Add It Up! - Pueblo Chile Math Activity

Academic Standard Connections: *Students will use the chance of rolling a die or flipping a coin to answer questions about how many acres of green or red chiles they as a farmer will harvest, meeting standards for Grades 1, 3, 4, 5 Mathematics (CCSS: 1.NBT.C.4; CCSS: 3.NBT.A.2; CCSS: 3.OA.D.8; CCSS: 3.MD.C.5; CCSS: 4.NBT.A.1; CCSS: 4.NBT.B.4; CCSS: 4.OA.A.3; CCSS: 5.NBT.A.2; CCSS: 5.NBT.A.4).*

Name: _____

Scenario: The average size of a Pueblo Chile farm is 60 to 100 acres. These acres are divided up into multiple fields. A typical field of Pueblo Chiles is 5 to 10 acres. One acre is 43,560 square feet or about the size of a football field. Fruit and vegetable growers, including Pueblo Chile growers, have a variety of sized fields in different parts of the county and in different counties. This geographical diversity helps protect their harvest from weather damages. For example, one field may be damaged by hail or drought, but hopefully another field in another area did not receive the bad weather.

Imagine you are a Pueblo Chile grower. Your farm is 80 acres with 11 fields. You have decided you want to produce both green and red chiles. All pepper pods on Pueblo Chile plants start as green. You may harvest the green pods. Or allow a little more time for the pods to ripen more to turn red. Red pepper pods have a higher sugar content than green. Your customers think both colors are delicious! How will you decide which fields will be harvested green and which will be harvested red?

Directions: Roll one die or flip a coin to decide what color pepper pods will be harvested from each of your Pueblo Chile pepper fields. Roll/flip once for each field. Write the results on each field below (either red or green). After your fields are completed, answer the questions.

- Green chile pods = Odd number die rolls (1, 3, 5) or if the coin flip lands on heads.
- Red chile pods = Even number die rolls (2, 4, 6) or if the coin flip lands on tails.

Field 1	Field 2	Field 3
10 Acres	**10 Acres**	**10 Acres**

Field 8
5 Acres

Field 4	Field 5	Field 6
10 Acres	**10 Acres**	**5 Acres**

Field 9
5 Acres

Field 7
5 Acres

Field 10
5 Acres

Field 11
5 Acres

Questions:

1. How many fields will be harvested green?

_____

2. How many fields will be harvested red?

_____

3. How many acres of green fields will you have?

_____

4. How many acres of red fields will you have?

_____

5. Imagine a hail storm damaged all the pepper plants in Field 4, Field 5, Field 6, and Field 7 and you cannot harvest those fields. How many acres of each color will now be harvested?

Green acres: _____

Red acres: _____

Add It Up! - Pueblo Chile Math Activity (Advanced)

Academic Standard Connections: *Students will use area concepts and given information to determine how many peppers to plant or how many acres are planted, meeting standards for Grades 3-7 Mathematics (CCSS: 3.MD.C.7; CCSS: 3.OA.D.8; CCSS: 4.OA.A.3; CCSS: 5.NBT.A.2; CCSS: 6.RP.A.1; CCSS: 6.RP.A.3; CCSS: 6.G.A.1; CCSS: 7.G.B.6; CCSS: 7.NS.A.3)*

Name: _____

How many pepper plants will be planted?

- The average Pueblo Chile farm is 60-100 acres, divided into multiple fields.
- One Pueblo Chile field is typically 5 to 10 acres.
- 1 acre is equal to 43,560 square feet.
- The typical planting ratio for an acre of Pueblo Chile plants is 30,000 plants per acre:
  (Number of Plants : Number of Acres - 30,000 : 1)
- Peppers can be grown from seeds sowed in the field, or from young plants called seedlings that are grown in a greenhouse and transplanted into the fields.

Use the above information to answer the following questions:

1. If your field was 10 acres in size, how many pepper seedlings would you transplant to that field to have a planting ratio of 30,000 : 1?

_____

2. How many acres of land would you need to grow 120,000 pepper plants?

_____

3. If you chose to plant 80 acres of land with pepper plants, have many pepper seedlings would you need?

_____

4. You decide to plant 3 fields that are 9 acres in size and 12 fields that are 6 acres in size with peppers.

   A. How many total acres will you plant?

_____

   B. How many pepper plants will you need to plant all the fields?

_____

4. Your neighbor is planning to plant 975,750 square feet of pepper plants. About how many total acres will they plant (round your answer to the nearest tenth)?

_____

Thinking Cap Extra Credit Question: How many pepper plants will your neighbor need to have on hand to plant their 975,750 square feet of land (round your answer to the nearest whole number)?

_____