



STEM Fun in the Garden



*A Six Week Educational
Curriculum for 2nd grade students*



Meet the Author



Emma Stringer, Author of *STEM Fun in the Garden*, is a 4th year graduating senior studying at California Polytechnic State University, San Luis Obispo. She is a 4-H volunteer for the Youth Development Program, and works for the City of San Luis Obispo, Parks and Recreation - youth services.

"My experience growing my own garden and learning about the science of gardening has inspired me to share the information with others. As a liberal studies student at Cal Poly, I found my passion is working with and learning with students. I am excited to share my passion in a Multiple Subject Teaching Credential Program in 2017, and someday with my own classroom. As a visual and performing arts emphasis, I enjoy cross-curriculum lessons encouraging creativity and free movement."

"The mission of this program is to engage students in hands-on activities in an outside garden and subsequently provide a motivating environment for STEM education."

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Lesson 1: See the Plant!

Overview

This lesson focuses on the students' initial exposure to the garden and the plants in it. It encourages the students to take a closer look at plants within the garden to begin the Scientific and Engineering process.

Materials

- "STEM Fun in the Garden" Booklet
- 1 ruler for each student - 1 yard stick
- 1 roll of parchment paper
- 1 crayon & pencil for each student
- Index cards with plant names on them specific to the garden

Introduction

Introduce your students to the outdoor garden and classroom. Set safety rules for the area and go over any relevant safety hazards (fences, garden tools, etc.). Then cover any expectations for your time together and in the garden. An example is shown below:

"I would like to thank you in advance for using your best listening ears. We are outside and going to be doing some exciting activities, but to participate I need your help in following directions while I am here. [check for understanding] What are the two things we will be doing? [students respond listening & following direction.]"

Engage

Start by asking the class "Who would like to be the expert on your garden?" Discuss what an expert is and how they become experts. Introduce that the students will be becoming experts in 6 easy steps.

1. See the Plant
2. Know the Plant
3. Taste the Plant
4. Be the Plant
5. Grow the Plant
6. Share the Plant

Elaborate

1. Explain that each student will become an expert on one plant in the garden, and the plant card they receive will be the plant they become an expert on. (Do this while handing out the plant cards.)
2. Have the students discuss with someone sitting next to them what they know about the plant. Have they ever seen it? Tried eating it? Etc.
3. Students will also make up a movement for their plant. (While they are discussing pass out the booklets and pencils.)

Explore

1. Have the students write their name on the "STEM Fun in the Garden" booklet. Then open and begin answering the questions on page 2. (If the students have never seen their plant before have them guess what it looks like.)



Explain

1. Discuss through page 3 with the students explaining that to be a plant expert they must see the plant and know what it looks like.
2. Stop on question 7 and ask what a leaf is to confirm they can identify one.
3. Model for them how to identify the plant, to count the leaves, and measure the height and leaf length in inches and centimeters.
4. Students will then be free to explore around the garden to search for their assigned plant and fill out page 3. (Be sure to walk around and help those students who may be struggling with the assignment).

Explore

Discuss as a group or with partners 2 or 3 things they learned about their plant that they did not know.

Explain to the students that there are many different plants and that gardens exist all over the world. Tell them that some gardens have similar plants and some unique plants.

Engage

Ask the students, "Did your drawings look exactly like the plants you saw or similar?"

Explain to the students that they will be putting a drawing of a leaf from their plant into the booklet.

Show an example.

Create

Students will next be asked to set their booklets down and grab a single leaf from their plant. The students will create a leaf rubbing and glue or tape it in page 4 of their "STEM Fun in the Garden" Booklet

1. Cut parchment paper to fit in booklet. (one per student)
2. Tape leaf with a single piece of tape to the parchment paper.
3. Flip paper over so the leaf is on the bottom.
4. Color over the leaf with a crayon creating an imprint.
5. Tape or glue picture into page four.

Conclude

Stand in a large circle and have the students individually show their motion for their plant while saying their plant name. Then the class will respond "cool moves!" Optional: Have the students show three classmates their motion and give a high five to each student saying "cool moves!"



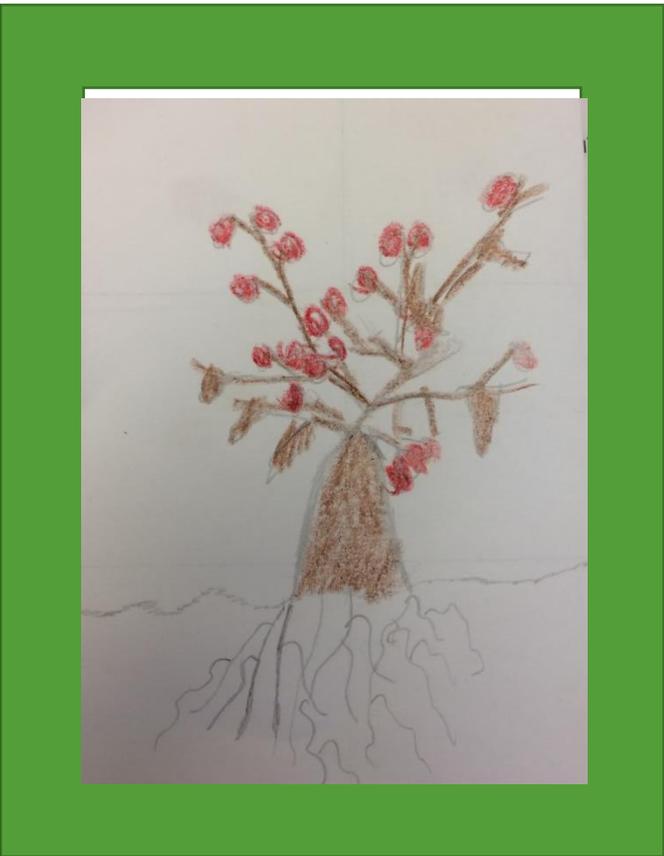
Student Artwork



Lesson 1: Materials



Lesson 1: Examples





Lesson 2: Know the Plant!

