



















Plants: What's Inside a Seed?

Aim <p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Observing closely, using simple equipment.</p> <p>To look closely at the parts of a seed that will grow into a plant and explain how it will germinate.</p>		Lesson Duration <p>All timings are approximate.</p> 
Success Criteria <p>I can identify the parts of a seed that will grow into a plant.</p> <p>I can explain what a seed needs to begin to grow.</p> <p>I can explain what 'germination' means.</p>	Key Vocabulary <p>Seed, food, food store, seed coat, germination, conditions, baby plant, roots, shoot, leaves, water.</p>	
Standard School Equipment <p>Magnifying glasses</p> Resources That May Need Purchasing <p>Various types of seeds to observe, such as pumpkin seeds, cress seeds and beans - enough for the class to handle.</p> <p>Large beans, such as kidney beans - at least one per child. Beans should be pre-soaked for 24 hours (you can use frozen beans which will not need to be soaked, but will need thawing).</p> <p>A piece of paper or paper towel, per child, to place their seed on as they dissect it.</p>	Preparation <p>Lesson Pack</p> <p>Differentiated Inside a Seed Activity Sheet - per child</p> Disclaimer <p>Some ingredients and/or materials used might cause allergic reactions or health problems. You should ensure that you are fully aware of the allergies and health conditions of those taking part. If you have any concerns about your own or somebody else's health or wellbeing, always speak to a qualified health professional. Activities listed within the resource should always be supervised by an appropriate adult. Please make sure you are aware that children may put items into their mouths, and that they should wash their hands afterwards. By using this resource, you acknowledge that it is the responsibility of supervising adults to ensure the safety of children in their care and that we will accept no liability as a result of the activity.</p>	

Prior Learning: In the previous lesson, children considered what they thought plants needed to stay healthy. In year 1, they learnt about the parts of a plant.

Learning Sequence

	Remember It: As a class, observe the class plant that was planted in the previous lesson. Use the Class Plant Diary to record any changes in growth. Use the Lesson Presentation to recap what the children know about the parts of a plant.	
	Growing, Growing, Grown: Read pages 7-10 of the Growing, Growing, Grown eBook together to learn about more things that all living things have in common, including nutrition, waste removal and reproduction (in the previous lesson, we also read about growth and movement).	
	Seeds: Show the children some different types of seeds, allowing them a little time to handle them (there are also photographs on the Lesson Presentation that can be discussed if you do not have different types of seeds available). Discuss how different plants will grow from different seeds. Ask the children what they think might be inside the seeds. <p>Can the children explain their ideas about what they think is inside a seed and why?</p>	
	What's Inside a Seed? Use the Lesson Presentation to introduce the children to the inside of a seed, including the location of the baby plant (embryo), and explain how seeds germinate. Look at the inside of the seeds on the Lesson Presentation carefully. Children can discuss with their partner which parts of the inside of the seed they think will grow into which parts of a plant. <p>Can the children identify the part of a seed that will grow into a new plant?</p>	
	Dissecting a Seed: Explain to the children that they will be dissecting a seed to look inside it. Demonstrate dissecting a seed by following the instructions on the Lesson Presentation as the children follow along. Model how to locate the baby plant and the food store, using a magnifying glass to look closely. <p>Can the children identify the parts of a seed that will grow into a plant?</p>	

	<p>Inside a Seed: After dissecting and observing their bean, children complete the Inside a Seed Activity Sheet.</p> <p>Can the children identify the embryo (baby) plant and its food store? Can they explain how each part is used during germination?</p> <div style="display: flex; justify-content: space-between;"> <div> <p> With support, children label the diagram of the seed on the Inside a Seed Activity Sheet. They explain to an adult the functions of some parts.</p> </div> <div> <p> The children complete the Inside a Seed Activity Sheet. They label the parts of the seed and explain the functions of the parts.</p> </div> <div> <p> The children complete the Inside a Seed Activity Sheet. They draw a diagram of their seed, label the parts of the seed and explain the functions of the parts.</p> </div> </div>	
	<p>How Do Seeds Grow? Use the Lesson Presentation to discuss with the children how seeds begin to germinate and the things they need to do so.</p> <p>Ask the children to think of the seeds they planted in the last lesson. Ask: Do you think they will all grow? Which ones do you think won't? Why?</p> <p>Can the children explain the conditions needed for seeds to germinate and explain which of their seeds they think will not grow?</p>	

Explore it

Investigate it: Children investigate what the inside of other seeds look like, comparing them to the seeds dissected during the lesson. How are they similar? How are they different?

Observe it: Children can grow fast growing seeds such as cress and beans on cotton wool or paper towels to closely observe how the shoot and roots grow from the seed. Children could create a record of this through drawings, diagrams, notes and/or photographs.

Reason it

Children discuss **Reasoning Card 2 What's Inside a Seed?** Children name the parts of a seed and compare two different types of seeds.

Assessment

Scientific Knowledge	
Working Towards the Expected Level With support, children can dissect and observe a seed, explaining which parts will grow into a plant and which part is its food.	Children:
Working At the Expected Level Children can dissect and observe a seed, explaining which parts will grow into a plant and which part is its food.	Children:
Working At Greater Depth Children can dissect and observe a seed, explaining which parts will grow into a plant and which part is its food. They can begin to explain how each part of the seed is used.	Children:
Working Scientifically	
Working Towards the Expected Level With support, children observe the natural world around them.	Children:
Working At the Expected Level Children observe the natural world around them.	Children:
Working At Greater Depth Children observe the natural world around them and begin to explain their observations using simple scientific language.	Children: