My Family's Cotton Farm Math Lesson Plan

Grade Level/Age Range

1st – 2nd grade; 6-8 years old

Time

30 minutes

Purpose

Students will gain an understanding on how math is related to cotton farming. Students will use addition and subtraction in the lesson.

Georgia Standards of Excellence

First Grade:

MGSE1.OA.1: Use addition and subtraction within 20 to solve word problems by involving situations of adding to, taking from, putting together, taking apart, and comparing within unknowns in all positions e.g., by using objects, drawings and equations with a symbol for the unknown number to represent the problem.

MGSE1.OA.2: Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Second Grade:

MGSE2.OA.1: Use addition and subtraction within 100 to solve one and two step word problems by using drawings and equations with a symbol for the unknown number to represent the problem. Problems include contexts that involve adding to, taking from, putting together/taking apart (part/part/whole) and comparing with unknowns in all positions.2

MGSE2.OA.2: Fluently add and subtract within 20 using mental strategies.3

MGSE2.NBT.5: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction

Materials

My Family's Cotton Farm Book

My Family's Cotton Farm Math Worksheet

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ABAC

My Family's Cotton Farm Math Lesson Plan

Resources

Georgia Farm Bureau: https://www.gfb.org/

Georgia Cotton Commission: https://georgiacottoncommission.org/

University of Georgia: Cotton | UGA Cooperative Extension | https://extension.uga.edu/topic-areas/field-crop-forage-turfgrass-production/cotton.html

Vocabulary

Acre: A unit of measuring land; about the size of a football field

Cotton Farm: A place where cotton is grown

Background

Georgia and other southern states have ideal conditions for growing cotton. Cotton requires prolonged heat and lots of sunshine, which is the climate of southern Georgia. This area does get rain occasionally, but it dries out quick enough for cotton to get healthy. Cotton has many advantages over other textiles because it is breathable, comfortable, and hypoallergenic. Cotton is also very sustainable. There is a large variety of products produced by cotton. Besides clothing, products include bedsheets, band-aids, cottonseed oil, and cottonseed feed for cattle.

Procedure

1. Read *My Family's Cotton Farm* to student's or have them read it to themselves. Provide time for them to review all the information and make observations.

2. Lead a discussion with the students about the following:
   a. Was there any information which was surprising and new to them?
   b. Where were numbers located in the book? What did those numbers represent?
      i. 10 years old: how old the great grandpa was when he started working on a cattle farm, p4
      ii. 3,000 acres: how big the farm is, p4
      iii. 1 million acres: how many acres of cotton are planted each year, p5
      iv. Six to seven months: how long the cotton will grow for, p6
      v. Half-inch to one inch: how deep cotton seeds are planted, p6
      vi. 10 to 48 rows: how many rows of seeds can be planted at once, p6

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vii. 12 rows: how many rows Mason's family planter can plant at one time, p8

viii. Ten feet tall: how tall cotton could grow without growth regulator, p8

ix. 21 million bales of cotton: how many bales of cotton the United State produces, p9

x. 500 pounds: the weight of each bale of cotton, p9 and p19

xi. 0.28 inches, the amount of water cotton plants need each day, p13

xii. 1.96 inches, the amount of water cotton plants need each week, p13

xiii. Fifty to sixty days old: the age of the cotton plant needs the 0.28 inches of water a day or 1.96 inches of water a week, p13

xiv. 125,000 jobs: the number of jobs within Georgia's cotton industry, p17

xv. $21 billion: the amount worth of product within Georgia's cotton industry, p17

xvi. 50 workers: the number of workers that were replaced with each cotton gin, p19

xvii. 215 jeans: the number of jeans that can be produced from just one bale of cotton, p21

xviii. 690 bath towels: the number of bath towels that can be produced from just one bale of cotton, p21

xix. 249 bed sheets: the number of bed sheets that can be produced from just one bale of cotton, p21

xx. 3,085 diapers: the number of diapers that can be produced from just one bale of cotton, p21

xxi. 4,321 socks: the number of socks that can be produced from just one bale of cotton, p21

xxii. 7,000 years: the amount of time that cotton has been used for, p24

xxiii. $8 million, the value of cotton with the invention of the cotton gin, p24

xxiv. Hundreds: the number of uses of cotton, p24

xxv. Three different products: the number of products that cottonseed gets crushed into, p24

c. What are some ways Cotton Farmer's would use numbers? Or addition and subtraction?

3. In the class discussion, explain situations where cotton farmers use math, specifically addition and subtraction (like on the worksheet). Go over examples with the class before having them complete the worksheet by themselves.

4. Provide students with the *My Family's Cotton Farm* Math Worksheet.

5. Answer key for worksheet
   1st Grade – Addition and Subtraction

   1. 8 acres   (3 acres + 5 acres = 8 acres)
   2. 10 acres   (3 acres + 4 acres + 3 acres = 10 acres)
   3. 6 acres   (9 acres – 3 acres = 6 acres)
   4. 3 acres   (8 acres – 2 acres – 3 acres = 3 acres)
   BONUS. 10 acres   (7 acres – 2 acres + 5 acres = 10 acres)

   2nd Grade – Addition and Subtraction

   1. 70 acres   (25 acres + 45 acres = 75 acres)
   2. 98 acres   (15 acres + 44 acres + 39 acres = 98 acres)
   3. 48 acres   (75 acres – 27 acres = 48 acres)
   4. 31 acres   (88 acres – 12 acres – 45 acres = 31 acres)
   BONUS. 83 acres   (64 acres – 12 acres + 31 acres = 83 acres)

Other Reading Connections

- *Cotton: The Little Plant that Snored* by Johnny Strader and Monica Sanchez
  Little Cotton couldn't help that he was different from all the other plants in the field. And though he often felt sad and alone, deep down inside he still believed that Mother Nature has a very special plan for him – A plan that would turn out to be much bigger than anyone could have ever imagined.
- *Cotton Picker* by Samantha Bell
  Students will develop word recognition and reading skills while learning about what happens on a farm.

Sources

AG MAG (n.d.) Georgia Farm Bureau and Georgia Cotton Commission. Retrieved March 15, 2022, from https://georgiacottoncommission.org/wp-content/uploads/2020/09/CottonAg.pdf.

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The Dixon Family. (May 15 and December 7, 2021). Personal Interviews.