

# Grainy Graphing

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## **Standards of Learning**

Science 1.1, 1.8, 4.1, 4.9

Math 1.14, 1.15, 1.16, 2.17, 2.19, 3.17, 4.14

## **Objective**

Students will:

- Collect, organize and display data in a bar graph
- Analyze and interpret data from table and bar graph
- Review Virginia crops as natural resources

## **Materials**

- Acres Harvested by Virginia Field Crops (2002) table (handout provided)
- Graph paper
- Crayons/markers
- Field Crops Data Questions worksheet (handout provided)

## **Background Knowledge**

This lesson focuses on students' construction and analysis of a bar graph displaying data of the amount of land harvested by Virginia field crops. If you have not already taught your students about the size of an acre, you may want to do so before teaching this lesson. "Discover an Acre" is a great activity for teaching students the size of an acre. This activity can be found in "Ten Things Kids Want to Know about Farming" lesson plans, which were given to your school at the AITC workshop. These lesson plans and accompanying video can also be ordered from the American Farm Bureau Foundation for Agriculture at [www.ageducate.org](http://www.ageducate.org)

## **Procedure**

1. Ask the students how many inches are in one foot.
2. After they answer correctly, ask how many square feet are in an acre.
3. Remind the students that there are 43,560 square feet in one acre.
4. Tell the students that it takes many acres of land to grow, or harvest, crops.
5. Tell them that today they will be learning about how much land is harvested by the field crops grown in Virginia.
6. Hand out the Field Crops Harvested in Virginia (2002) table to each student.
7. Read over the table with the students and ask if they have any questions on how to read it.
8. Point out to them that the Acres Harvested column represents numbers in thousands. Explain that this means the numerals written in the column must be multiplied by 1,000 to find the actual number of acres harvested.
9. Hand out a piece of graph paper and the Field Crops Data Questions worksheet to each student.
10. Tell them that they will be making a bar graph of the data in the table on their graph paper.
11. Tell the students to label the horizontal (x) axis as *Field Crops* and the vertical (y) axis as *Acres Harvested (in thousands)*.
12. Tell the students to label the x axis with the crop names.



13. Since the numbers in the data are so large, tell the students to start at zero and count by 50's for the vertical axis.
14. Tell them that their increments for the vertical axis should start at zero and go to 500 in multiples of 50.
15. Ask the students to draw, label, and color their graph.
16. After they have completed their graph, tell them to answer the questions on the worksheet.  
*Number 3 deals with the concept of a median value. You may want to explain this concept with your class first.*
17. Ask a few students to share their answers to the questions from the worksheet.
18. Review the graphs with the students.

### **Extension**

Ask students to research and identify which of these Virginia crops deplete and which crops replenish nutrients from the soil.

Ask students to graph the cash value of seven agriculture commodities in your county. Graphs can be of all commodities or organized by crops and animals. Information for your county is available at [http://www.nass.usda.gov/Statistics\\_by\\_State/Virginia/Publications/Annual\\_Statistical\\_Bulletin/index.asp#dairy](http://www.nass.usda.gov/Statistics_by_State/Virginia/Publications/Annual_Statistical_Bulletin/index.asp#dairy). Scroll the bottom of the page and click on your county under County Data Summary.

### **References**

Virginia Farm Bureau Federation. (2004). *Value of agriculture*.  
[http://www.vafb.com/va\\_ag/agfacts.asp](http://www.vafb.com/va_ag/agfacts.asp)



Name: \_\_\_\_\_

Date: \_\_\_\_\_



### Field Crops Harvested in Virginia (2002)

Field Crop	Acres Harvested (in thousands)
Tobacco	30
Soybeans	440
Corn for grain	305
Wheat	170
Cotton	98
Peanuts	57
Barley	40

-Stats taken from the Virginia Farm Bureau Federation

[http://www.vafb.com/va\\_ag/agfacts.asp](http://www.vafb.com/va_ag/agfacts.asp)



Name: \_\_\_\_\_

Date: \_\_\_\_\_

### FIELD CROPS DATA QUESTIONS

**Instructions: After completing your bar graph, answer the following questions about Virginia's field crops using the table and your bar graph.**

1. What field crop has the most harvested acres in Virginia? How many harvested acres does this crop cover?

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2. What field crop has the least harvested acres in Virginia? How many harvested acres does this crop cover?

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3. What field crop has the middle number (median) of harvested acres in Virginia? How many harvested acres does this crop cover?

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4. How did you get the answer to number 3?

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5. How many acres, in total, are harvested by soybeans and wheat?

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6. By looking at your bar graph, how can you tell how many harvested acres are covered by each field crop?

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7. Write a few sentences describing your interpretation of the data in the table and your bar graph. Include whether or not you were surprised by the large amount of Virginia land harvested by field crops.

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