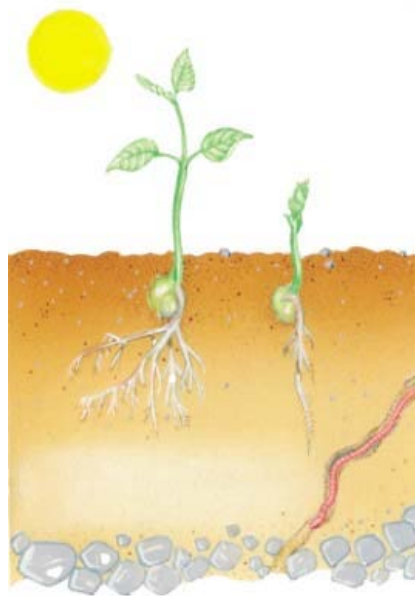


Plant Life Cycles

Academic Content Standards

- Make a plan to observe the life cycles of plants while they grow and observe them.
- Observe a variety of seeds and discover similarities and differences among them, as well as learn under what conditions seeds sprout.
- Comprehend the process through which seeds sprout and grow into plants and the plants produce flowers and fruit, as well as the accompanying changes.
- Compare the lifecycles of different plants and recognize that each plant has a unique life cycle.



Name: _____

Student Number: _____

Homeroom: _____



Why do many plants make seeds?



Write and/or draw pictures to show what you already know about this question.



Look at some seeds with a magnifying glass. Draw a picture of the seeds which includes all the details you see and feel. Use a ruler to get the measurements right. Then describe the seeds in English.



Seed	Picture	Description



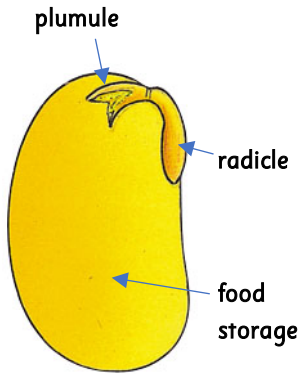
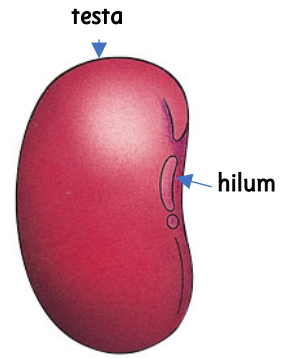
Share Your Results.

Discuss your ideas and findings with your classmates. Were there any interesting observations?



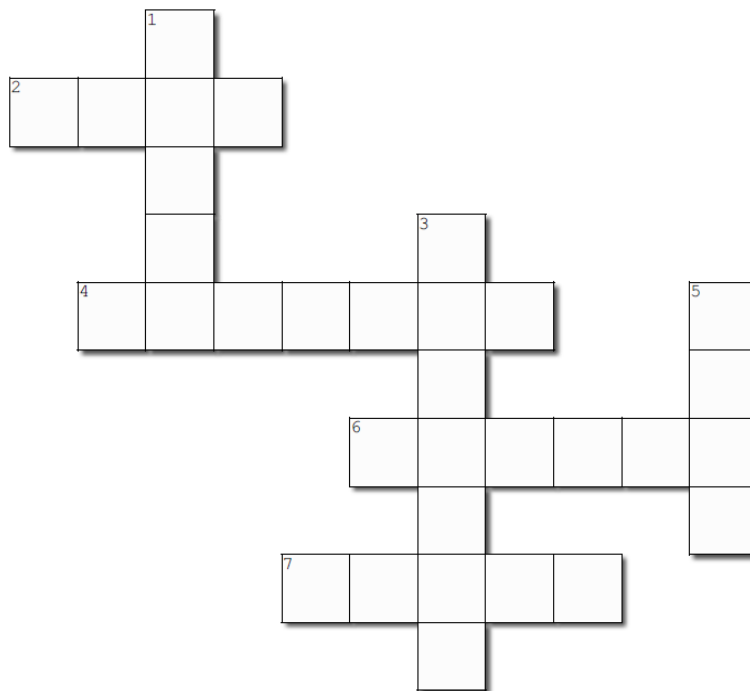
Seeds come in many different sizes, shapes, and colors, but they all have the same important job. They will grow into a new plant.

The seed is protected by a hard coat called a testa. There is also a mark called a hilum on its surface which shows where the seed was connected to its parent plant before.



The plant that is developing inside the seed is called an embryo. It has two parts: the plumule which will usually grow above the ground as leaves, and the radicle will grow below the ground as roots. There is also some food stored inside the seed, which gives the embryo the energy it needs to grow when the growing conditions are good.

Use the information above to help you complete the crossword.



Across

- 2. This will grow into a new plant.
- 4. This will grow below the ground as roots.
- 6. The plant that is developing inside the seed.
- 7. The mark that shows where the seed was connected to a plant before.

