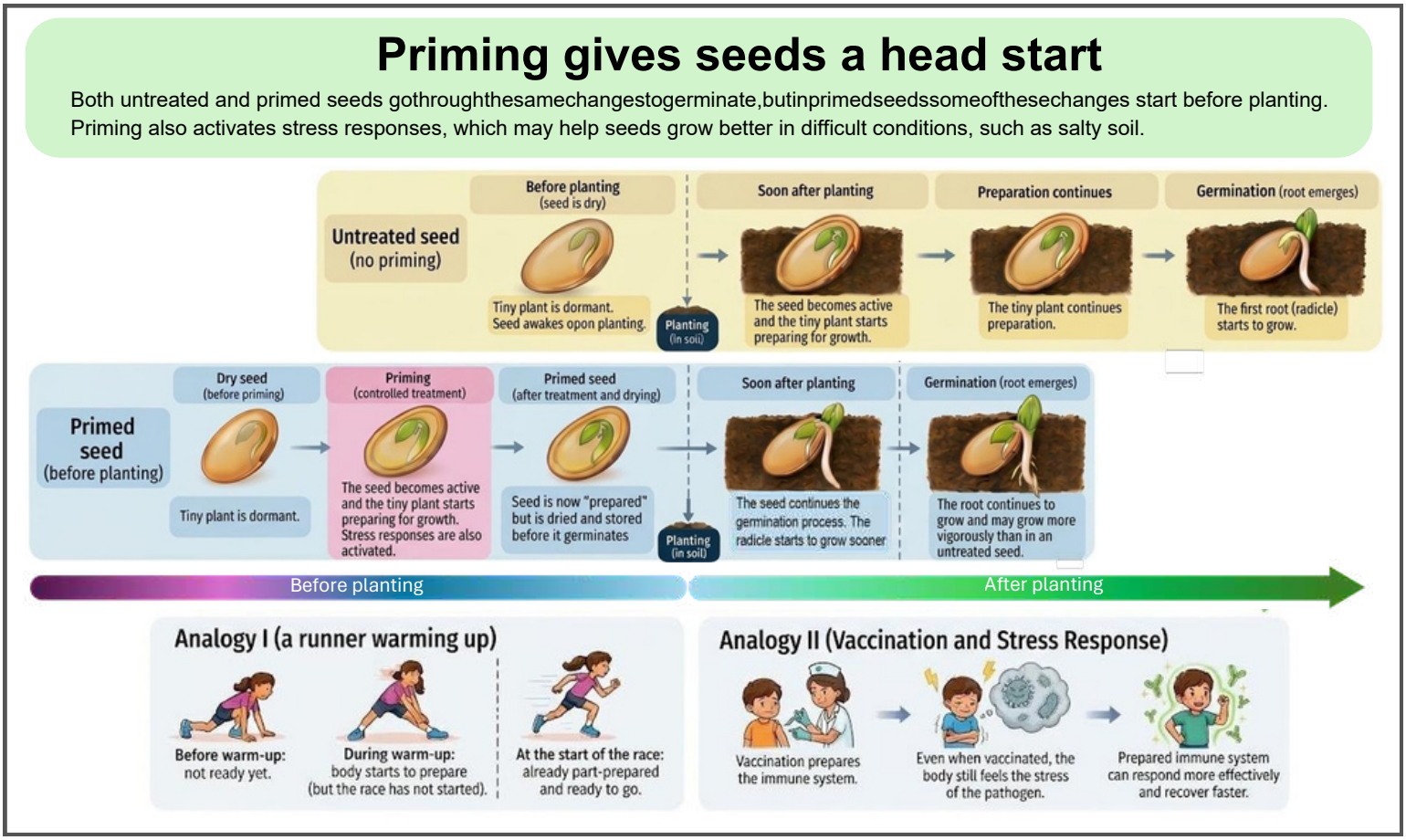
Osmopriming is a type of seed priming used to prepare seeds for germination and improve their ability to grow under stressful environmental conditions. It involves soaking seeds for a controlled period in a solution containing a dissolved substance such as polyethylene glycol (PEG).

