**Science Explorer -Plan lesson (05/07/18)**

Topic: Plant Life Cycle

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**PLANT LIFE CYCLE**

**Introduction**

The plant life cycle begins with a seed. The seed will sprout and produce a tiny, immature plant called a seedling. The seedling will grow to adulthood and form a mature plant. The mature plant will reproduce by forming new seeds which will begin the next life cycle.



As described above this life cycle is generally used by the flowering plants. The flowering plants include trees, grasses, shrubs, and, of course, flowers. There are also lower types of plants including ferns and mosses. These also have a life cycle but they do not produce seeds. They produce a different type of reproductive cells called spores.

To learn the plant life cycle, this lesson will be divided in three different parts:

**PART I: Flower puzzle (20 mins)**

1. We will discuss about the different life stages of a plant with the students. What do they know about the plant life cycle?

What do plants need to grow?

1. We will watch a video of the “Plant life cycle” of a bean plant (Until 2:35min)

<https://www.youtube.com/watch?v=mZ3fRX1yqyM>

1. Student will use the **“flower life cycle”** foldable organizer. They will have to cut out the flower shape, then snip each dotted line so “petals” can fold towards the center of the flower, and finally paste all the images (plant/seeds) one on each petal.
2. Students will explain their flower (each stage of plant life cycle) to the correspondent tutor.

**PART II: Growing your own seed (20 mins)**

Students will prepare and grow their own seed and take it home to see their growth and development over time. We will watch a video about how to prepare their seed.

Materials:

* Jars or cups
* Bean or peas seeds
* Cotton or gauss
* Water

While they are doing this activity, we should talk about what it is required to grow a plant:

**Water & Nutrients:** Like humans and animals, plants need both water and nutrients (food) to survive. Most all plants use water to carry moisture and nutrients back and forth between the roots and leaves. Water, as well as nutrients, is normally taken up through the roots from the soil. This is why it’s important to water plants when the soil becomes dry.

**Air & Soil:** What helps plants grow besides water and nutrients? Fresh, clean air and healthy soil. Dirty air caused by smoke, gases, and other pollutants can be harmful to plants, limiting their ability to take in carbon dioxide from the air for making food (photosynthesis). It can also block out sunlight, which is also necessary for healthy plant growth. Healthy soil is extremely vital to plants. In addition to essential nutrients found in soil (from organic matter and micro-organisms), soil provides an anchor for plant roots and helps support the plants.

**Light & Temperature:** Plants also need sunlight to grow. Light is used as energy for making food, a process called photosynthesis. Too little light can make plants weak and leggy looking. They will also have fewer flowers and fruits. Temperature is important too. Most plants prefer cooler nighttime temps and warmer daytime temperatures. Too hot and they may burn, too cold and they will freeze\*.

\*Read more at Gardening Know How: What Makes Plants Grow: Plants Growing Needs **https://www.gardeningknowhow.com/special/children/how-plants-grow.htm**

**PART III: Botany supermarket and microscopy (30 mins)**

1. In this part, we will learn that besides seeds, there are other parts of the plant that are edible. Students will choose and identify which part of the plant is edible and group it within three groups: stems, roots or leaves. Supermarket foods like carrots, asparagus, lettuce, oranges, and peanuts are actually edible roots, stems, leaves, fruits, flowers, or seeds. Can you eat the stem, root, or seed of a plant?
2. There will be two dissecting microscopes for students to see different tissues, seeds, leaves and roots in detail, but mostly we will focus on the seed anatomy.
3. We will cut several seeds in the middle and look and identify different parts of the seed.