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INSTITUTE FOR THE PROFESSIONAL
DEVELOPMENT OF ADULT EDUCATORS

Mathematics Reasoning Across Subject Areas:

Summarizing and Analyzing Data

November 15, 2017

www.floridaipdae.org

This training event is supported with federal funds as appropriated to the Florida Department of Education, Division of Career and Adult Education for the provision of state leadership professional development activities.

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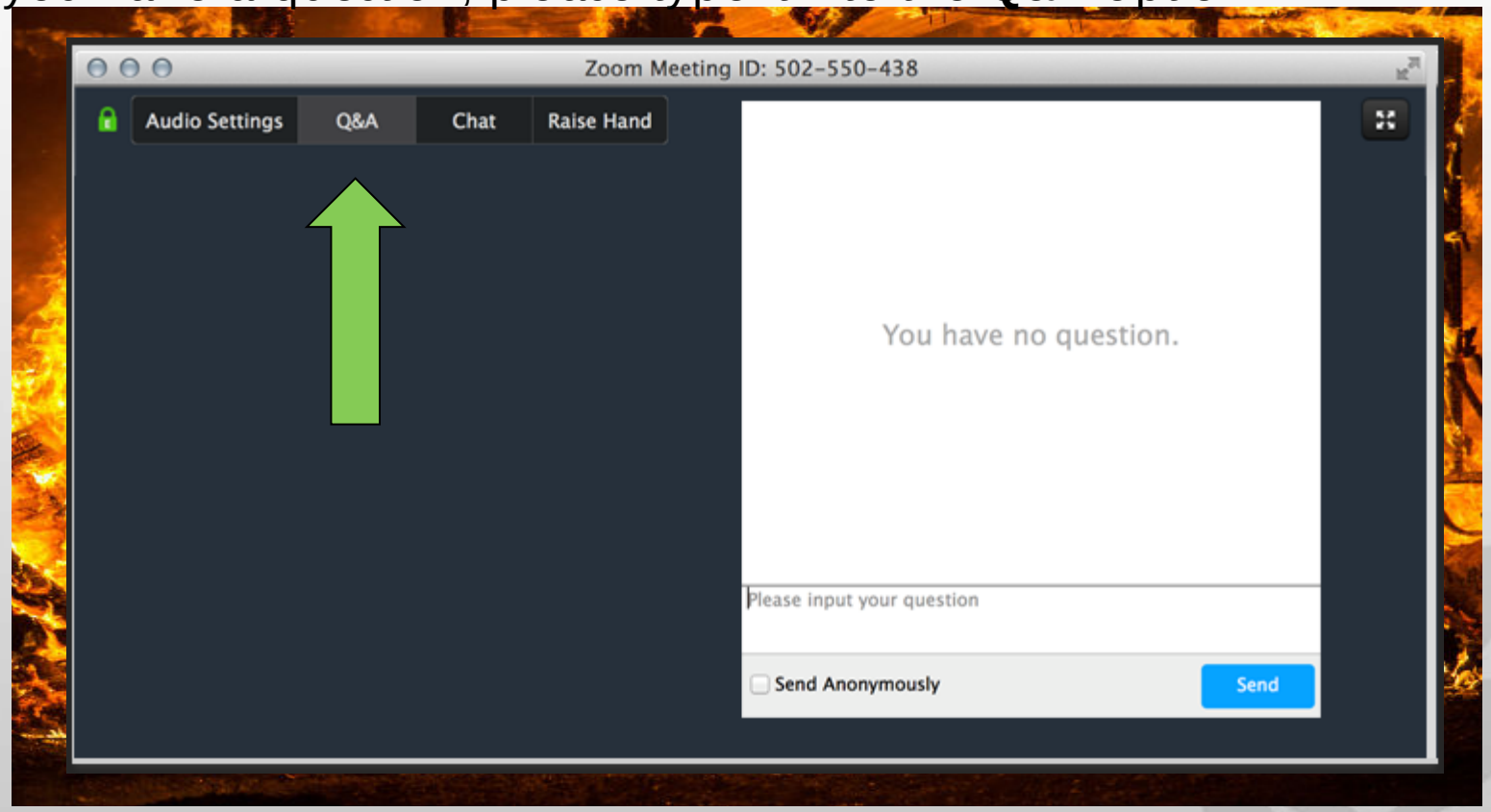
Webinar Things to Remember

- If you have a question, please type it into the **Q&A** option.