Down

- 1. The hard coat that protects the seed.
- 3. This will grow above the ground as leaves.
- 5. This is stored inside the seed.



Why do many plants make seeds?



How do seeds move away from their parent plant?



Write and/or draw pictures to show what you already know about this question.



1. Use origami instructions to help you make a paper version of the maple seed.
2. Drop it from a high place and observe what happens.



Take notes of what you saw. Draw pictures to help show your observations.



Share Your Results.

Discuss your ideas and findings with your classmates. Were there any interesting observations?



A seed is usually carried away from its parent plant before it starts to grow. This is called dispersal. A new plant wants to find a place that has lots of space and can get lots of light and water.



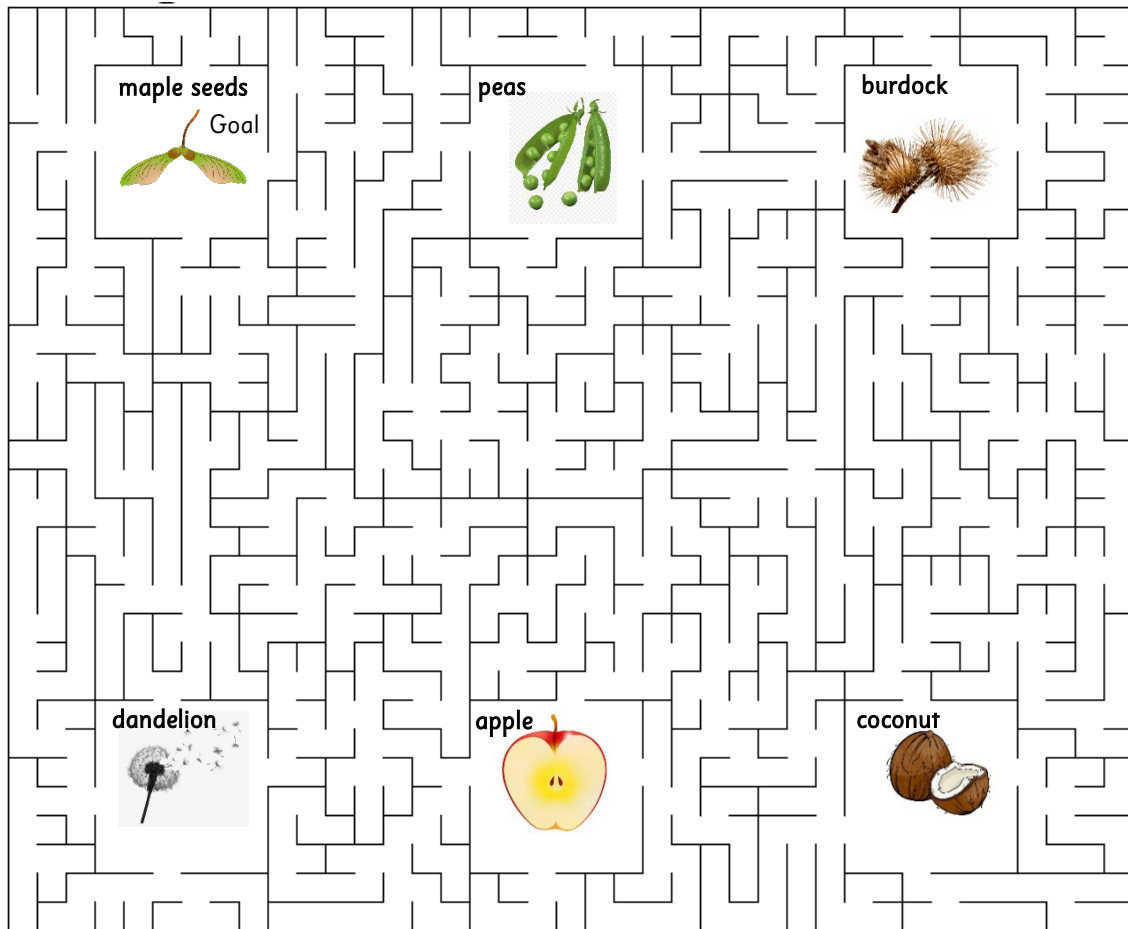
burdock



maple seeds

There are many ways a seed can move away from the parent plant. The first way is by animals. Animals can eat the seeds, walk away, and then poop the seeds out. Other seeds, like burdock, will hook onto an animal's fur and be carried away before falling off. The second way is by water. Some seeds, like coconuts, will float away in rivers or the seas before ending up on land again. The third way is by bursting. Some seeds, like peas, will burst out from the fruits. The fourth way is by wind. These seeds are very light and can get blown away by the wind to a new place. This is like the maple seed we made in this activity.