Overview

This lesson introduces our growing experiment for the students to determine if plants need sunlight and water to grow. It also introduces the basics of a plant structure and differences between various plants.

Materials

- bean seeds - 2 sticker labels per students
- Pitchers of water -wipes -paint/brushes
- "STEM Fun in the Garden" Booklet
- 2 rectangular cardboard boxes
- Egg cartons 4 per student
- 1 White board & white board markers
- 2 dish bins filled with soil
- 1 rock per student about palm sized

Engage

Introduce with a story that includes a problem that needs to be solved.

" I live in an apartment very close to Cal Poly and I want to start my own garden growing bean sprouts. I was reading in a book that some plants can be grown inside and some even live without being watered! I don't know if that's true but I would love to have bean sprouts growing in my room. Would you help me out and figure out what I need to do to help bean sprouts grow?"

Explain

1. As a group, ask "What is the difference for a plant that is outside and a plant that is inside?" Use the whiteboard to brainstorm with the group until sunlight is mentioned.
2. Erase the whiteboard then draw on the whiteboard four squares. In a discussion, fill the squares with the four testing types.

-In the sun with water	-Sun
-In the sun with no water	-Sun and water
-Inside with water	-Water
-Inside with no water	-Neither
3. Have the students open their "STEM Fun in the Garden" to page 4 titled "Growing Experiment".
4. Use the teacher STEM Fun in the Garden Booklet to model how students will fill in the page 4 similar to the image on the whiteboard.
5. Have the students continue to the end of the page and list their predictions after completing the table.

Experiment

For best results have materials prepped as shown in the image on the next page

1. Pass out to each student 4 12oz Dixie cups or 2 egg cartons and write their name on the labels.
2. Half of the students will then take turns filling their cups or cartons half full with soil.
 - The other half of the students will be telling another student which plant they think will grow the best.
 - Then have the students switch until all students have four cups half filled with soil.

Experiment

3. Pass out a few seeds to each student
4. Have each student place a few seeds in each carton making sure they are spread out.
5. Have each student sprinkle more soil on the top of the seeds. Just enough to cover the seeds.
6. Have the students pour a bit of water on 2 of the plants. [Using Dixie cups and the bowls/pitchers of water.]
7. Have the students set 2 of their plants (1 plant with water and 1 without) in the cardboard box outside. Duplicate the procedure and place the second box in a secure, shaded place inside.

Preparation

When the students have completed with their egg cartons, they will be invited to a station to paint a rock a bright color of their choosing

[Students will in Lesson 6 to write the name of the plant they were assigned on their rock as a garden label. The rocks will be placed in the garden by their plant.]

If they are waiting at any time have them review their plant movement they created in lesson 1.

Elaborate

After clean up, invite the students to meet again at the predesignated central meeting place.

Then introduce the students to the Science and Engineering Processes. Go through as a class the steps they completed today in the Science and Engineering Processes.

Have the students discuss the following questions:

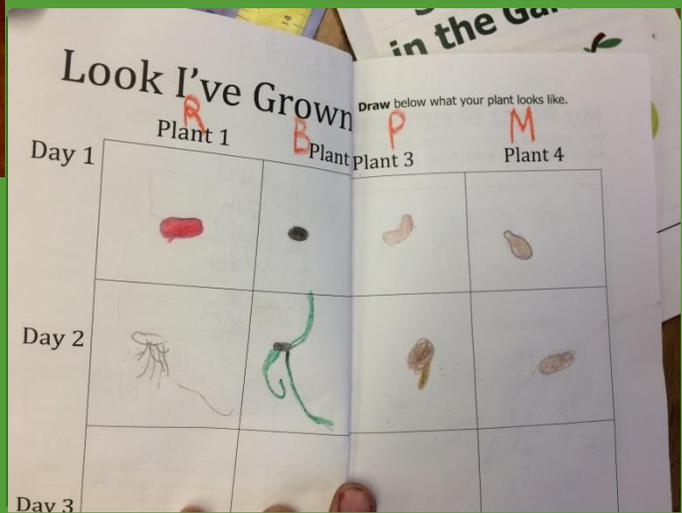
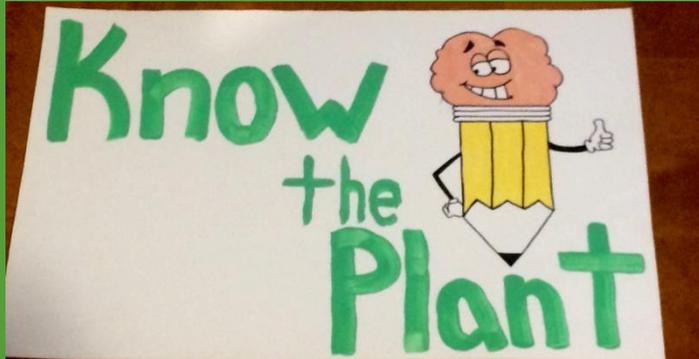
1. Which plant you think will be able to not only sprout but grow the tallest or fullest?
2. How did we use the steps from this poster in our experiment?"
3. What should we do as a class for the next step in our experiment?



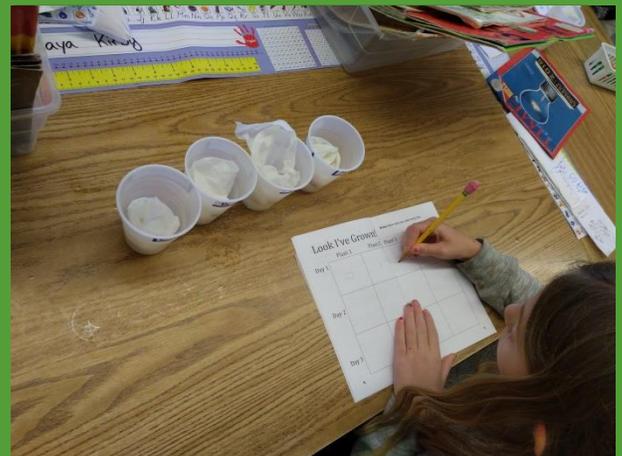
In the Garden Experience!