- Attendee microphones will be muted. You will be in **listen only** mode.
- Today's presentation is being **recorded**. It will be archived and available on the IPDAE website within 48 hours.

Agenda

I. “Summarizing and Analyzing Data” in the Standards
II. Review of Summarizing Data
III. Review of Analyzing Data
IV. Summarizing and Analyzing Data Across Subject Areas
V. Sample Activities and Lesson Ideas
VI. IPDAE Resources
VII. Q&A
VIII. Evaluation

Analyzing and Summarizing Data in the ABE Domains

ADULT BASIC EDUCATION MATHEMATIC DOMAINS					
Domain Number	**NRS Reporting Grade Equivalent (GE)**	**NRS Level 1 0.0 – 1.9**	**NRS Level 2 2.0 – 3.9**	**NRS Level 3 4.0 – 5.9**	**NRS Level 4 6.0 – 8.9**
1	Number and Operations: Base Ten	0.0 – 1.9	2.0 – 3.9	4.0 – 5.9	
2	Operations and Algebraic Thinking	0.0 – 1.9	2.0 – 3.9	4.0 – 5.9	
3	Measurement and Data	0.0 – 1.9	2.0 – 3.9	4.0 – 5.9	
4	Geometry	0.0 – 1.9	2.0 – 3.9	4.0 – 5.9	6.0 – 8.9
5	Number and Operations: Fractions		*3.0 – 3.9	4.0 – 5.9	
6	Expressions and Equations			4.0 – 5.9	6.0 – 8.9
7	The Number System			4.0 – 5.9	6.0 – 8.9
8	Ratios and Proportional Relationships			4.0 – 5.9	6.0 – 8.9
9	Statistics and Probability			4.0 – 5.9	6.0 – 8.9
10	Functions				*7.0 – 8.9

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The Mathematical Practices

Standards for Mathematical Practice

Make sense of problems and persevere in solving tl

Mathematically proficient students start by explaining to tl looking for entry points to its solution. They analyze given make conjectures about the form and meaning of the solut simply jumping into a solution attempt. They consider ana simpler forms of the original problem in order to gain insi evaluate their progress and change course if necessary. St problem, transform algebraic expressions or change the vi to get the information they need. Mathematically proficien between equations, verbal descriptions, tables, and graphs relationships, graph data, and search for regularity or trend using concrete objects or pictures to help conceptualize an students check their answers to problems using a different themselves, "Does this make sense?" They can understand problems and identify correspondences between different a

Reason abstractly and quantitatively. (MP.2)

Mathematically proficient students make sense of quantitie situations. They bring two complementary abilities to bear relationships: the ability to *decontextualize*—to abstract a and manipulate the representing symbols as if they have a attending to their referents—and the ability to *contextualiz* manipulation process in order to probe into the referents fo reasoning entails habits of creating a coherent representatio units involved; attending to the meaning of quantities, not flexibly using different properties of operations and object

Construct viable arguments and critique the reaso

Mathematically proficient students understand and use stat established results in constructing arguments. They make c statements to explore the truth of their conjectures. They a them into cases, and can recognize and use counterexampl communicate them to others, and respond to the arguments data, making plausible arguments that take into account th Mathematically proficient students are also able to compar arguments, distinguish correct logic or reasoning from that an argument—explain what it is. Less experienced student referents such as objects, drawings, diagrams, and actions. orrect, even though they are not generalized or made form

determine domains to which an argument applies. Students at all levels can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

Model with mathematics. (MP.4)

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. This might be as simple as writing an addition equation to describe a situation. A student might apply proportional reasoning to plan a school event or analyze a problem in the community. A student might use geometry to solve a design problem or use a function to describe how one quant can apply what they know complicated situation, rea quantities in a practical si tables, graphs, flowcharts conclusions. They routine reflect on whether the res

Use appropriate tools

Mathematically proficien These tools might include spreadsheet, a computer a Proficient students are sut decisions about when eacl and their limitations. For solutions generated using estimation and other math technology can enable the compare predictions with relevant external mathema pose or solve problems. T understanding of concepts

Attend to precision. (M

Mathematically proficient definitions in discussion v they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. Less experienced students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

Look for and make use of structure. (MP.7)

Mathematically proficient students look closely to discern a pattern or structure. Students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.

