Name _____

Germination – What is it?

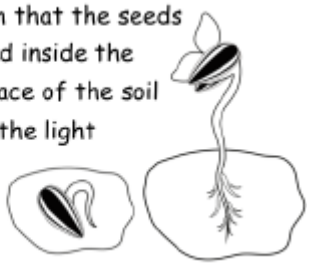
Germination is a strange word the first time you hear it. It may bring up thoughts of germs and catching a cold, but the word does not mean that. It actually has to do with the process of seeds sprouting and beginning to grow. Seeds will lie dormant or inactive until the right conditions exist. In this way, they can survive until environmental conditions are better for growth.

Seeds need three things in order to germinate or begin to grow. They need water, oxygen, and the right soil temperature. Some seeds, but not most, even require the right amount of light in order to grow. When all of the conditions that the seeds need are present, they begin taking in both the water and the oxygen. The seeds' outer covers swell and soften. Overwatering is not good because it will keep the oxygen from reaching the seeds. The seeds already contain the initial food source that the potential sprouts will need until they can take in nutrients from the soil later in their development.

Some seeds have a seed coat that is so hard that harsh conditions must exist to soften the seed coat before they can germinate. Some of those seeds need cold, some need fire, some need to sit in water for a long time, and some need to be eaten by and pass through an animal's digestive system in order to soften the seed coat.

After the seed coat is softened, the embryo's cells begin to grow inside the seed. The first part to appear is called the radicle or primary root. This root holds the plant in the ground and provides it with water. From the primary root, a shoot will appear that holds the stem and then at least two of the plant's first leaves. Sometimes, you will find the original seed adhering to one of the first leaves. At this point, the plant is called a seedling.

One other important factor of whether spouts survive is the depth that the seeds are planted. If planted too deeply in the soil, all of the food stored inside the seed will be used up before the sprout can break through the surface of the soil to reach the light. Using the green chlorophyll in their leaves and the light above the surface of the soil, seedlings will start making their own food in a process known as photosynthesis.



Name _____

Germination – What is it? – Questions

1. What does the word, germination, mean?

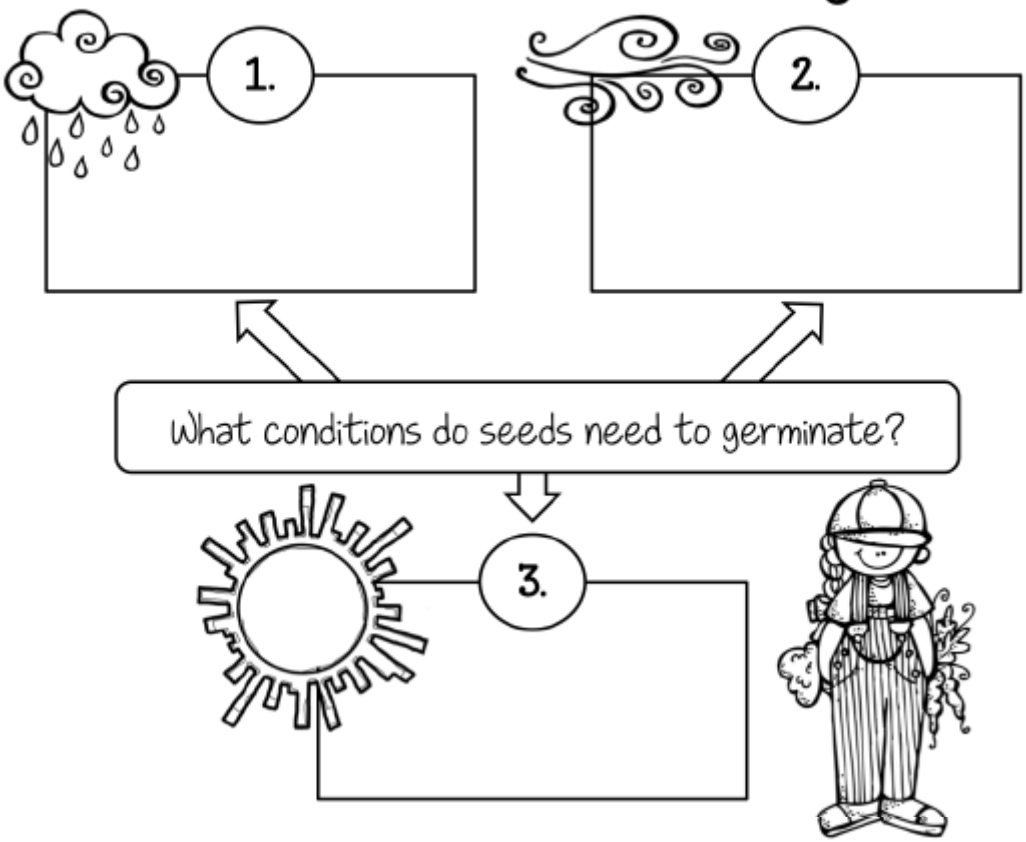
2. What conditions do seeds need to begin to sprout?

3. How does a seed become a seedling?

4. Why is the depth that the seed is planted important?

5. What was the most interesting fact that you learned from the article?

Germination - What is it? - Diagram



Draw the stages of germination.

Seed with radicle:	Shoot with first leaves:	Seedling: