



EDUCATOR'S GUIDE: HOW TO GROW A MONSTER

Activity 1: I Need My Space!

45 minutes

Objectives:

- Students will understand basic plant needs.
- Students will design a garden layout for their home or school.

NGSS or Common Core Standards addressed:

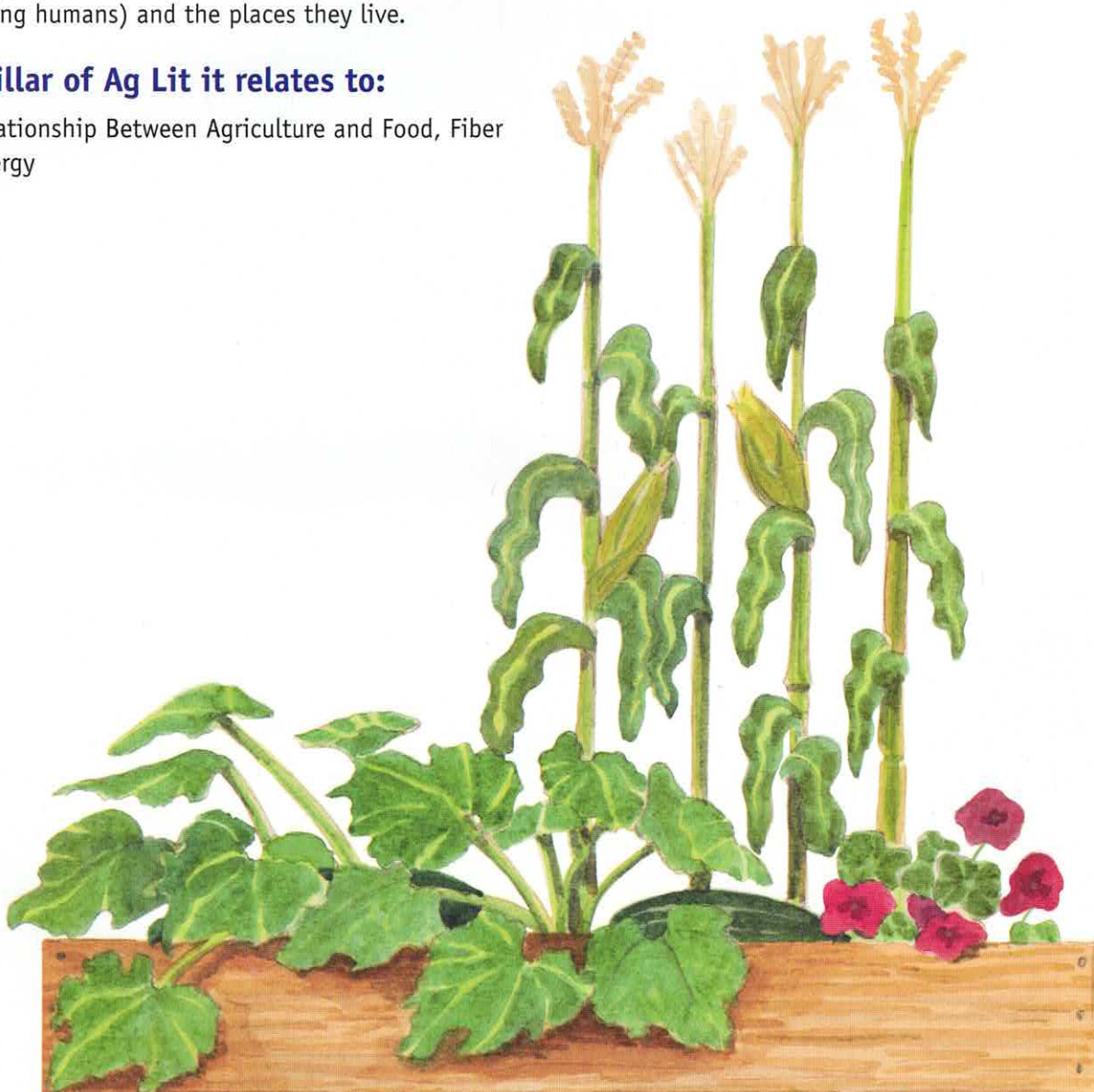
K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

