

NC Strawberry Investigations Math Questions for 3rd Grade

Standard	Question
3OA1/3OA3	<p>Students will use multiplication determine the total number of items being described. Students should draw pictures or use manipulatives to help them solve the problems.</p> <p>*Susie brought strawberry snack cakes for the class. There are 8 cakes in each box. Susie brought 4 boxes. Find the total number of cakes Susie brought.</p> <p>*Mrs. Smith has a small garden with 9 rows of strawberries. There are 8 plants in each row. Find the total number of strawberry plants in Mrs. Smith's garden.</p> <p>*A flat of strawberries has 10 rows and 6 columns. How many strawberry plants are in a flat? (Explain that a flat is a container of strawberry plants.)</p>
3OA2/3OA3	<p>Students will use division to find equal shares. Students should draw pictures or use manipulatives to help them solve the problems</p> <p>*Susie brought 32 strawberry snack cakes for the class. There are 8 cakes in each box. Find the number of boxes Susie brought.</p> <p>*Mrs. Smith planted 72 plants in a small garden. She divided her garden into 9 equal rows. Find the number of strawberry plants in each row. Make a model to show your work.</p> <p>*There are 60 plants in a flat of strawberry plants. The flat is divided into 10 rows. Find the number of plants in each row.</p>
3OA4	
3OA5	<p>Students will create arrays to show the commutative property of multiplication. Given a specific number of plants (e. 36), students will design a garden for planting the strawberries. Ex. They can show 9 rows with 4 plants in each or 4 rows with 9 plants in each with the understanding that $9 \times 4 = 4 \times 9$.</p>
3OA6	
3OA7	<p>Fluently multiply and divide within 100. Students can use equal containers of strawberries to practice multiplication facts.</p>
3OA8	
3OA9	<p>Students should recognize that the leaves on a strawberry plant are in groups of three (trifoliate). Students can skip count by 3's to develop an understanding of the 3's times tables. Next, they will count the sets of leaves on the plant and multiply that by 3. Students will record the pattern.</p>
3NBT1	<p>Students will count various containers of strawberries and round the number to the nearest 10.</p>
3NBT2	<p>Students will fluently add and subtract numbers within 1000.</p> <p>*The fruit stand sold 245 quarts of strawberries last week and 312 quarts of strawberries this week. How many quarts of strawberries did they sell during the two week period?</p> <p>* When Susie opened the fruit stand at the Farmer's market this morning, she had 500 pounds of strawberries. She sold 350 pounds. Find the number of pounds she had at the end of the day.</p> <p>*Susie picked 142 strawberries and Jose picked 521 strawberries. How many more strawberries did Jose pick?</p>
3NBT3	<p>Students will multiply one-digit numbers by multiples of 10.</p> <p>*Strawberry plants are usually sold in bundles of 50. If the strawberry farmer bought 8 bundles of plants, how many plants did he buy?</p>
3NF1	<p>Students can divide strawberry fields into halves, thirds, fourths (quarters) and understand that dividing the fields make them smaller plots of land. Have students create and properly label ($1/4$, $1/3$, etc.) several examples of how a field could be divided. Students should recognize that as the number of equal pieces of the whole increases, the fractional part becomes smaller. (Explain to students that farmers divide their fields at harvest time to maximize continuous growth, especially at "you pick" farms. Explain to students that people will pick strawberries in different sections of the field on a daily basis.) As an extension,</p>

