



**TWO BIT CIRCUS**  
• F O U N D A T I O N •

# TERRARIUM ECOSYSTEMS



## Program overview

Students will have the opportunity to build a terrarium and use their terrarium to make observations on what plants need to survive.

## Materials needed

- **32 OZ CONTAINER W/ LID**
- **DRAINAGE LAYER MIX**
- **POTTING SOIL**
- **PLANT SEEDS**
- **DECORATIVE MATERIALS**
- **SAMPLE CUPS FOR SCOOPS**

## Project Deliverables

- Terrarium build project
- Observations and explanations of what plants need to survive (energy and matter flows).
- Storytelling presentation of energy, matter -students share their work.

### SAMPLE ACTIVITY PACING

1. Welcome participants.
2. Introduce yourself and any classroom expectations you may have.
  - a. Where the restroom is located
  - b. Hand raises and attention getters etc.
3. Lead the group of students in building their terrariums\*
  - a. Demonstrate each step of the assembly process slowly and clearly.
  - b. Pause between each step and walk the room assisting students as needed.
  - c. Older students can follow the instruction pages and work independently.\*
4. In the background you can play the following song in between explaining each step.
  - a. [Photosynthesis » Griffin Education Solutions](#)
5. As you are completing each step you can also question students about plants to get them thinking about how their seeds will grow.
  - a. Plants need soil and water to help them grow.
  - b. They also will absorb energy from the sun.
6. After students have finished their assembly of their terrariums, have them draw a picture of their terrarium and a prediction of what the plant will look like when it grows. \*
7. Hold a discussion with your students and ask them, “what do your seeds need to grow into plants?”
  - a. Have students discuss in small groups and share out as a whole group.
  - b. You may choose to play the following songs and have students sing along, and learn parts of the lyrics such as the chorus.
    - i. [Photosynthesis » Griffin Education Solutions](#)
    - ii. [Sunflower » Griffin Education Solutions](#)
  - c. Review with the group that plants need energy and matter
    - i. Plants need water, air (carbon dioxide), and sunlight to grow
    - ii. They achieve this through a process called photosynthesis.

### SAMPLE ACTIVITY PACING

8. Ask students to add the following to their terrarium drawing using words, pictures and arrows.\*
  - a. Water
  - b. Sun light
  - c. Air (carbon dioxide)
9. Work with the students on drawing arrows and words to label and identify the flow of energy in and out of their terrarium. \*
  - a. For younger students you can emphasize energy and matter flow into to make the plant grow.(K-LS1-1)
  - b. Older or more advanced students can emphasize energy flow in and out of the system to explore photosynthesis more in depth. (5-LS1-1).
  - c. You may choose to follow up with the group and conduct a class experiment by creating controls and variables. (2-LS2-1).
    - i. Water some plants and not others,
    - ii. Give sunlight to some and not others,
    - iii. Provide water and sunlight.
10. Have the group take turns sharing out what they have learned about plants.
  - a. You can use call and response, songs, to help students recall what they have learned about flow of energy.
11. Have students watch their seeds grow over time, and draw pictures of the growth over time.

### TERRARIUM ASSEMBLY INSTRUCTIONS

1. Open your container and add a scoop of the drainage mix into the bottom of the container.



2. Put several inches of soil on top of the drainage mix layer.



3. Sprinkle several seeds on top of the soil and gently press them a few centimeters into the soil.



4. Decorate your terrarium.



Can you think of anything you can add to your terrarium to make your seeds grow?

---

---

---

---

---

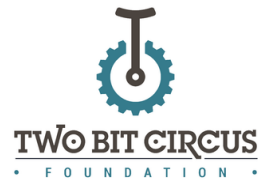
---

---



# TERRARIUM ECOSYSTEMS

## STUDENT WORKSHEET



### MY TERRARIUM!

Created by: \_\_\_\_\_

#### Directions:

1. Observe your terrarium and draw a picture of it.

#1

2. Draw a picture of what you think your plant will look like when it grows up.

#2

3. In Picture #1, add drawings, words, and arrows to explain what you will add to your terrarium to make your plant grow.

## Photosynthesis

BY TIM GRIFFIN, COPYRIGHT 2012

There's a great big living kingdom for the green and growing things  
They live by photosynthesis, about which I will sing  
This chemical reaction is my favorite one of all  
It makes a lot of oxygen and helps a plant grow tall

(chorus) You know a plant needs sunlight, water, soil, and CO<sub>2</sub>  
Making carbohydrate for the plant and oxygen for you  
Of all the living kingdoms, I love the plants the best  
My favorite part of botany is photosynthesis!

It happened in the water in the deep and distant past:  
A cell evolved an organelle we call a chloroplast  
The algae made our atmospheric oxygen to rise  
And led to plants today, the way they photosynthesize

(repeat chorus)

They do it in the desert, in the forest and the sea  
Turning CO<sub>2</sub> and photons into food for you and me  
Making air to breathe and wood to build and fiber for our clothes  
So let me hear you cheer your favorite photoautotrophs!

(repeat chorus)

My favorite part of botany is photosynthesis!