Lesson 2: Materials



Lesson 2: Examples





Lesson 3: Taste the Plant!

Overview

In this lesson the students will analyze and document their progress so far from the previous experiment. They will also learn about different plant structures and identify and taste some of those structures.

Materials

- "STEM Fun in the Garden" Booklet
- Star stickers (5 per student) - Pencils
- Plant structure poster & cards
- Plates with kale/lettuce, celery, sunflower seeds, potato, chamomile tea
- Whiteboard & whiteboard markers

Engage

While standing in a circle, tell the students they will be "learning more about their plant today. In order to remember our plant, we will go 1 at a time around the circle and try to do our plant movement as fast as we can as a group!"

Evaluate

9. Students will get the chance to evaluate their plants they planted in lesson 2. They will do this by filling out line 1 on pages 6 and 7 of their "STEM Fun in the Garden" booklet. Discuss the progress of the experiment as a class.

Explain

1. Students will discuss the mystery parts of the plant structure with a partner.
2. As a class, confirm on the plant posters, the different parts of the plants.

Explore

1. Each student will get 5 different colored star stickers. The stickers will correspond to a specific plant part.
 - a. Leaf - Gold
 - b. Stem - Silver
 - c. Petal or fruit - Green
 - d. Seed - Red
 - e. Roots - Blue
2. Show the back of the plant structure poster with the information above.
3. Challenge students to go and gently place a sticker on the part of their plant that corresponds to the sticker.
4. When all the students think they have correctly placed their stickers, give them a plant structure index card that corresponds to their plant.
5. When the students get the correct answer, have them draw it in their booklet on page 7.

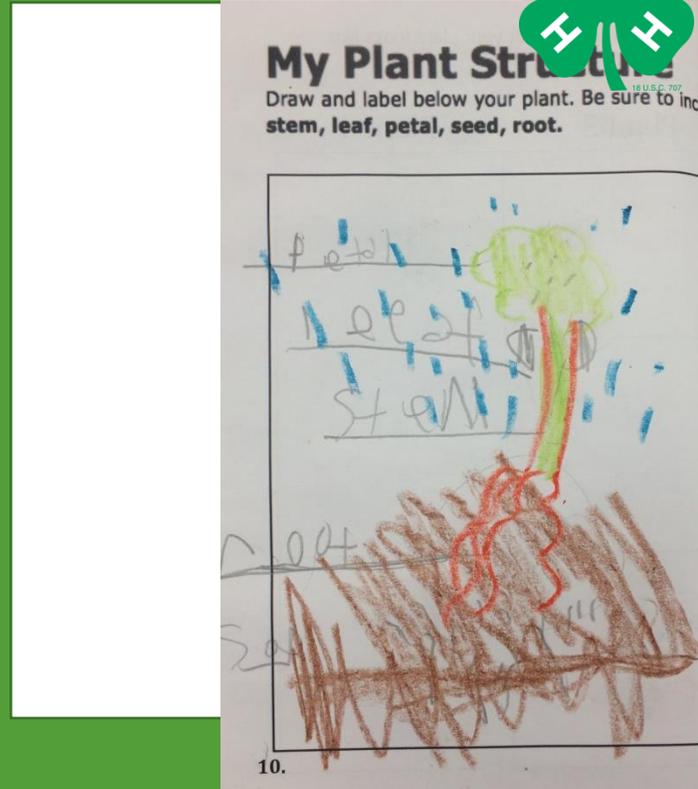
Engage

Have the students discuss with a partner the following questions: "What part of their plant do humans eat?" Ask them to compare with their partner. Are your answers the same?

Have the class write what part of the plant humans eat on page 8 of "STEM Fun in the Garden."

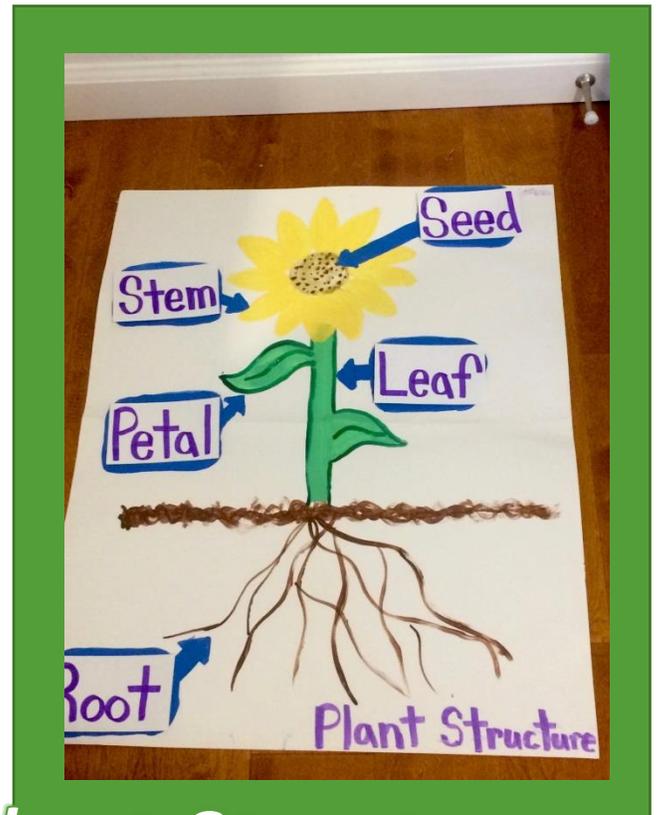
Explore

1. Pass out the 5 different foods to the students.
 - a. Leaf – Lettuce/Kale
 - b. Stem - Celery
 - c. Petal – Chamomile
 - d. Seed – Sunflower seed
 - e. Roots – Potato
2. Have the students make their predictions on page 8 of the "STEM Fun in the Garden" booklet.
3. Once the students are finished with page 8,



Conclude

For the conclusion of this lesson, have each student show you or a partner their plant move and say what their favorite part of a plant is to eat!



