

How Many is Too Many 2.

Square Foot Spinach _____



For the Classroom:

- Group structure - whole group or small groups
- Location - at seats
- Approximate time - 40 minutes

Common Core and Georgia Standards of Excellence:

- CCSS.MATH.CONTENT.3.OA.A.3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Materials:

- Spinach seeds (9 per child)
- 12 x 12 sheets of newspaper (1 per child)
- Rulers (1 per child)
- Flour, water, bowl to make paste (1 per small group)
- Popsicle sticks for paste (1 per small group)

Directions:

1. Distribute to each child a pencil and a 12 x 12 sheet of newspaper. Ask children to write their name on one side of their newspaper. Explain that the class will be creating square foot gardens - this is the practice of dividing a growing area into small square sections to ensure efficient use of space.
2. Distribute a ruler to each child. Explain that spinach can grow with up to 9 spinach plants equally spaced in one square foot. Challenge children to fold their square foot of newspaper to show nine equal parts.
 - a. Remind students to consider what they know about a square foot.
 - b. The length of each side is 12 inches.
 - c. Encourage students to consider what they know about arrays to determine how to divide each side of the square foot to result in nine equal parts total.
 - d. $X * Y = 9$, $3 * 3 = 9$
 - e. Students can use their knowledge of division to determine how to divide the side of 12 in into 3 equal parts. $12 \text{ in} / 3 = 4 \text{ in}$
 - f. Students can divide each side into 4 in sections, creating 3 squares on each side, and 9 squares total.
3. Distribute a small bowl to each small group. Fill it about $\frac{1}{3}$ full of flour and then add water until it becomes sticky. Add a popsicle stick to each bowl.
4. Distribute a packet of spinach seeds to each group. Explain that each student will place a small dab of glue in the middle of each square where they would like the plant with a spinach seed. Then, they will place one seed gently on top.
5. Allow newspaper squares to dry. Then, children can plant their newspaper squares just barely under the soil and water to them to see if their seeds will grow!

Lesson written by Jenna Mobley for Georgia Organics