	students can create a map to show the sections of a strawberry field and the schedule for harvesting in each schedule. For example, section 1 can be harvested on Mondays and Thursdays. Section 2 can be harvested on Tuesday and Friday, etc.
3NF2	
3NF3	<p>a. Students will recognize and understand that two $\frac{1}{4}$'s is the same as $\frac{1}{2}$. Students will use the concept of dividing the strawberry field (see 3NF1) to see the relationship of fractions. Ex. If the field is divided into 4 equal regions, then two $\frac{1}{4}$'s will be the same as one $\frac{1}{2}$. Ask students to explain why this information would be useful to a farmer.</p> <p>b. Using the information above, generate the number sentence $\frac{2}{4} = \frac{1}{2}$ to show equivalent fractions.</p> <p>c.</p> <p>d. Look at two different size strawberry fields. Divide each field into fourths and understand that equivalent fractions are only equal when they refer to the same whole. (One fourth of a square would not be equal to one fourth or a rectangle.)</p>
3MD1	<p>Students will use a number line to determine the correct time.</p> <p>*The strawberry farmer turns on the water at 7:15 am. He lets it run for 30 minutes. What time will he turn off the water? Students will use a number line to determine the correct time.</p> <p>*Susie arrives at the Farmer's Market at 6:00 am. It takes her 40 minutes to unload her strawberries. What time will it be then?</p>
3MD2	<p>Students will estimate liquid volume and masses of objects using grams, kilograms, and liters.</p> <p>*Students will estimate the mass of a strawberry, a strawberry plant, or a container of strawberries.</p> <p>*Students will estimate the mass of strawberry products like candy, cake, teaspoon of jam, etc.</p> <p>*Students will estimate the volume of a liquid strawberry product such as milk or liquid fertilizer if they have a garden.</p> <p>*Students will research the container volume necessary to grow strawberries. (Suggested is 16" across and 12" deep.) Students should estimate the amount of soil (in liters) to fill the container.</p>
3MD3	<p>*Students will create a scaled picture graph or scaled bar graph with several categories showing strawberry favorites like ice cream, candy, cake, fresh, etc.</p> <p>*If students have access to a garden or greenhouse, they can graph the number of berries harvested daily from their assigned plant.</p> <p>* Using the NC Department of Agriculture's Strawberry Statistics Sheet, students will interpret the data presented in the bar graph and answer questions about the graph including:</p> <ol style="list-style-type: none"> 1. What was being measured? 2. What interval was used for the scale? 3. How many more strawberries were produced in 2012 than in 2011? 4. How many fewer strawberries were produced in 2010 than in 2009? <p>*Have students research the number of strawberries grown in the top 5 NC counties and create a picture graph displaying this data. Then, include the data for your county.</p>
3MD4	<p>Students will measure specific attributes of a strawberry plant to the nearest $\frac{1}{2}$ and $\frac{1}{4}$ of an inch. Then create a line plot showing the height, width, number of leaves, number of berries, etc. Students should be able to analyze the data and make generalizations about the data. For example, if there are more "x" marks over the $\frac{3}{4}$ inch mark for length of strawberries, students should be able to conclude that most strawberries (on their plants) are $\frac{3}{4}$ inch in length.</p>
3MD5/3MD6	<p>Explain to students that farmers use measures of square feet when they are measuring their fields. They should understand that 1 square foot means a square with a measure of 1 foot. They should see an example to understand. Give students paper squares that measure 1 foot each. Allow them to "build" a strawberry bed using their squares and determine the area in square feet. They should understand that area is measured in the number of squares it takes to cover that spot.</p>

	*If they have access to a strawberry garden, they should determine the area using their paper squares.
3MD7	a. and b. Students will measure the length and width of the strawberry garden or paper model (above) and multiply the two numbers to determine the area. They will write the number sentence and compare the product to the number of squares they used for the paper model activity. c. and d.
3MD8	Mrs. Smith has discovered rabbits in her strawberry garden. She has decided to put up a fence to keep the rabbits out of her garden. Her garden is 12 feet long and 10 feet wide. Students will use perimeter to determine how many feet of fence Mrs. Smith needs for her garden.
2G1	
2G2	Students will divide strawberry fields into halves, thirds, fourths (quarters) and understand that dividing the fields make them smaller plots of land and that these smaller plots all have the same area.

North Carolina Strawberry Association – www.ncstrawberry.com

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