Look for and express regularity in repeated reasoning. (MP.8)

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Early on, students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel when expanding $(x-1)(x+1)$, $(x-1)(x^2+x+1)$, and $(x-1)(x^3+x^2+x+1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

IPDAE (2016). College and Career Readiness Standards Workshop Part 2. www.floridaipdae.org – ABE – Workshops

Analyzing and Summarizing Data in the GED Science Curriculum Frameworks

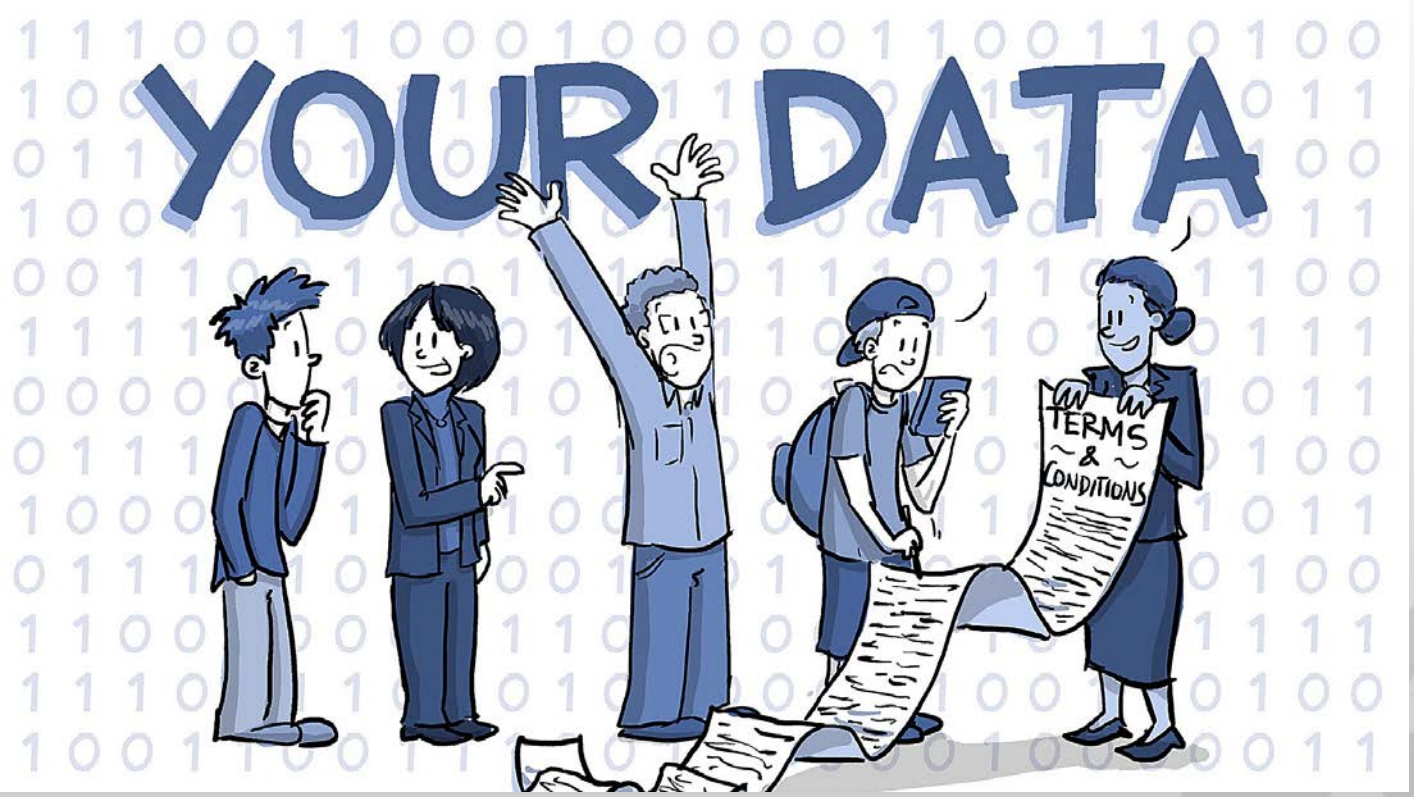
SCIENCE PRACTICES
SP.1 Comprehending Scientific Presentations
SP.1.a. Understand and explain textual scientific presentations
SP.1.b. Determine the meaning of symbols, terms and phrases as they are used in scientific presentations
SP.1.c. Understand and explain a non-textual scientific presentations
SP.2 Investigation Design (Experimental and Observational)
SP.2.a. Identify possible sources of error and alter the design of an investigation to ameliorate that error
SP.2.b. Identify and refine hypotheses for scientific investigations
SP.2.c. Identify the strength and weaknesses of one or more scientific investigation (i, e, experimental or observational) designs
SP.2.d. Design a scientific investigation
SP.2.e. Identify and interpret independent and dependent variables in scientific investigations
SP.3 Reasoning from Data
SP.3.a. Cite specific textual evidence to support a finding or conclusion.
SP.3.b. Reason from data or evidence to a conclusion.
SP.3.c. Make a prediction based upon data or evidence.
SP.3.d. Using sampling techniques to answer scientific questions.
SP.4 Evaluating Conclusions with Evidence
SP.4.a. Evaluate whether a conclusion or theory is supported or challenged by particular data or evidence.
SP.5 Working with Findings
SP.5.a. Reconcile multiple findings, conclusions or theories.
SP.6 Expressing Scientific Information
SP.6.a. Express scientific information or findings visually.
SP.6.b. Express scientific information or findings numerically or symbolically.
SP.6.c. Express scientific information or findings verbally.
SP.7 Scientific Theories
SP.7.a. Understand and apply scientific models, theories and processes.
SP.7.b. Apply formulas from scientific theories.
SP.8 Probability & Statistics
SP.8.a. Describe a data set statistically.
SP.8.b. Use counting and permutations to solve scientific problems.
SP.8.c. Determine the probability of events.