Plant Structures



Lesson 3: Materials



Lesson 3: Examples

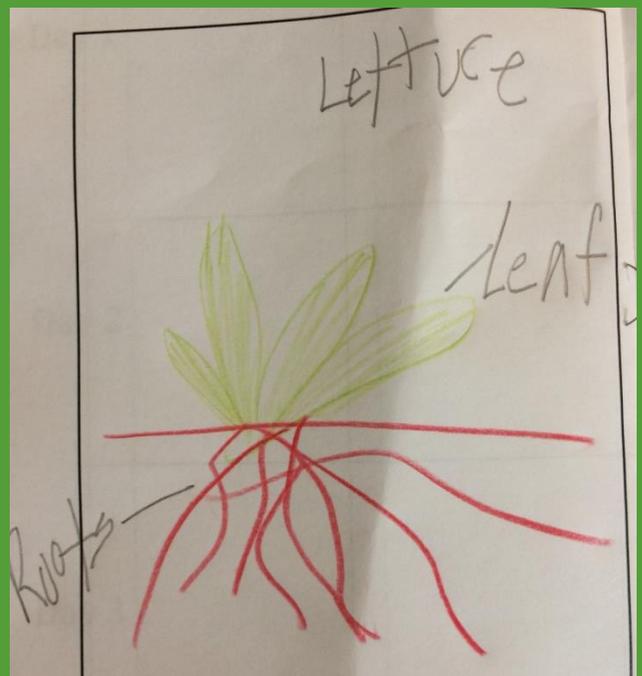
Tasty Taste Test!

Try each food and **draw a line** to match it with the part of plant.

- | | | |
|-------|-------|----------------|
| Leaf | _____ | Lettuce/Kale |
| Stem | _____ | Celery |
| Petal | _____ | Chamomile |
| Seed | _____ | Sunflower Seed |
| Roots | _____ | Potato |

What part of the plant is your favorite?

stem 11.





Lesson 4: *Be the Plant!*

Overview

In this lesson, the students will be learning the basics of photosynthesis. They will be creating a dance to reflect what they know about plant growth and photosynthesis, as well as learning some garden yoga!

Materials

- "STEM Fun in the Garden" Booklet
- Pencils (1 per student)
- Whiteboard and Whiteboard Markers
- Photosynthesis Shoe box

Engage

Have the students start in a circle. Explain to them the theme for the day is "Be the Plant!" In order to do this, we must first get into character. To "Be the Plant" we must shake out of our human character.

"Explain that the students are to as a group count down from 5 as a group while shaking out each of their limbs (In this order: Right arm, Left arm, Right leg, Left leg). Then they will count down from 4, then 3, etc. until they reach 1."

View an example of this is in the next box.

Engage

Right arm: "5, 4, 3, 2, 1!"

Left arm: "5, 4, 3, 2, 1!"

Right leg: "5, 4, 3, 2, 1!"

Left leg: "5, 4, 3, 2, 1!"

Continue this until you shake each limb once.

Elaborate

Now that we have shaken off our human character we must get focused to be our plant character. Plants love rain. To become focused happy plants, we will be making a rainstorm.

1. "Ask everyone to sit with you in a circle on the floor.
2. You will begin an activity, then the person to their right will join in, then the person to his/her right will join in, etc. until it creates a wave all around the circle. Once it reaches back to you (the leader) you begin a different activity, and this creates a second wave.
3. Tell the students that they are to carefully copy the movements of the person to their left, and not switch activities until that person switches. Try to encourage them to not focus on "the leader", but instead on the person to their left."

As a leader go in the pattern below.

- Rub your hands together. (This is the wind)
- Golf clap, a quiet, light clap (First raindrops.)
- Full out clapping. (It's getting more intense!)
- Slap on the floor, or your thighs. (Thunder)
- After a big crescendo, repeat all the activities in reverse order as the storm dies down, until you're rubbing hands together.

Explore

1. Ask the students to think like a plant:
“What do you think plants eat? How do plants help humans?”
2. List the classes thoughts from the previous questions on the whiteboard.
3. Introduce the word Photosynthesis and its definition.

Explain

Photosynthesis:

The cycle of plants and how they make energy! The sun (light energy), water, minerals and carbon dioxide are all absorbed by the plant. The plant then uses these inputs to make glucose/sugar, which is the energy/food for the plant. Oxygen is also produced by the plant in this cycle, which is then let off into the air!

Have you noticed how clean and pure the air feels when there are plants around? They are filling the air with oxygen!

Use the photosynthesis shoe box to show this visual.

1. Put Sun, Water, soil, carbon dioxide into left hole in the shoe box.
2. Shake the shoe box up showing the process of the plant converting them.
3. Pull out of the box oxygen and sugars out of the right whole in the shoe box.
4. Add the sugar into the top slit. Discuss how that is the food the plant makes.
5. Discuss how plants make oxygen for us to breath.

Create

Create a story walking your students through the basic life cycle of a plant and photosynthesis. Encourage your students to create a movement dance as you read through the story acting out what the plant would be doing.

Have your students start as a seed. Sprout, grow, get watered, feel the sun, blow in the wind, create oxygen, eat the sugars they create etc.

Challenge them and try at a faster tempo!

Explore

- Invite the students to find their own personal space within the general space.
- Remind the students that the garden helps them be healthy just like exercise does and that our body can do some “cool” things
- Tell them for us to be the plant we must do some pretending and imagining
- Go through the “Garden Yoga for Kids” encouraging your students to try each yoga pose.
- Feel free to ask the students to make us their own pose, allow their creativity to take over!

Evaluate

Students will get the chance to evaluate their plants they planted in lesson 2. They will do this by filling out pages 6 and 7 of their “STEM Fun in the Garden” booklet. Discuss the progress of the experiment as a class.

