

# Turnip Tetris

## How Many is too Many Turnips - Lesson 3



### For the Classroom

- Group structure - whole group or small groups
- Location - in open space
- Approximate time - 15 minutes

### Common Core and Georgia Standards of Excellence

- CCSS.MATH.CONTENT.3.MD.C.5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
  - CCSS.MATH.CONTENT.3.MD.C.6. Measure areas by counting unit squares.
  - CCSS.MATH.CONTENT.3.MD.C.7. Relate area to operations of multiplication and addition.
  - CCSS.MATH.CONTENT.3.MD.C.7.B. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
- CCSS.MATH.CONTENT.3.MD.D.8. Solve real world mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths.

### Materials

- 12 x 12 sheets of newspaper, ideally with seeds glued (1 per child)

### Directions

1. Distribute a 12 x 12 sheet of newspaper to each student. Challenge children to consider what the combined area of all of their square foot gardens planted next to each other would be.
  - a. First, count the unit squares - adding “1 square foot” for each square newspaper garden.
  - b. Then, check your answer by laying out the squares into a polygon and multiplying the sides of each of the rectangular figures that make up the complete garden.
2. Challenge children to calculate what the perimeter of the combined garden would be. Remembering that each side of their square foot gardens is one foot long. Pose the situation as if they were going to create a border around their garden of bricks, rope, etc.
3. Ask students to consider if they changed the configuration of their garden if the area would change and if the perimeter would change.
4. Reconfigure the class garden multiple times calculating the area and perimeter each time to determine how they are affected.
5. When complete, the class can plant their square foot gardens outdoors. They should be planted in an area that receives plenty of sunlight and the newspaper sheet should be covered up with about ½ inch of soil. The gardens should be watered regularly when rain is not consistent.

Lesson Created by Jenna Mobley for Georgia Organics