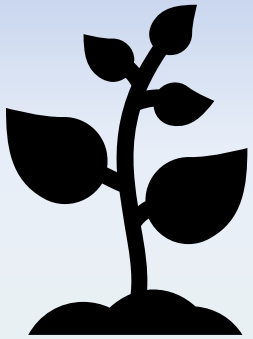
HAYES FARM
TRAVELLING GARDEN TOOL KIT

SEEDS!

KINDERGARDEN TO GRADE 2



Today we will learn about

What seeds are

The role of pollinators in making new seeds and plants

What seeds need to grow

How seeds move around

How seeds play a role in our diet

What is a seed?

A seed is a baby plant before it starts to grow.

Seeds are a small package containing of the ingredients to grow into a new plant.

These ingredients are protected inside of a hard “coat”.

Pollination helps seeds to start growing.

? *Does anyone know what pollination means?*

What is pollination?

Plants need to be *pollinated* to make seeds.

There are insects that move from plant to plant looking for food (very sweet nectar).

As they move around, they get covered in pollen which is a powder that is needed for plants to produce seeds.

- Pollen can also travel on wind, water, feathers or fur.
- Bees aren't the only pollinators; butterflies, moths, wasps and hornets, bats, birds, flies, etc. all help out.

Photo: Ingo Arndt, A wild bee in Germany

Photo: Amy Floyd

What is Germination?

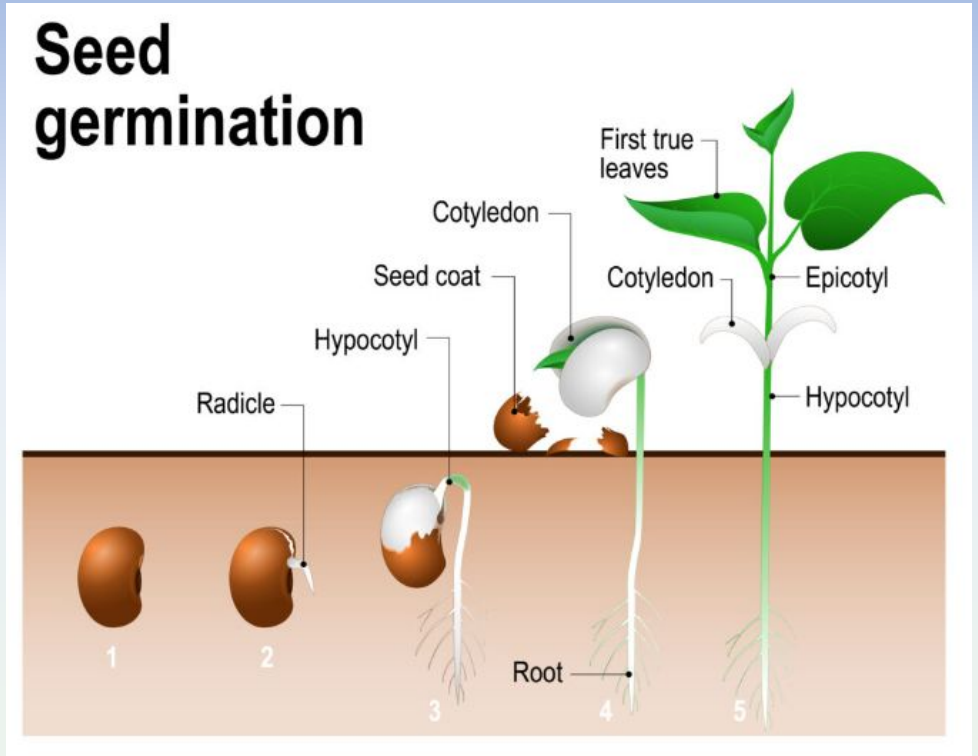


Photo: Seed Parade Seed Company (UK)

Seeds can seem like they are “asleep” for a long time.

When they get the right conditions they “wake up”.

This is called germination – (Germ-in-A-shun)

1. The seed absorbs water and wakes up.

2. There is growth <u>inside</u> of the seed coat.

3. Out comes a green shoot (top) and root (bottom) from the seed coat.

4. Now that the green leaves can get sun, the plant can now produce it’s own food and it can take food from the soil with the roots. This is called photosynthesis – (Fo-toe-sin-the-sis)