GARDEN YOGA FOR KIDS



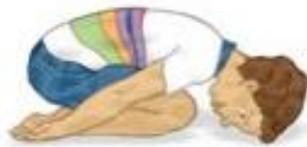
Pretend to be a tree

Tree Pose: Stand on one leg. Bend the other knee and place the sole of your foot on your inner thigh. Sway like a tree in the breeze. Now the other side.



Pretend to be a frog

Squat Pose: Come down to a squat with your knees apart and arms resting between your knees. Touch your hands to the ground. Jump like a frog.



Pretend to be a seed

Child's Pose: Sit back on your heels and bring your forehead down to rest on the floor. Pretend to be a seed in the garden.



Pretend to be a butterfly

Cobbler's Pose: Sit on your buttocks with a tall spine. Bend your legs with the soles of your feet together. Flap your legs like the wings of a butterfly.



Pretend to be a flower

Flower Pose: Lift your bent legs, balancing on your sitting bones. Weave your arms under your legs, palms up. Pretend to be a flower in bloom.

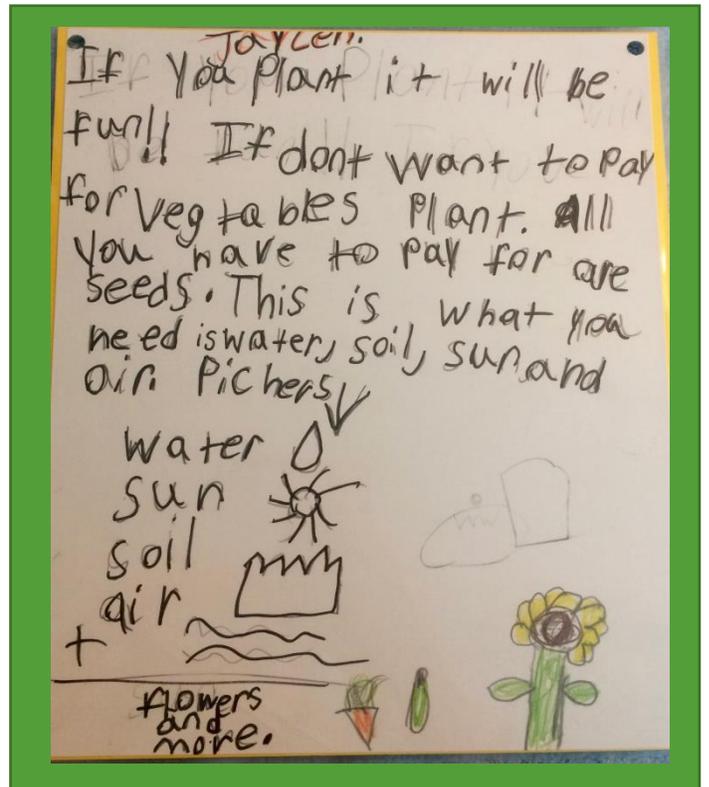
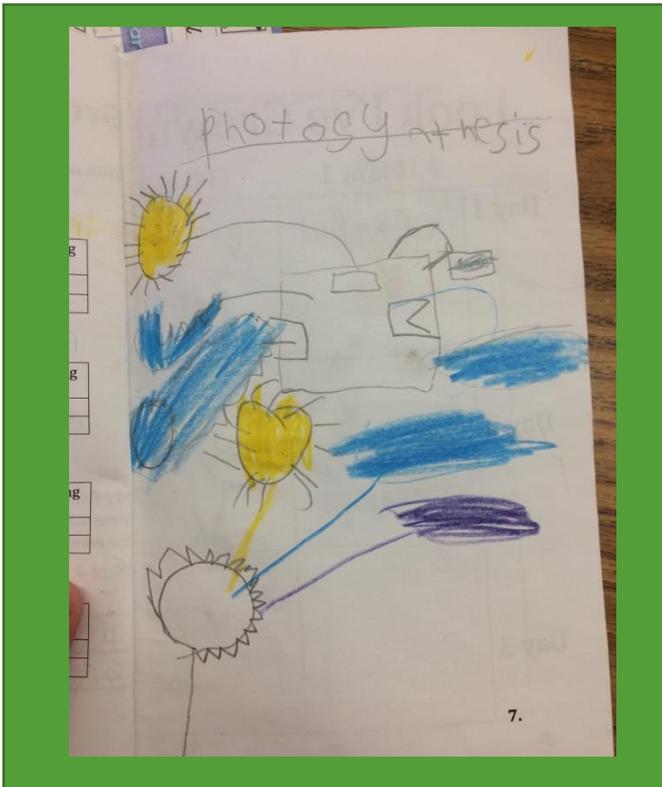




Lesson 4: Materials



Lesson 4: Examples





Lesson 5: Grow the Plant!

Overview

This lesson focuses on the student's exposure to the Scientific and Engineering process. The students will decide what elements plants need to survive. We will celebrate their knowledge by making Plant Friends!

Materials

- Bean seeds -1 sticker label per students
- Pitchers of water - Wipes
- 6 Small Dixie cups -1 Pencil per student
- Googly eyes - Strong glue
- 4-5 Popsicle sticks
- Cut in half water bottles with caps, 1 per student
- "STEM Fun in the Garden" Booklet
- 1 Large rectangular cardboard box
- White board & White board markers
- 2 Dish bins filled with soil

Engage

Start by singing an amended version of John Denver's "Garden Song". Create motions to the song to help your students remember.

"Inch by inch, row by row, gonna make this garden grow. All it takes is water and the sun and a piece of soiled ground. Inch by inch, row be row, someone bless the seeds I sow. Someone warm them from below, 'til the rain comes tumbling down."

Explain

This is a great point for teachers to listen to conversations and read the students page 12 "STEM Fun in the Garden" booklet to evaluate standard (NGSS-2-LS2-1.). Plants need water and sunlight to grow.