Analyzing and Summarizing Data in the GED Social Studies Curriculum Frameworks

Social Studies Practices
SSP.1 Draw Conclusions and Make Inferences
SSP.1.a. Determine the details of what is explicitly stated in primary and secondary sources and make logical inferences or valid claims based on evidence.
SSP.1.b. Cite or identify specific evidence to support inferences or analyses of primary and secondary sources, attending to the precise details of explanations or descriptions of a process, event, or concept.
SSP.2 Determine Central Ideas, Hypotheses and Conclusions
SSP.2.a. Determine the central ideas or information of a primary or secondary source document, corroborating or challenging conclusions with evidence.
SSP2.b. Describe people, places, environments, processes, and events, and the connections between and among them.
SSP.3 Analyze Events and Ideas
SSP.3.a. Identify the chronological structure of a historical narrative and sequence steps in a process.
SSP.3.b. Analyze in detail how events, processes, and ideas develop and interact in a written document; determine whether earlier events caused later ones or simply preceded them.
SSP.3.c. Analyze cause-and-effect relationships and multiple causation, including action by individuals, natural and societal processes, and the influence of ideas.
SSP3.d. Compare differing sets of ideas related to political, historical, economic, geographic, or societal contexts; evaluate the assumptions and implications inherent in differing positions.
SSP.4 Interpret Meaning of Symbols, Words and Phrases
SSP.4.a. Determine the meaning of words and phrases as they are used in context, including vocabulary that describes historical, political, social, geographic, and economic aspects of social studies.
SSP.5 Analyze Purpose and Point of View
SSP.5.a. Identify aspects of a historical document that reveals an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts)
SSP.5.b. Identify instances of bias or propagandizing.
SSP.5.c. Analyze how a historical context shapes an author's point of view.
SSP.5.d. Evaluate the credibility of an author in historical and contemporary political discourse.
SSP.6 Integrate Content Presented in Different Ways
SSP.6.a. Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.
SSP.6.b. Analyze information presented in a variety of maps, graphic organizers, tables, and charts; and in a variety of visual sources such as artifacts, photographs, political cartoons.
SSP.6.c. Translate quantitative information expressed in words in a text into visual form (e.g., table or chart); translate information expressed visually or mathematically into words.
SSP.7 Evaluate Reasoning and Evidence
SSP.7.a. Distinguish among fact, opinion, and reasoned judgment in a primary or secondary source document
SSP.7.b. Distinguish between unsupported claims and informed hypotheses grounded in social studies evidence.
SSP.8 Analyze Relationships between Texts
SSP.8.a. Compare treatments of the same social studies topic in various primary and secondary sources, noting discrepancies between and among the sources.
SSP.9 Write Analytic Response to Source Texts **
SSP.9.a. Produce writing that develops the idea(s), claim(s) and/or argument(s) thoroughly and logically, with well-chosen examples, facts, or details from primary and secondary source documents.
SSP.9.b. Produce writing that introduces the idea(s) or claim(s) clearly; creates an organization that logically sequences information; and maintains a coherent focus.
SSP.9.c. Write clearly and demonstrate sufficient command of standard English conventions.
SSP.10 Read and Interpret Graphs, Charts and Other Data Representation
SSP.10.a. Interpret, use, and create graphs (e.g., scatterplot, line, bar, circle) including proper labeling. Predict reasonable trends based on the data (e.g., do not extend trend beyond a reasonable limit).
SSP.10.b. Represent data on two variables (dependent and independent) on a graph; analyze and communicate how the variables are related.
SSP.10.c. Distinguish between correlation and causation.
SSP.11 Measure the Center of a Statistical Dataset
SSP.11.a. Calculate the mean, median, mode, and range of a dataset.