Corn seedling

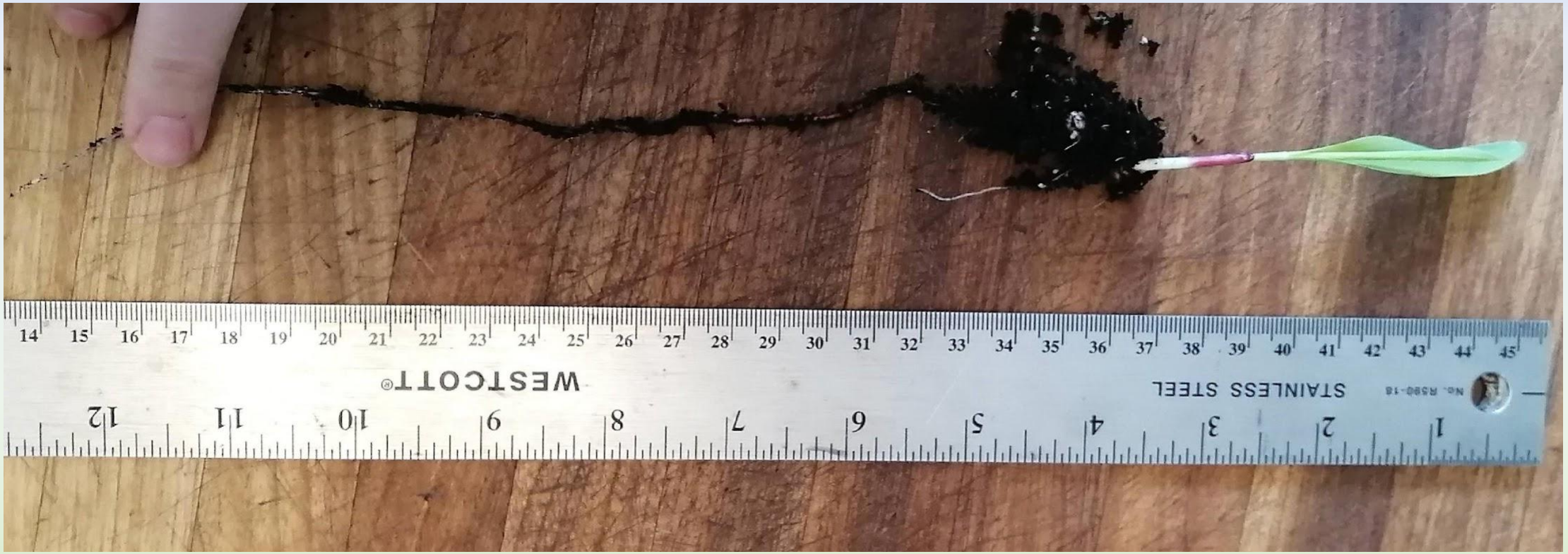


Photo: Amy Floyd

Look how long the root is compared to the plant!
You can see why plants are important for holding soil together.

What do seeds need to grow?

There are four things – let's see if we can think of them all.

What Seeds Need to Grow into Plants

Sunlight
- Energy source for photosynthesis (making food).
- Helps plant to grow.

Water
- Helps photosynthesis happen.
- Moves food inside of the plant.

Air
- Oxygen for breathing.
- Carbon dioxide (what humans breath out) which helps plants to make food.

Soil
- Provides an anchor and support to keep plants from falling over in the wind and rain.
- Gives the plants minerals (they come from broken rocks).
- Gives foods that the plants need to be healthy and free from disease. This can be from dead plants/ bugs/ bacteria, poop, etc. What seems kind of gross to us, is kind of great for plants ;)

Seed Travel

?

How do seeds move from place to place?

Seed Travel

Methods of seed *dispersal (how things are dispersed is how they move around)*

Wind: Seeds equipped with wings or hairs and catch a ride on a breeze!

Water: Seeds float and are carried by water currents.

Animals: Seeds eaten by animals and spread around by poop

Get caught in animal fur or even our sweaters ! Like burdocks

Importance of seed dispersal for plant reproduction

- Increases chances of successful germination in new locations.
- Reduces competition among offspring (young plants).

The Travelling Burdock!

Photos: Facebook, L Carol Price, R Step de Carteret

Different Shapes and Sizes of Seeds

Seeds grow in many, many different ways

Let’s look at a few…

Pine cones

- They are both male and female pine cones
- Pollen travels by wind
- We usually notice the larger female cones
- The woody structure of the cone keeps seeds safe
- It can take 2- 3 years for the seeds to grow!

Cool fact: Jack pine and lodgepole pine have a waxy coating on their cones. They need the heat from forest fires to melt it so their cones can open and seeds can grow.

Corn

- Corn is pollinated by wind too
- Corn has male “tassels” and female “silk”. These are the soft, silky, white strands just under the husk (green covering on the corn). Wind moves the pollen between the tassels and the silk.
- **Cool fact:** Each kernel is a single seed that can grow a new plant.

Squash and Pumpkins

Photo: Ryan Bomzer – Carved Culture

This family is called *curcubits* and includes

Squash, pumpkins, cucumber, melon, zucchini

Cool fact: If different types of curcubits are near each other and get cross-pollinated the seeds in the next year will make a whole new plant!This is how we get gourds. Bottom photo.

If you have extra pumpkin seeds, they taste great roasted with salt!

Photo: Wild carrot, Mark Zekhuis (EU)

Photo: carrot seeds Diyana Dimitrova, Gardening Know How.com

Carrots

Carrots are called *biennials*

This means that they don’t make seeds until they are 2 years old!

We’ll show you a fun carrot experiment at the end!

Seeds in our diet

Many of the things we eat today are seeds, but we don’t think about them like that because seed is not in their name.

- Coffee beans
- Corn kernels
- Rice

Seeds provide a lot of protein in our diet

Protein helps to build muscles and tissues in our bodies

Activity Options

- Make seed bags to take home
- Start seeds in the classroom
- Grow a carrot plant from a whole carrot
- Grow an avocado plant from a pit
- Watch a video about how animals drink nectar and spread pollen

More information in the teacher’s guide