PEG is not a nutrient or fertiliser. Instead, it reduces the availability of water to the seeds, creating drought-like conditions. The seeds absorb just enough water to begin the early stages of germination, but not enough for the first root (radicle) to emerge. These conditions may also activate stress responses that help seeds prepare for stressful environments.

After priming, the seeds are dried. Some of the changes that occur during priming may remain in the seeds, a phenomenon sometimes called stress memory. When planted, primed seeds may germinate faster and more uniformly, producing more vigorous seedlings with improved growth and stress tolerance. These benefits can help improve crop establishment and agricultural productivity, particularly under challenging conditions such as drought or high salt levels in the soil.

Seed priming offers a promising approach to more sustainable agriculture. Because the treatment is applied directly to seeds before planting rather than across entire fields, priming may help reduce the need for some additional agricultural treatments, including certain chemical applications such as fertilizers, a main environmental polluter. This could lower costs, reduce environmental impacts and help farmers grow more resilient crops while using resources more efficiently.

In SeedPop!, students investigate the effects of osmopriming on seed germination and root growth under different environmental conditions, exploring how seed treatment technologies could contribute to more sustainable agriculture.



How seed priming prepares seeds for germination and helps them respond to environmental stress.

Encouraging Discussion and Scientific Thinking

Simple questions can help students recall key concepts, engage with new ideas and develop scientific thinking. The following prompts can be used flexibly throughout the programme.

Content Knowledge: Recall and Understanding

- Before a lesson or video: “What do you think we'll learn about today?”
- After a video: “Tell me three things that stood out to you.”
- Revisiting previous learning: “What did we learn last time?” or “Give me one scientific word you remember.”
- At the end of a lesson: “What's one new thing you learnt today?”

Tip: *The recap slides at the beginning and end of each session can be used as reference points. Try asking students what they remember before showing the answers.*

Scientific Thinking: Questioning and Interpreting Evidence

- Ask why: “Why do we compare four different conditions?” or “Why is it important to keep everything else the same?”
- Look for patterns: “What trends can you see?” or “What do the results tell us?”
- Question unexpected results: “Does anything look unusual? Could there have been a measurement, recording or calculation error?”
- Encourage reflection: “Did the results support our hypothesis?” or “What might we do differently next time?”

Tip: *Unexpected results are part of science. Encourage students to check their data, consider possible explanations and recognise that results do not always match predictions.*

References

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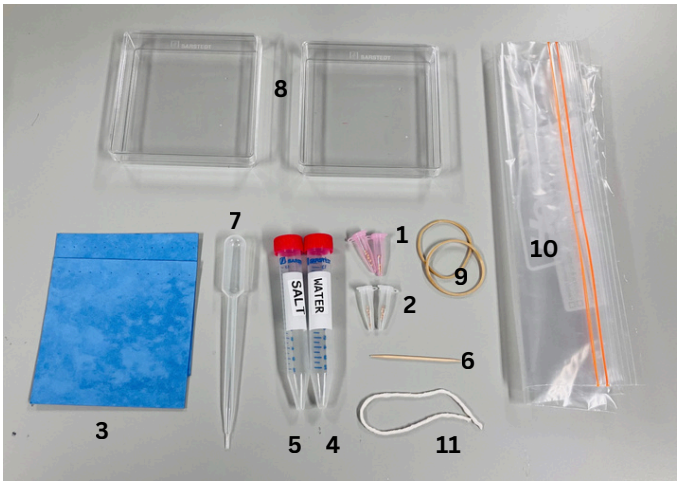
SeedPop! Experiment Protocol

Teacher Note:
Guide students through the experiment one step at a time.
Check that everyone has completed each step correctly before moving on.

Materials Checklist

Check that you have everything you need before starting your experiment.