Analyzing and Summarizing Data in the GED Reasoning through Language Arts Curriculum Frameworks

R.9 & R.7	Analyze how two or more texts address similar themes or topics.
R.9.a/R.7.a	Draw specific comparisons between two texts that address similar themes or topics, or between information presented in different formats (e.g., between information presented in text and information or data summarized in a table or timeline).
R.9.b	Compare two passages in a similar or closely related genre that share ideas or themes, focusing on similarities and/or differences in perspective, tone, style, structure, purpose, or overall impact.
R.9.c	Compare two argumentative passages on the same topic that present opposing claims (either main or supporting claims) and analyze how each text emphasizes different evidence or advances a different interpretation of facts.
R.7.b	Analyze how data or quantitative and/or visual information extends, clarifies, or contradicts information in text or determines how data supports an author's argument.
R.7.c	Compare two passages that present related ideas or themes in different genre or formats (e.g., a feature article and an online FAQ or fact sheet) in order to evaluate differences in scope, purpose, emphasis, intended audience, or overall impact when comparing.
R.7.d	Compare two passages that present related ideas or themes in different genre or formats in order to synthesize details, draw conclusions, or apply information to new situations.



Review of Summarizing Data

Organizing Data

Think of the simplest way you can organize the data below, showing the length of nails found in a packet of assorted nails.

Length of Nails (mm)								
11	22	29	15	17	27	21	23	27
26	19	16	11	10	16	15	21	21
17	15	23	20	16	17	25	16	21

One way is to arrange it in increasing order.

Nails arranged in order of increasing length (mm)								
10	11	11	15	15	15	16	16	16
16	17	17	17	19	20	21	21	21
21	22	23	23	25	26	27	27	29

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Tally Table

Using this arrangement of data, we can create another data representation called a Tally Table.

Nails arranged in order of increasing length (mm)

10	11	11	15	15	15	16	16	16
16	17	17	17	19	20	21	21	21
21	22	23	23	25	26	27	27	29

Length	Tally	Length	Tally
10	I	20	I
11	II	21	IIII
12		22	I
13		23	II
14		24	
15	III	25	I
16	IIII	26	I
17	III	27	II
18		28	
19	I	29	I

