

STREAM : (Science, Technology, Reading, Engineering, Art, Math)

The following project addresses each component in STREAM.

Science: The entire project is science based as students study the structure and behavior of the physical and natural world through observation and experiment, while learning about Florida Agriculture & Science in a variety of learning styles. A focus on the scientific method is a major component as students will use systematic observation, measurement, experiment, and the formulation, testing, and modification of multiple hypotheses.

Option 1

Teachers need to plant 1 white flower seed in a planter or dixie cup with organic (humus based) soil (Miracle Grow is great soil). As you water the plant daily (10-15 sprays with a spray bottle) add in 15 drops of food coloring. Students can either individually select, or you can vote as a class on 1 of 4 hypotheses. 1. Nothing will happen at all. 2. Upon blooming, the entire flower turns the same color as the food coloring. 3. The flower will have zebra stripes with the color of the food coloring. 4. The flower turns the same color as the food coloring AND has zebra stripes the same color as the food coloring. Only the zebra stripes are darker. A few of the curricular components students will learn from this project are: germination, sprout, biodegrading, decomposing, up-cycling, humus, chemical and physical reactions, various forms of kinetic, wind and other energy sources used to grow food and more.

Option 2

You can plant any fruit, vegetable or flower you like and create hypotheses around how long it will take to fully mature (students predict weeks or months), how tall, wide, how much it weights, or if it will even work at all 😊

Technology: Students will use the internet to research the origin, history, where its grown in FL, and the biological make-up of the fruit, vegetable or flower they planted. Students can write/type a 1 page report answering these questions. Students can also create a power point presentation.

Reading: Students will read the report they did (for the Technology Section) about the origin of their fruit, vegetable or flower. For non-readers- teacher can read to the class.

Engineering : Each student will save 1 milk carton from lunch, clean it out and cut it in half (if no milk cartons you can use paper Dixie cups). During the field trip, these will be used as our planters for the fruits, vegetables and flowers the students plant. Decorate or “engineer” the dixie cup or milk carton to look like a honey bee or the Gabie Bus or anything they want! This will also get the students excited about the Gabie Bus. These dixie cups or milk cartons can then be planted (decorations and all) underground and will biodegrade, decompose and turn into compost in which the plant will then EAT the paper cup or milk carton (students LOVE that part). This is also called up-cycling- where you turn something into something else that’s better than before. Dixie Cups or Milk cartons were used to water or drink milk out of- now it’s being used to grow food and flowers out of!

Art : Students will draw, color or paint a picture of their fruit, vegetable or flower and label all major parts and components. This A is also fulfilled from engineering the cup or milk carton in the Engineering section of this STREAM experiment.

Math : The Math portion can be addressed once a week for 4 to 16 weeks depending on what fruit, vegetable or flower was planted. (There is a legend at the bottom showing growth rate in days). This can be done once a week for the duration of the life cycle of the teacher’s flower and/or with the students plant. Students mark the X axis (bottom row of graph paper) in weeks. Mark the inches up the Y axis (vertically). Once a week students will measure the height of their plant and record the data. Students can also measure the width of the stem and the length of any leaves or buds. This will be done 1 time every week until plant is fully grown.

What your student can plant/Growth Rate:

Watermelon/90-150 days. Smaller watermelons grow quicker

Tomato/70-80 days

Cucumber/60-70 days

Hot Pepper 60-80 days

Flowers/60-80 days

Radish/21-30 days

Corn/75-90 days

Pumpkin/80-90 days

Materials:

Small planter cup

Organic soil

Graph Paper

Step by step instructions (couldn't be easier)

Discuss with students: Most plants “**drink**” **water** from the ground through their roots. The **water** travels up the stem of the plant into the leaves and **flowers** where it makes food. When a **flower** is cut, it no longer has its roots, but the stem of the **flower** still “**drinks**” up the **water** and provides it to the leaves and **flowers**.