1. 2 small tubes, each containing 5 primed seeds (pink tubes marked P)
2. 2 small tubes, each containing 5 unprimed seeds (transparent tubes marked UP)
3. 2 square blue filter paper sheets
4. 1 empty tube (15 mL)
5. 1 tube with salt (15 mL)
6. 1 toothpick
7. 1 transfer pipette
8. 2 square petri dishes
9. 2 rubber bands
10. 1 plastic bag
11. 1 measuring string



The following items are also needed but are **not included in the kit**:

- Permanent Marker
- Cup/jug of water
- Ruler (minimum 10 cm)

Experiment Set-up (Day 0)

Step 1: Label the Dishes

- Label one Petri dish lid **Water** and the other **Salt**.
- Draw **a line down the middle** of each lid.
- Label one half **UP** (unprimed) and the other **P** (primed).



- Label the Petri dish **lids**, not the bases.
- Keep the **open side facing UP**!

Teacher Note: Fresh water is the control condition, while salt water is the stressful condition. Unprimed seeds provide a comparison with primed seeds.

Step 2: Prepare the Solutions

- Use the transfer pipette to add **12 mL** of water to each tube.
- Shake the salt tube until the salt has completely dissolved.

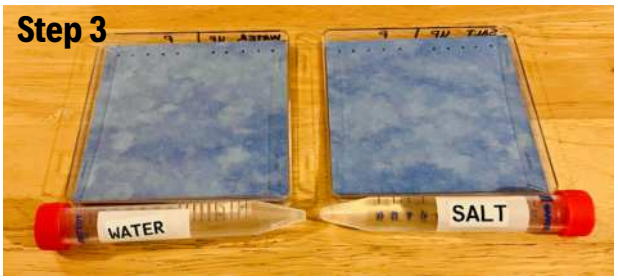


Use the pipette to add **12 mL** of water

Teacher Note: Check that students add exactly 12 mL of water to each tube, using the transfer pipette.

Step 3: Prepare the Filter Papers

- Place one blue filter paper inside each Petri dish lid.
- Spread fresh water over the filter paper in the Water dish and salt solution over the filter paper in the Salt dish.



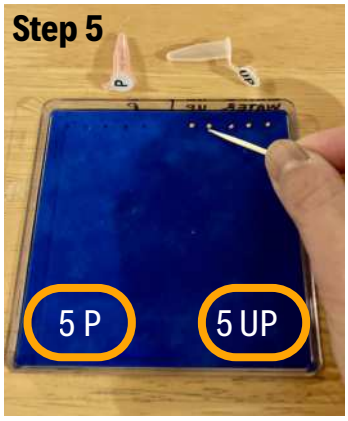
Step 4: Remove Air Bubbles

- Gently smooth the filter papers to remove any trapped air bubbles.



Step 5: Place the Seeds

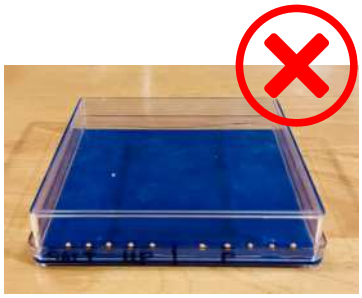
- Using the **toothpick**, place **5 primed seeds** and **5 unprimed seeds** on the filter paper **in each dish**.
- Keep the seeds on their labelled sides and place them in the small holes on the filter paper.



Step 6: Close the Dishes

- Gently place the **dish bases** over the seeds in the labelled lids.
- Secure each dish with a rubber band.
- **Do not squash the seeds.**





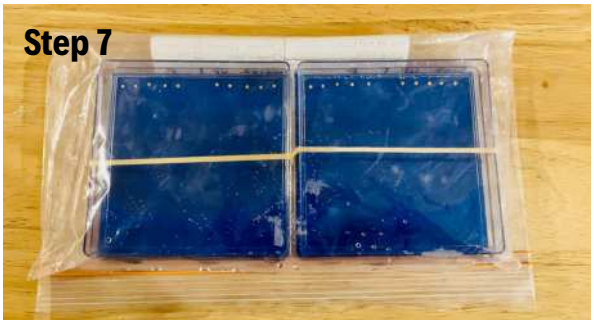
Keep the **open side facing UP**!

