How Do I Display That?

- The webinar will start at 3:30 pm EDT/ 2:30 pm CDT.
- If you have a technical question before the webinar, please type it into the question panel. We will do our best to answer your question.
- When you log on, check your audio to make sure your headphones are working properly.
- If you use your phone to call in, be sure to enter the appropriate codes.
- As you enter the webinar, your audio will be muted to avoid a lot of background noise.
- You will not hear anything until 3:30 p.m. when the webinar goes live, so please don't think that anything is wrong.
- If you haven't downloaded the PowerPoint handout and guide, please feel free to do so from the handout panel.

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How Do I Display That? GED[®] Science Test

A Workshop by GED Testing Service®

Welcome!

- · Daphne Atkinson, GED Testing Service
- · Debi Faucette, GED Testing Service
- Bonnie Goonen, Consultant to GEDTS
- · Susan Pittman, Consultant to GEDTS

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Session Objectives



- Explore math and graphic literacy skills assessed on the GED® Science test
- Work with quantitative data to construct and interpret charts, tables, and a wide range of graphics
- Identify strategies to help students build their graphic/visual literacy skills
- · Share resources

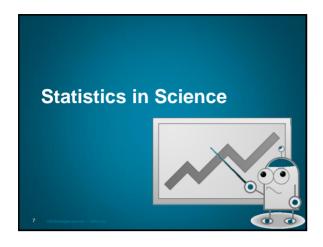
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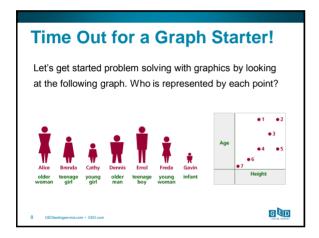


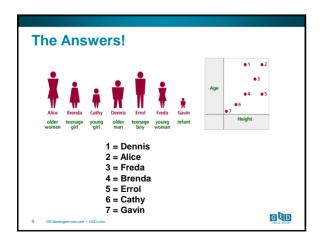
What do you think of when you hear the word statistics?

Where do we see statistics, data, and math on the Science Test?

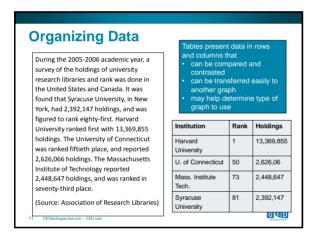
- Questions assessing and analyzing statistics and data indicators
- Questions that address the scientific method (including short answer questions)
- · Use of calculator and formulas
- · Charts, tables, and graphs

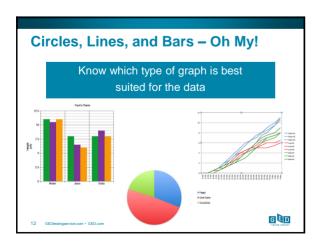












Do your students know...

Data tables

- · Present data in a series of rows or columns
- · Give easy access to information
- · Compare and contrast information
- · Set information for transfer to a graphic

Circle graphs (pie charts)

- Represent categorical data or values of variables
- · Are divided into segments which reflect proportion of variable to the whole
- Work best if segments are ordered clockwise from largest to smallest (easier to read)



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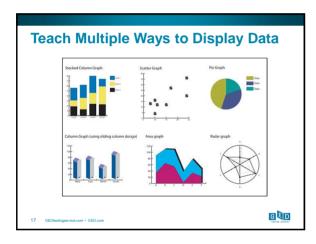
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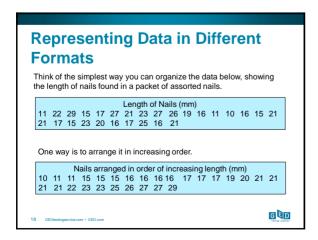
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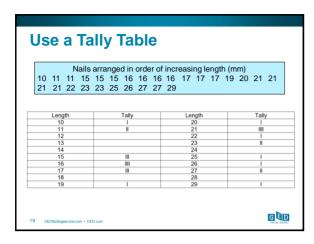
Do your students know... Line graphs · Show changes in direction (trends) · Compare two variables - x-axis usually represents time - y-axis represents percentage or measures of quantity · Can forecast results not yet gathered

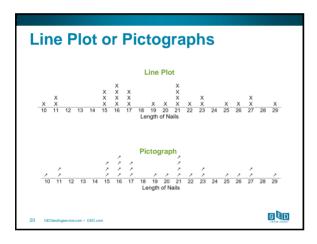
Do your students know... Bar graphs · Present and compare data, time series, frequency distribution Can include single, double, or multiple bars · Include scales on the axes Present a numerical or categorical variable for each bar · Can be vertical or horizontal GED