1. Explain page 9 in the "STEM Fun in the Garden" Booklet
2. Have the students complete page 9.
3. Discuss the results with a partner. Then regroup and discuss page 9 as a class.
4. Repeat steps 1-3 with page 12 in the "STEM Fun in the Garden" booklet.

Elaborate

Students will now be taking the information they learned and celebrating it by making a plant friend. Half the students will plant their plant friend while the other half is decorating it then switch.

For best results have materials prepped as shown in the image on the next page

To plant:

1. Pass out to each student a water bottle
2. Have students write their name on the labels and place the label on the bottle.
3. Students will then take turns filling their bottle $\frac{3}{4}$ full with soil.
4. Pass out a few seeds to each student.
5. Have each student place a few seeds in the bottle making sure they're spread out.
6. Have each student sprinkle more soil on the top of the seeds. (Just enough to cover the seeds.)

Elaborate

7. Have the students pour a bit of water on their plants. [Using Dixie cups and bowls/pitchers of water.]
8. Have the students set their plants in the cardboard boxes when completed.

To decorate:

Have students use a strong glue to secure the cap and googly eyes on their bottle.

[Recommended: putting tacky glue in Dixie cups and using popsicle to apply]

Be creative in other ways they can decorate it!

Evaluate

As mentioned earlier this is a great lesson for teachers to evaluate the standard:

NGSS-2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.

17.

Plant Friend



Examples



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Lesson 5: Materials



Lesson 5: Examples





Lesson 6: Share the Plant

Overview

This lesson is a conclusion of the 5 previous lessons. Students will review and present the information they have learned. They will be creating an informational plant page and plant identifier rocks

Materials

- "STEM Fun in the Garden" Booklet
- Paint and Paint brushes
- Sharpies, pencils, crayons
- Informational sheet for students to fill out
- 1 previously painted rock & 1 unpainted rock per student.

Engage

Share with a friend! Today's theme is all about sharing what we have learned.

Students will be given 30 seconds to share specific information with a partner then give them a special high five. Students cannot repeat partners.

1. What plant are you an "expert" on?
 - a. Give this partner a high five
2. What does your plant look like?
 - a. Slime high five.
 - b. One students high-5's their partner then slides their hand down as if it was slime.

Engage

3. How did you decide to grow your plant?
Sunlight? Water?
 - a. Super speed high-5
 - b. 5 fast high-5's
4. Show your partner your favorite plant pose.
 - a. Butterfly high five
 - b. Put two fingers on your head like antennas touch antennas together.
5. What is your favorite activity we have done so far in our lessons?
 - a. Super-duper high-5
 - b. Give As many high-5s as you can in 10sec

Explain

Students will now have two stations to create an information sheet about their plant for the garden and paint their rock for the garden.

Create

Students will be painting and decorating two rocks to put in the garden.

- One will be what their plant looks like with eyes and a face on it. (review pictures on page 21 for examples.)
- One will be the rock they painted in lesson 2. They will be writing the name of the plant on that rock to label their plant in the garden.

Create

Students will create an informational sheet about their plant to share. What did you learn about plants? What did you learn about your plant specifically? They will use their STEM Fun in the Garden booklet to help them.

1. Students will write the name of their plant.
2. Students will draw a picture of their plant and label the parts we can see that are above the ground.
3. Students will write what part of the plant we eat.
4. Students will write one sentence about their plant. For example: describing it, what it tastes like, why they like it, etc.

Or have students share what they learned or what their future garden will look like!

Share

Students will then be invited to do a gallery walk to view the painted rocks and informational sheets.

Optional: Invite other classes, parents, school staff to do the gallery walk with you.

Evaluate

Have students fill out evaluation surveys provided by your 4-H Club Coordinator.

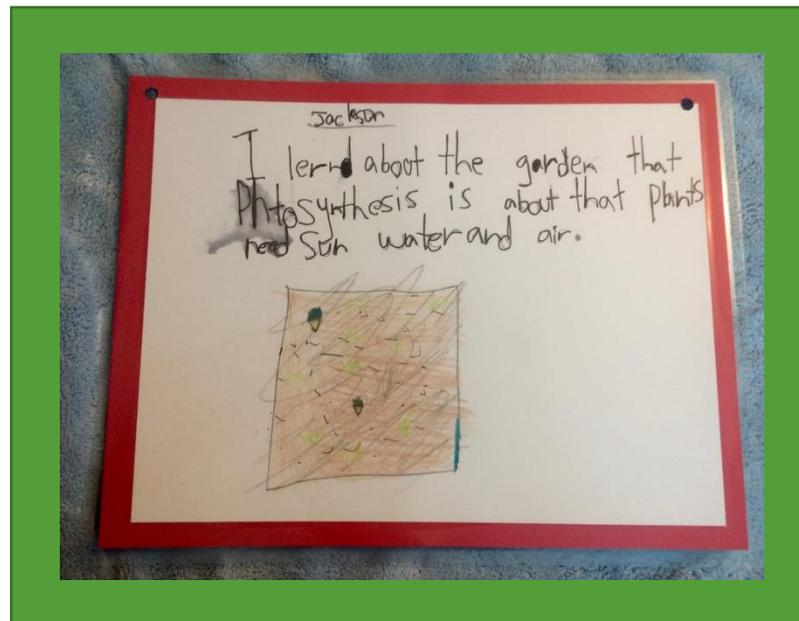
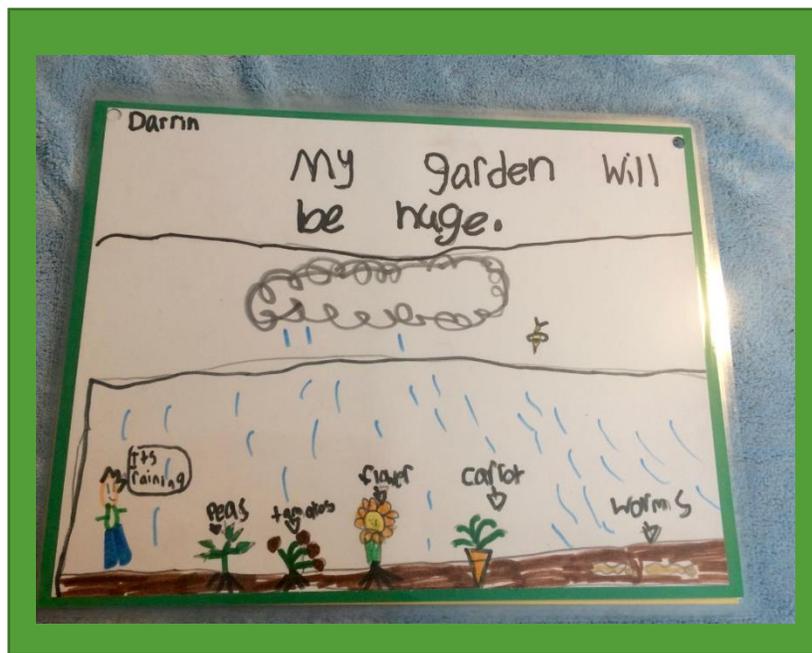
Collect "STEM Fun in the Garden" booklets and give them to the teacher to review as an evaluation of progress and pass back.