As you find each seed in the maze below, write how that seed moves away from its parent plant. Is it by animals, water, bursting, or wind?



Start



How do seeds move away from their parent plant?



What conditions does a seed need to grow?



Complete the chart below with your own guesses. When the experiment has finished, go back to see if you were correct.

O = will grow or grows
X = won't grow or didn't grow

Condition	Guess (O or X)	Your Reason	Real (O or X)
Seeds on a dry paper towel in a cold place.			
Seeds on a dry paper towel in a warm place.			
Seeds on a wet paper towel in a cold place.			
Seeds on a wet paper towel in a warm place.			
Seeds completely covered with water in a cold place.			
Seeds completely covered with water in a warm place.			



Create all the conditions above and watch what happens over the next couple of weeks.



Condition	Observations: Draw pictures and/or write notes
Seeds on a dry paper towel in a cold place.	
Seeds on a dry paper towel in a warm place.	
Seeds on a wet paper towel in a cold place.	
Seeds on a wet paper towel in a warm place.	
Seeds completely covered with water in a cold place.	
Seeds completely covered with water in a warm place.	



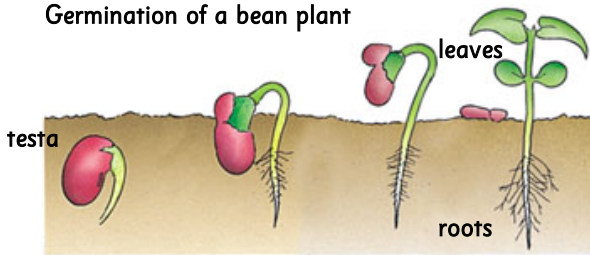
Share Your Results.

Discuss your ideas and findings with your classmates. Were there any interesting observations?

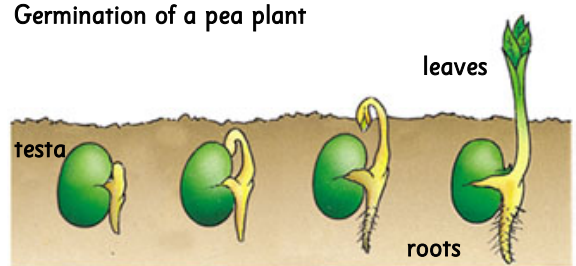


When the conditions are right, a seed will grow into a new plant. This is called germination. A seed needs warmth, oxygen, and water to germinate. The plant will not grow if all these conditions are not met. You will notice that many plants germinate in spring. This is because many seeds need the temperature to be between 15-30°C. Seeds also need water, but the water can't completely cover the seed, because seeds also need air (oxygen) to grow. Too much water stops the air from reaching the seed. When the seed is ready to grow, the seed will absorb the water and start to get bigger. Then the testa splits open, and the first roots and leaves grow. The roots will grow deeper in the ground and the leaves will push up through the soil.

Germination of a bean plant



Germination of a pea plant



Use the information above to help you answer the questions to complete the wordsearch.

1. This is what happens when a seed grows into a new plant.
2. Many plants start growing in spring because they need ____.
3. The liquid a seed needs to germinate.
4. The gas a seed needs to germinate.
5. The hard coat of a seed.
6. These will grow down into the ground.
7. These will grow above the ground.

L L X H Q Q O V Q O V S Y U H U I Z V Z
 Z E E H U Q X G X R Q V M C D A E S C I
 V J A D O R U A E C L J D X M O R P P M
 U S S V R E N H P R F G M Q B D M V W B
 T S V G E L D I K D M C H Q N Y Y B H H
 L X B C Y S Z J E L H I S H U I S S T I
 K V R T Y U G M Y F C L N U K A Q I M H
 T E N O P C Y Q Y E V D R A T K B N R L
 G B C R J S A Z B R G V W O T M W H A D
 X D X C M V O L W V I J L R O I V S W X
 Q T L Q V T Q M A T I P P I R T O L M U
 J E P G A T S E T G D F P R Z K S N K P
 H K X N G U T L E P O V X Z I V G N T M
 G S F Q F V W B R Y M R B C K K B F E Y
 M N A H U W I Z W D Y W X M I A R W Z T
 T Y K K B Y S B V I S H B C T X K Z S M
 B E J L V U G E A O M Y E N P R S F K B
 F Z B V V D P K S O K C S K U W P B A P
 Z E K S A M U B E A Z D M C J E P P F M
 V D W S K D L S K G O N E G Y X O D R F



What conditions does a seed need to grow?



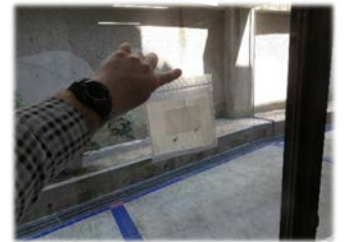
What is the life cycle of a plant?