Teacher Note: Photos show yellow Brassica rapa seeds, chosen for visibility against the blue filter paper. Kits contain rapeseed (Brassica napus), a related species in the same Brassicaceae family; the procedure is unchanged.



Step 7: Place in the Plastic Bag

- Place both dishes inside the plastic bag.
- Fold any extra plastic behind the dishes and write your names on the bag.



Teacher Note: The plastic bag helps retain moisture and prevents the filter paper from drying out during germination.

Step 8: Position Your Experiment

- Stand the experiment upright near a window.

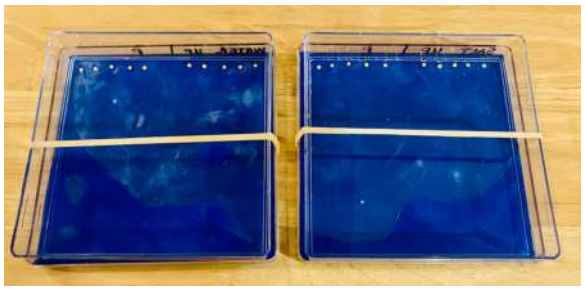


Teacher Note: Support the dishes with a book or another stable object if needed to prevent them from falling over.

Observing Changes (Days 3, 6 & 7)

On each observation day:

1. Bring your experiment to your desk and place the two dishes **side by side**.
2. **Look** carefully.
   - Which seeds have **germinated**?
   - Are some **roots** longer than others?
3. **Compare** the **primed** and **unprimed** seeds in **fresh** and **salt** water.
4. **Record** what you observe in your Lab Book.



Fresh Water
UP | P

Salt Water
UP | P

Teacher Note:
Before measuring, encourage students to compare all four conditions and discuss differences in germination and root growth. Ask them to consider whether their observations match their predictions.

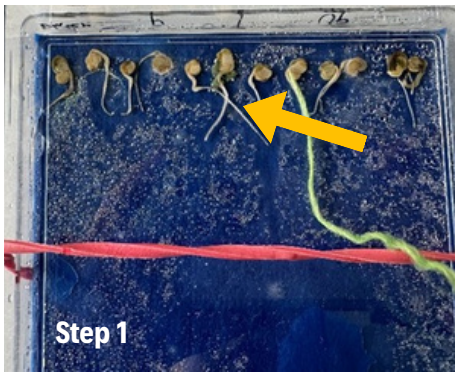
Measuring Root Growth (Days 3, 6 & 7)

Some roots may be very short, and some seeds may not have germinated yet. This is normal.

Do not open the Petri dishes when measuring the roots.

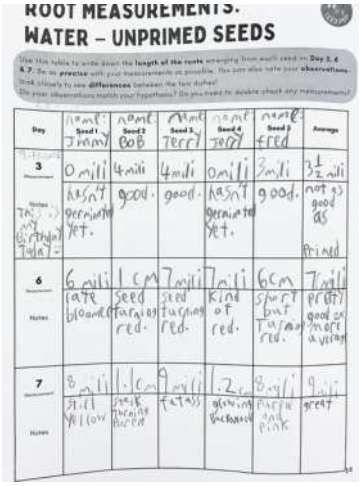
How to measure a root:

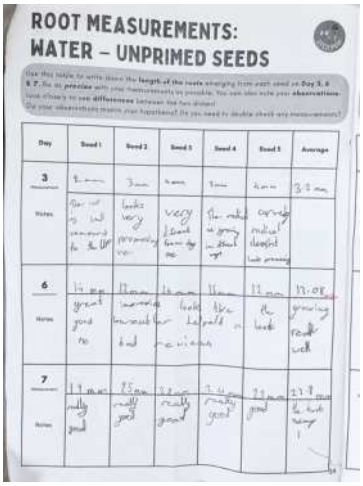
1. **Place the string alongside the root**, following its curve from the seed to the root tip.
2. **Mark** the root length on the string **with your fingers**.
3. **Straighten the string against a ruler** and read the length in millimetres (mm).
4. **Record** the measurement in your Root Measurement Table.
5. Repeat for each seed with a visible root.





