

Exploring Plant Growth

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Grade Level

Grade 1

TEKS:

MATH.1.9.A. Collect and sort data

MATH.1.9. B. Use organized data to construct real-object graphs, picture graphs, and bar-type graphs

MATH 1.10.A. Draw conclusions and answer questions using information organized in real-object graphs, picture graphs, and bar-type graphs

SCIENCE.4.A. collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as classroom demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as aquariums and terrariums

TECHNOLOGY.4.D. The student is expected to collect, analyze, and represent data using tools such as word processing, spreadsheets, graphic organizers, charts, multimedia, simulations, models, and programming languages.

Lesson Objective:

Use technology to create graphs that compare and contrast the growth of a plant when basic needs are met.

Materials/Resources:

- computer with Internet access, spreadsheet software such as MS *Excel* or *Graph Club*, printer, LCD projector or other projection device is desirable
- pencil
- graphic organizer (square inch grid)
- computer
- science journals

New/Review Vocabulary:

- cells
- rows
- columns
- data
- graph
- bar graph

Procedures:

Engage:

The teacher will capture the student's interest by showing a short video on making a bar graph.

Example:



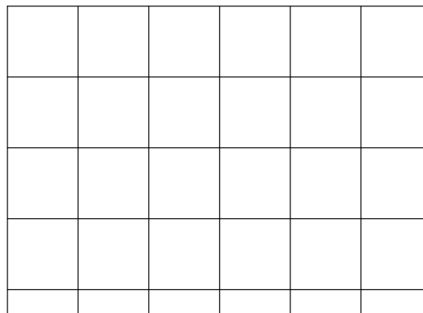
<https://www.youtube.com/watch?v=-Y9n67yG9d8>

Teacher: *Graphing data is very interesting and useful when collecting, organizing, and displaying information. Let's explore how we can use bar graphs to display information collected during our plant experiment.*

Explore:

- Let's look at our collected data from the past few weeks... what changed about our plants over time? (Height)
- Looking at the data (height from soil to top of plant) What happened to the numbers? (Increased)
- Introduce graphic organizer (chart). Model labeling rows and columns appropriately. Model transfer of information from journal into chart.
- Students will organize their data from journals into chart format.

Square-Inch Grid



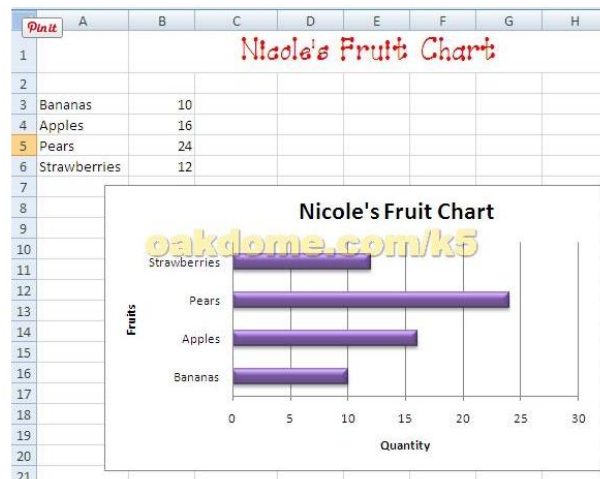
https://www.teachervision.com/tv/printables/scottforesman/Math_2_TTM_26.pdf

Explain:

- What did you notice about your bar graphs?
- We look at the graph from left to right, like we are reading. Does it go up or down?
- Why does the bar go up and not down?
- What would happen if I read the graph from right to left? (Going backwards in time)
- How did the computer software help us show/share our experiment information? Why might we want to use a computer to do this?

Elaborate:

- Model transferring data from chart directly into spreadsheet software and steps to create a bar graph.
- Students will work in pairs at the computer tables to follow steps to create bar graphs.



Evaluate:

- On-going observations of students during graphing process and the students work on the computers
- Printed copies of graphs will be evaluated for accuracy of data transfer

References

<http://www.tea.state.tx.us/index2.aspx?id=6148>

https://www.teachervision.com/tv/printables/scottforesman/Math_2_TTM_26.pdf

<https://www.youtube.com/watch?v=-Y9n67yG9d8>