The Pillar of Ag Lit it relates to:

The Relationship Between Agriculture and Food, Fiber and Energy

Materials:

- Activity 1 Worksheet
- Writing/coloring utensils
- Variety of seed packets (optional)
- Glue (optional, only if using seed packets)
- Desk or small table for demonstration
- Cup of water
- Small snack for demonstration (Ex: apple, granola bar, bag of chips, etc.)



Procedures:

In this activity, students will read the book, explore basic plant needs, and design a garden space for their home or school.

1. Prior to the lesson, put a desk or small table at the front of the room with the cup of water and the snack on it.
2. Read the book "How to Grow a Monster." Once finished, return to pages 9 to 11. Review the pages and pictures with the students specific to what the seeds and plants need, including soil, sun, water and spacing.
3. To demonstrate the need for appropriate spacing, use the desk or small table at the front of the class. Tell 4-10 students that they are small plants called seedlings. Tell 4-10 additional students that they are weeds. (Note: Numbers can be adjusted for class size.) Explain that the desk/table is the soil or garden space and that the water and snack must be shared by any plants growing in that space.
4. Call up 1 seedling and have them sit or stand around the desk or small table. Draw attention to the fact that the student / "seedling" has plenty of personal space, and wouldn't have to share the cup of water and the snack. Invite the rest of the seedlings up to the desk/table individually or in small groups and point out how the desk/table space gets more crowded and that they would have to share the water and the snack.
 - a. Explain that spacing with seeds/seedlings/plants is the same. Ask students to explain what they watched with the demonstration.
 - b. Answer: The more plants in a space, the less room they have to grow and the less water and nutrition they get overall. Even if all of the plants are the ones you want to grow, they will still compete for their basic plant needs.
5. Allow most of the seedling volunteers to return to their seats. Have 1-2 seedlings remain at the desk/table. Invite 1 weed to join them at the desk/table. Have students explain what happens

with the additional person at the desk/table (they have less space, water and nutrition). Invite the rest of the weeds up to the desk/table individually or in small groups until they are all around the desk/table.

- a. Ask students "Is this scenario the same or different than before?"
 - b. Answer: Whether wanted or unwanted plants, the concept is still the same. Too many plants in one space will reduce growth due to competition for space, water and nutrition from the soil.
6. Have students go back to their seats. Show students the Activity 1 Worksheet and explain that each student will plan a garden. On a whiteboard draw a grid that is 7" by 7" with 7 squares that each represent 1 square foot. Remind them of the demonstration and what plants need (soil, sun, water and spacing). For the younger grades, encourage seeds that are spaced out. For the older grades, see the extension below.
 7. Using writing/drawing utensils OR actual seeds and glue, have students plan their garden on the Activity 1 Worksheet grid.
 8. To conclude the lesson after the activity, ask students to call out what plants need to thrive and grow.

Grade 2-3 optional extensions:

- Have students draw a tree on the outside of the grid on the Activity 1 Worksheet. Then have them analyze their garden with this new addition and explain whether their garden would still grow well with the shady spot, or if they would need to redo their garden plan.
- Look at the individual seed packets and identify the specific spacing needs for each plant in the garden. Have students plan their garden with these spacing needs in mind.



Activity 1: I Need My Space!

WORKSHEET

Directions: It's time to plan your garden! Think about what you would like to grow. Using your writing utensil or seeds, decide what you should plant and where. Don't forget what plants need – including space! Each square represents 1 square foot, or 12 inches tall by 12 inches wide.

NOTE: each square represents a square foot, and is not to scale.