If there is no root to measure, record your observation in the table. Repeat the observations and measurements on Days 6 and 7.





Examples of students' root measurements and observation notes from the SeedPop! Pilot 2.

Scientific Poster Guide (Session 4-2)

TITLE: GIVE YOUR POSTER AN INTERESTING TITLE

Authors: Your names

INTRODUCTION:

WHY DID YOU DO THIS EXPERIMENT?

EXPLAIN THE PROBLEM LIAM AND LISA ARE FACING ON THEIR FARM.

HYPOTHESIS:

WHAT DID YOU PREDICT WOULD HAPPEN, AND WHY?

WRITE YOUR HYPOTHESIS USING IF, THEN AND BECAUSE.

PROCEDURE:

HOW DID YOU DO YOUR EXPERIMENT?

BRIEFLY EXPLAIN HOW YOU TESTED YOUR HYPOTHESIS.

RESULTS:

WHAT DID YOU FIND OUT?

CUT OUT AND PASTE YOUR GRAPH COMPARING ALL FOUR EXPERIMENTAL CONDITIONS.

WHAT DIFFERENCES CAN YOU SEE?

CONCLUSION:

WHAT DO YOUR RESULTS TELL YOU?

DID THE RESULTS SUPPORT YOUR HYPOTHESIS?

HOW COULD YOUR FINDINGS HELP LIAM AND LISA?

Teacher's Running Order & MC Notes (Session 5)

SeedPop! Scientific Conference

SESSION5•TEACHER'SRUNNINGORDER&MCNOTES

Slides	Segment	Lead	Action	Duration
1-4	Recap	Teacher	Briefly recap the SeedPop! investigation.	5 mins
5	Meet the scientists	Scientists	Invite each scientist to introduce themselves (1.5 min each).	10 mins
6	Poster discussions	Scientists at tables	Scientists visit each table to discuss students' experiments, results and posters.	20 mins
7-12	Conference stories	Scientists	Bring the class together. Scientists share short stories about their work and answer questions.	15 mins
13	Class reflection	Teacher	Invite 1–2 students to share reflections on their SeedPop! experience.	3 mins
14	Ask the scientists	Teacher / scientists	Open Q&A. Encourage students to ask questions about science and scientists' work.	5 mins
15	Closing & feedback	SeedPop! team / teacher	Close the conference, distribute certificates and collect brief student feedback.	2 mins

MC PROMPTS / Suggested wording (adapt to your class)

Opening / recap

"Welcome to our SeedPop! Scientific Conference! We've been investigating how seed priming affects germination and root growth in fresh and salty water. Today we'll share what we found with visiting scientists."

Introduce the scientists

"Let's meet our visiting scientists from the University of Galway. They'll tell us a little about themselves and what they do."

Move to table discussions

"Now it's your turn to be the scientists! At your tables, use your posters to explain your hypothesis, procedure, results and conclusions. Compare what your groups found and remember: unexpected results are part of science too."

Bring everyone back / conference stories

"Thank you for sharing your investigations. Scientists also present their findings at conferences. Let's hear what that's like from our visitors."

Reflection

"What's one thing you'll remember from SeedPop!? Did anything surprise you? Has meeting scientists changed how you think about science?"

Q&A

"Now you can ask our scientists anything you're curious about. There are no silly questions!"

Close

"Thank you to our visiting scientists and to all our young scientists for sharing their work." [Invite SeedPop! team to close and present certificates; collect quick feedback if time.]

Practicalreminder: Teacheractsas MC andmanages transitions.Scientistsfacilitatethetablediscussions;theSeedPop! team leads the final close. Timings are approximate.