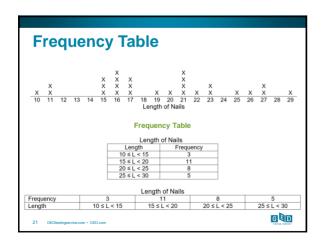


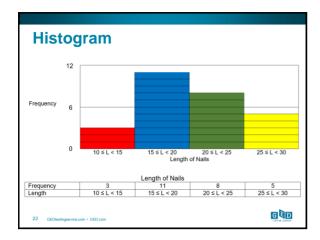


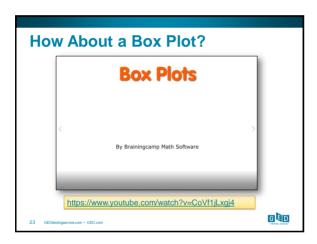




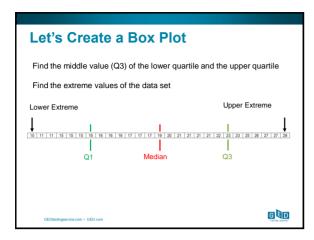


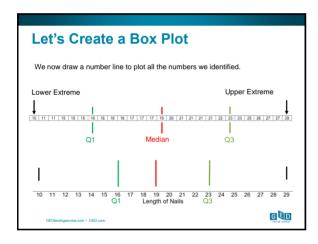


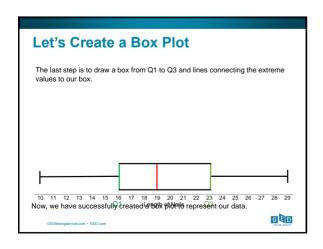




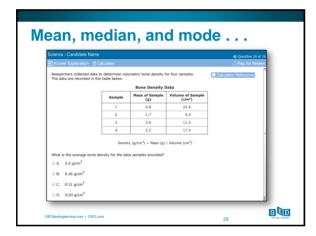
Let's Create a Box Plot				
Arrange data in order and divide into quartersFind the median of the data set				
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Measures of Central and Spread Another way to describe data is to describe its center and/or spread. Measures of Central Tendency Mean (Average) Median Measures of Variability Range Mean Absolute Deviation Standard Deviation





When analyzing data . . .

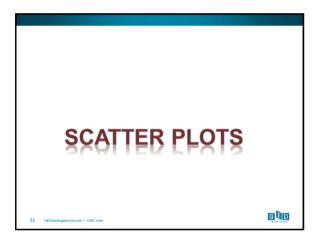
Ask students questions such as:

- · What pattern do you see?
- · What does this graph tell you?
- · Who could use this data?
- · How could they use it?
- Why is this data shown in a line graph, box and whisker graph, scatterplot, etc.?





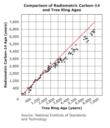




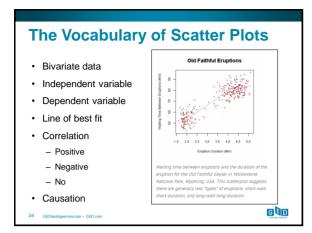
The Basics of Scatter Plots • Are similar to line graphs

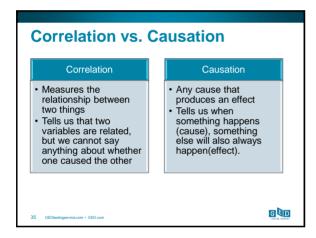
- Have horizontal and vertical axes
- Have two sets of data that are plotted as ordered pairs on a coordinate to show the relationship
- Show how much one variable is affected by another – the correlation

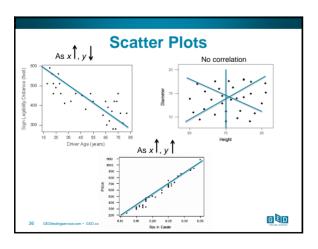
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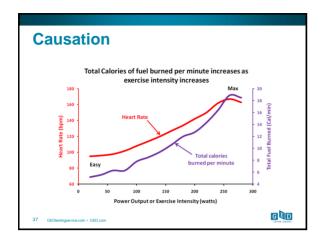


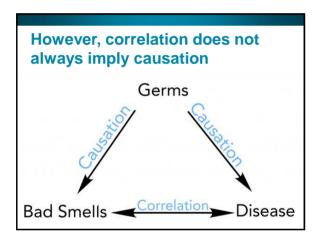
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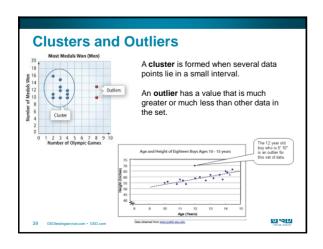