Conclude



Thank the students for all their hard work. Remind them that science can be a fun and hands-on experience. Challenge them to try doing their own experiments and maybe even grow a garden!

Student Examples





Lesson 6: Materials



Lesson 6: Examples



NGSS & CCS Correlation



Lesson 1:

1. Scientific and Engineering practices – Obtaining, evaluating, communicating information & structure and function, scale proportions quantity
 - a. In observing the plants in the garden, they will be answering questions, to help them observe their plant closely, look for data, and communicate that data. In measuring the plant stems and leaves they will be practicing scale proportion and quantity.
2. Visual and Performing Arts: Visual Arts Content Standard - 2.1 Demonstrate beginning skill in the use of basic tools and art-making processes, such as printing, crayon rubbings, collage, and stencils.
 - a. We will demonstrate this by doing a leaf crayon rubbing in their workbook
3. CCSS.MATH.CONTENT.2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes
CCSS.MATH.CONTENT.2.MD.A.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
 - a. When observing their plants, they will be getting measurements of the leaf length, stem length and any other important measurements with rulers (yard stick for sunflowers).

Lesson 2:

1. NGSS-2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow. Scientific and Engineering practices, system and system models, scale proportion and quantity, cause and effect, stability and change.
 - a. We will be planning and setting up an experiment to show plants need sunlight and water to grow. The students planting their seeds will use the practices, as well as investigate the plant system model, and use scale and proportion when filling cups with soil, water etc.



NGSS & CCS Correlation

Lesson 3:

1. Patterns, structure and function
 - a. We will be used when we look at plant diversity and similarities in structure in the scavenger hunt.
2. NGSS-2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.
 - a. Students will be working towards this standard by continuing conducting their investigation. This in the class will entail them observing and taking data on their plants.

Lesson 4:

1. NGSS-2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.
 - a. Students will be working towards this standard by continuing conducting their investigation. This in the class will entail them observing and taking data on their plants.
2. Students assess and maintain a level of physical fitness to improve health and performance. Fitness Concepts 3.1 Participate in enjoyable and challenging physical activities for increasing periods of time.
 - a. During garden yoga, the students will be participating in physical activities they may not have tried before that are enjoyable and challenging!
3. 2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories.
 - a. Students will be completing this in their "STEM Fun in the Garden" Booklet, based on their 4 plant experiment, on page 9 titled, "My Plant Results!"
4. Visual and Performing Arts: Visual Arts Content Standard - 2.1 Create shapes and movements, using fast and slow tempos. 2.3 Create a simple sequence of movement with a beginning, a middle, and an end, incorporating level and directional changes.
 - a. Through a guided story of a plant growing, students will create their own sequence dance using shapes and we will try it fast and slow.

NGSS & CCS Correlation



Lesson 5:

1. NGSS-2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.
 - a. Students will finish their investigation and will determine whether plants need sunlight and water to grow. They will make this decision in order to test their results by making a “Plant Friend.”
2. Scientific and Engineering Processes – Obtaining, Evaluating, Communicating information, analyzing and interpreting data.
 - a. Students will show this by determine whether plants need sunlight and water to grow, adding this information into their booklet and telling a partner about their choice.

Lesson 6:

1. W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-LS2-1),(2-LS4-1)
 - a. Students will use the information they learned in lessons 1-5 to answer the questions: “What did you learn about plants? What did you learn about your plant specifically?” on their plant informational card.

STEM Fun in the Garden



Teacher Addition



Name: _____



Lesson 1: See the plant

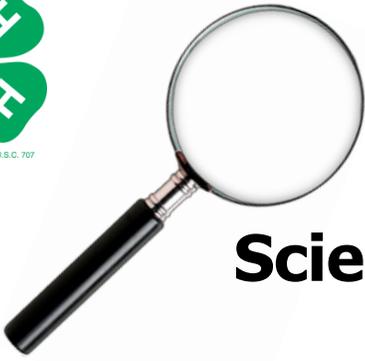
Become a plant expert!

My plant:

I know that my plant...

Draw below a picture of what your plant looks like.

A large, empty rectangular box with a green border, intended for drawing a picture of the plant.



Let's check it out!

Scientists do this to help observe.....

What does your plant look like?

Color: _____

Shapes I see: _____

Soft or sharp: _____

Smell: _____

Wide or skinny: _____

Height of plant: _____ in. _____ cm.

How many leaves: _____

Length of leaves: _____ in. _____ cm.

Other details :



My leaf rubbing

Glue your leaf rubbing in here



Growing Experiment

Write or draw the four ways we will test

1.	2.
3.	4.

My Predictions:

Write below which plant you think will grow the **best**. Write the **number** box it is in and **why** it will grow the best.