Write and/or draw pictures to show what you already know about this question.



1. Fold some paper towel and slide it into a Ziploc bag. Staple the bag about 2cm from the bottom. Use a water sprayer to slightly wet the paper towel inside.
2. Put 3 different seeds inside and tape the Ziploc bag on a window that gets warmth from the sun. Check your seeds every day for a couple of weeks. Draw or describe any changes that occur. Keep the paper towel inside slightly wet.
3. Once the seeds have started to grow, move them to a pot with some soil. Continue to check the plants. If the soil becomes dry, give it some water. Keep doing this until the plants make fruit.



Draw pictures and take notes of what you see as your plant grows.

Plant: _____

Share Your Results.

Discuss your ideas and findings with your classmates. Were there any interesting observations?



Plant 2: _____

Plant 3: _____

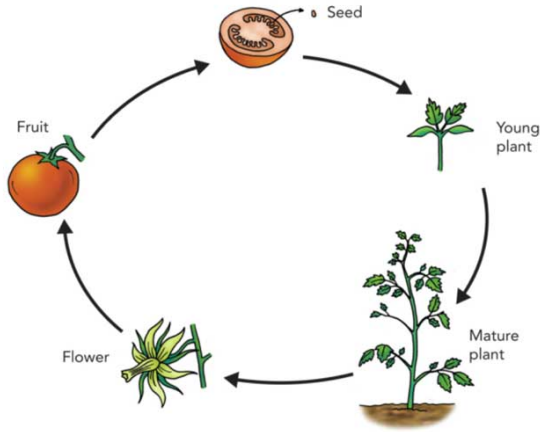


Share Your Results.

Discuss your ideas and findings with your classmates. Were there any interesting observations?

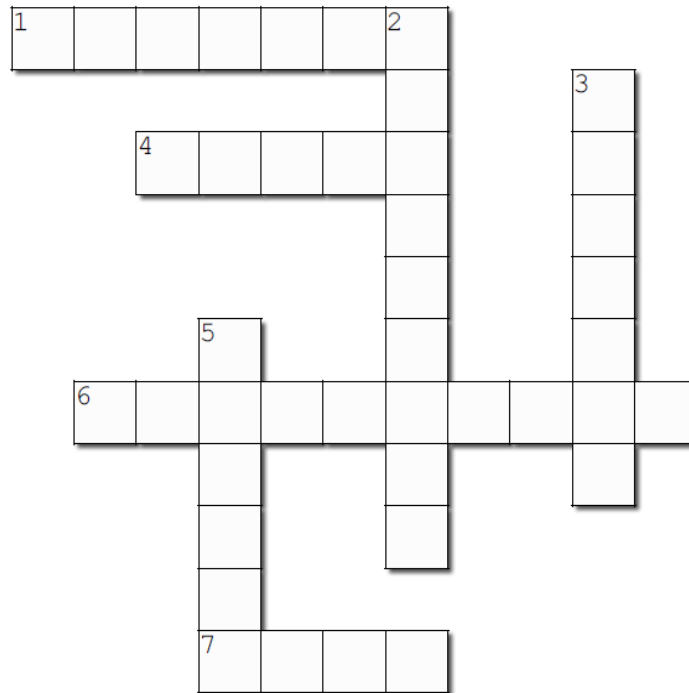


Plants are living things. They start off as seeds. The seeds germinate and become young plants called seedlings. The plants continue to grow and become mature plants. This means they can make flowers and new seeds. The seeds then get carried away from the parent plants and the process starts again. This is called the plant's life cycle.



The plants that we were growing were known as annuals. This means the plant grows from a seed, makes new seeds, and then dies all in the same year. However, not all plants are like this. Some plants take many years before they start to make seeds. These plants are called perennials.

Use the information above to complete the crossword.



Across

- 1. A mature plant makes _____.
- 4. The steps or changes that happen to a plant is known as its life _____.
- 6. Plants that live for many years.
- 7. The first step of a plant's life cycle is the _____.

Down

- 2. Young plants are also known as _____.
- 3. Plants that grow from a seed, make new seeds, and then die all in the same year.
- 5. Flowers will turn into _____.



What is the life cycle of a plant?

Name: _____

Student Number: _____ Homeroom: _____

Make a Poster to Show A Plant's Life Cycle



Do some research and find information about the life cycle of a different plant. Draw and label its life cycle below. Get your teacher to check it. Then you will turn it into a beautiful poster.

Main Ideas – Review Questions



After completing this unit, you should be able to answer these questions. Write your answers in complete sentences.

1) Why do many plants make seeds?

2) How do seeds move away from their parent plant?

3) What conditions does a seed need to grow?

4) What is the life cycle of a plant?

5) Draw and label the life cycle of a plant of your choice.