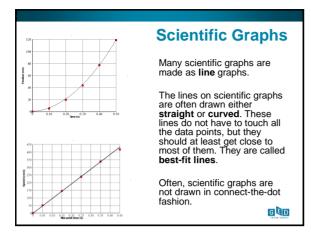


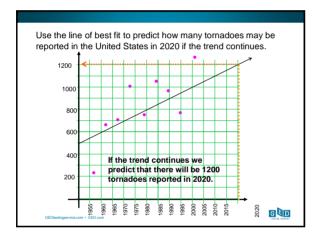


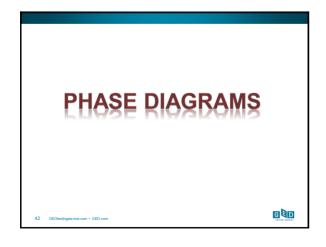










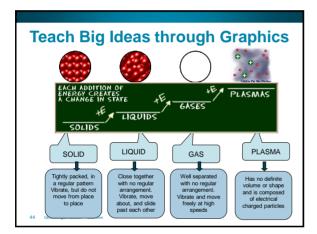


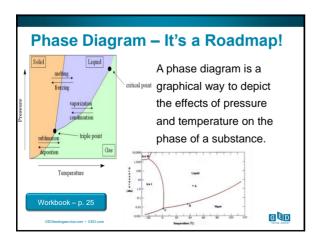
Teach Big Ideas through Graphics

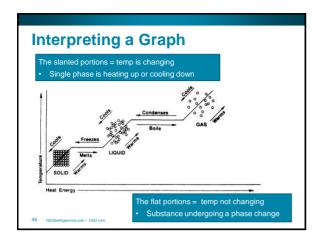
Kinetic Theory of Matter

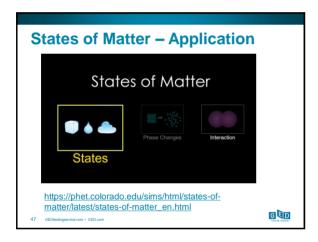
- · Molecules are always moving
- · Kinetic energy is measured as temperature
- The greater the material's internal energy, the higher the temperature of that material
- Heat is the energy flow between objects of different temperatures
- · Heat and temperature are not the same





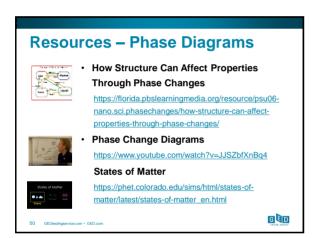


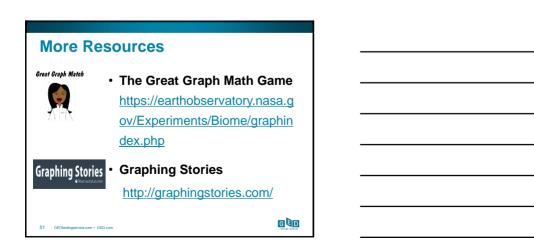






Data Analysis, Statistics, Probability http://www.learner.org/courses/learningmath/ data/index.html National Science Digital Library (lesson plans and more . . .) https://nsdl.oercommons.org/ Using Data in the Classroom – National Science Digital Library http://serc.carleton.edu/usingdata/index.html





Resources
Create a Graph
https://nces.ed.gov/nceskids/createagraph/
MSP2 - Handling All That Data
http://msp.ehe.osu.edu/wiki/index.php/MSP:Midd
leSchoolPortal/Statistics: Handling_all_that_Dat
<u>a</u>

Resources - Lesson Plans

- Graphing Lesson Plans
 http://www.ngsslifescience.
 com/biology lesson plans scientific method.ht
 ml
- Senses Lab A Graphing Lesson Plans The Senses

http://www.ngsslifescience.com/science.php?/biology/lessonplans/C411/

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Resources - More Lesson Plans

- Science Net Links. What's in a Graph?
 http://sciencenetlinks.com/lessons/whats-in-a-graph/
- The Master Teacher Project Are All Graphs Created Equal?

 $\frac{https://betterlesson.com/lesson/628519/are-all-graphs-created-equal-day-1-of-2}{}$

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Resources – More Lesson Plans Yummy Math (Search data lessons related to science) - https://www.yummymath.com • Total Solar Eclipse • Tick Time and Lyme Disease • Giant Iceberg Breaks Off Antarctica

Resources - Challenges • Take a Challenge! Does drinking soda affect your health? http://figurethis.nctm.org/challenges/c68/challenge.htm • Analyzing and Interpreting Data - Does It Sink or Float? https://bscs.org/sites/default/files/_media/community/downloads/analyzing_and_interpreting_data.pdf