Plant # _____



Watch Me Grow!

Observe your plant and write what you see in the boxes below.

Plant # 1

Date	How many Sprouted?	Height	Color	Anything Else?

Plant # 2

Date	How many Sprouted?	Height	Color	Anything Else?

Plant # 3

Date	How many Sprouted?	Height	Color	Anything Else?

Plant # 4

Date	How many Sprouted?	Height	Color	Anything Else?

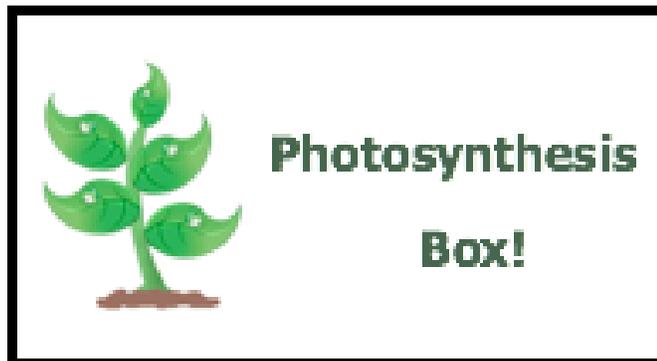


Photosynthesis Fun!

Write below the parts of photosynthesis.

What does the plant get from its environment? What does it make? What does it give to help humans?

A plant takes in:



A plant makes:

Photosynthesis is important because



Look I've Grown!

Draw below what your plant looks like

Plant 1

Plant 2

Day 1

Day 2

Day 3



Draw below what your plant looks like

Plant 3

Plant 4

Day 1

Day 2

Day 3

My Plant Structure



Draw and label below your plant. Be sure to include: **stem, leaf, petal, seed, root.**

A large, empty rectangular box with a black border, intended for a student to draw and label a plant.



Tasty Taste Test!

Try each food and **draw a line** to match it with the part of plant.

Leaf

Potato

Stem

Chamomile

Petal

Sunflower

Seed

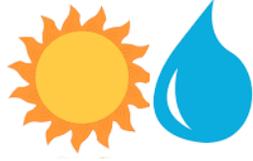
Celery

Roots

Lettuce/Kale

What part of the plant is your favorite?

1



No Water
No Sunlight

12.



Garden Yoga

Try these at home and share them with
a friend or family member!



Pretend to be a tree

Tree Pose: Stand on one leg. Bend the other knee and place the sole of your foot on your inner thigh. Sway like a tree in the breeze. Now the other side.



Pretend to be a frog

Squat Pose: Come down to a squat with your knees apart and arms resting between your knees. Touch your hands to the ground. Jump like a frog.



Pretend to be a seed

Child's Pose: Sit back on your heels and bring your forehead down to rest on the floor. Pretend to be a seed in the garden.



Pretend to be a butterfly

Cobbler's Pose: Sit on your buttocks with a tall spine. Bend your legs with the soles of your feet together. Flap your legs like the wings of a butterfly.



Pretend to be a flower

Flower Pose: Lift your bent legs, balancing on your sitting bones. Weave your arms under your legs, palms up. Pretend to be a flower in bloom.

13.

Garden Song



“Inch by inch, row by row,

gonna make this garden grow.

All it takes is water and the sun and a piece of soiled ground. Inch by inch, row by row, someone bless the seeds I sow. Someone warm them from below, 'til the rain comes tumbling down."



Grow my plant!

Circle how you want your plant to grow.



*Sunlight and No
Water*



Sunlight and Water

*No Sunlight
and No Water*



*No Sunlight
and Water*

Why did you choose to grow it that way?

Resources



- <http://www.bbbpress.com/2014/12/drama-game-shake/>
- <http://childhood101.com/2016/04/yoga-for-kids-a-walk-through-the-garden/>
- <http://www.sheppardsoftware.com/content/animals/kidscorner/foodchain/photosynthesis.htm>
 - <http://www.bbbpress.com/2013/05/rain-storm/>
- <https://s-media-cache-ak0.pinimg.com/originals/f7/a7/18/f7a718515ecd5a7f8540c5114876e3d1.jpg>

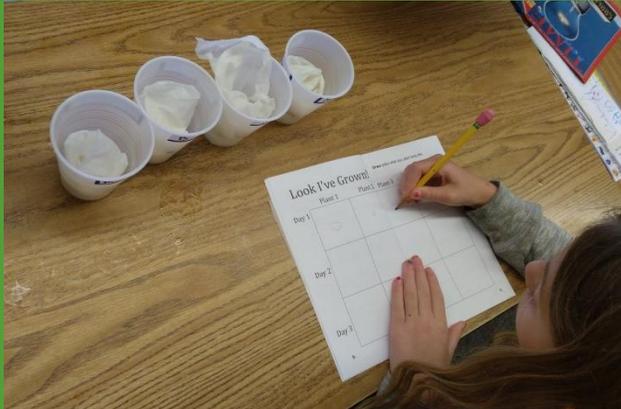


Weather Dependant Variations

Lesson

Instead of finding and viewing their plant in the garden, bring in samples of the plant from their school garden, or have the students research online to see what their plant looks like.

Examples



The Experiment!

If there is rain or other weather that will prevent the plants from germinating and growing outside without getting wet, follow the instructions below.

1. Have students write their names on four plastic clear cups, and on each cup a letter (B,P,M,R)
2. Students will receive 8 paper towels, and four different types of beans.
 - a. One black bean
 - b. One pinto bean
 - c. One mayocoba bean
 - d. One red bean
3. Students will get two paper towels damp. One they will fold in half and it will line the inside of the cup. The other will be crumpled into a ball and placed at the bottom of the cup.
4. Students will put one bean in between the paper towel and cup.
5. Repeat this process for all four cups.

Students will use page 5 of their "STEM Fun in the Garden" booklet to document what seeds they are watching germinate. They will use pages 8 and 9 to document the growth of their seeds.

This is a great opportunity to teach about germination and a plant lifecycle.