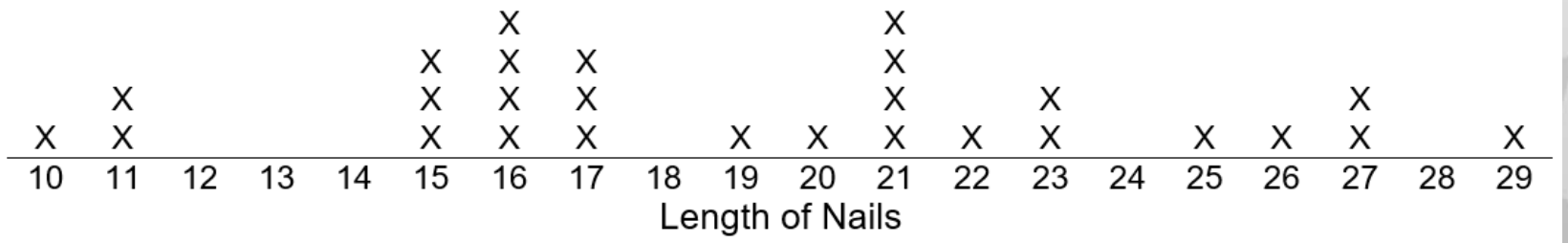
Line Plot and Pictograph

Using this arrangement of data, we can create another data representation called a Line Plot or Pictograph.

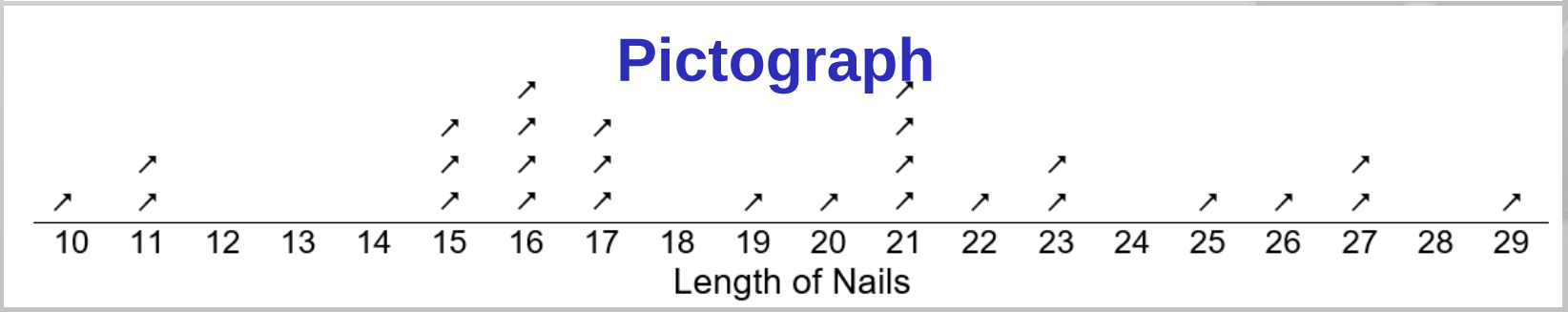
Nails arranged in order of increasing length (mm)

10	11	11	15	15	15	16	16	16
16	17	17	17	19	20	21	21	21
21	22	23	23	25	26	27	27	29

Line Plot

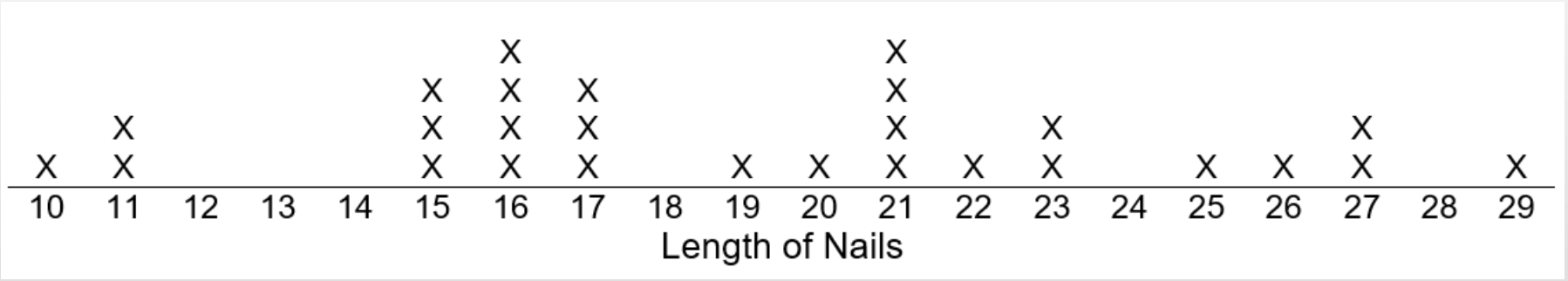


Pictograph



Frequency Table

Using this arrangement of data, can further summarized or grouped into a Frequency Table.



Frequency Table

Length of Nails

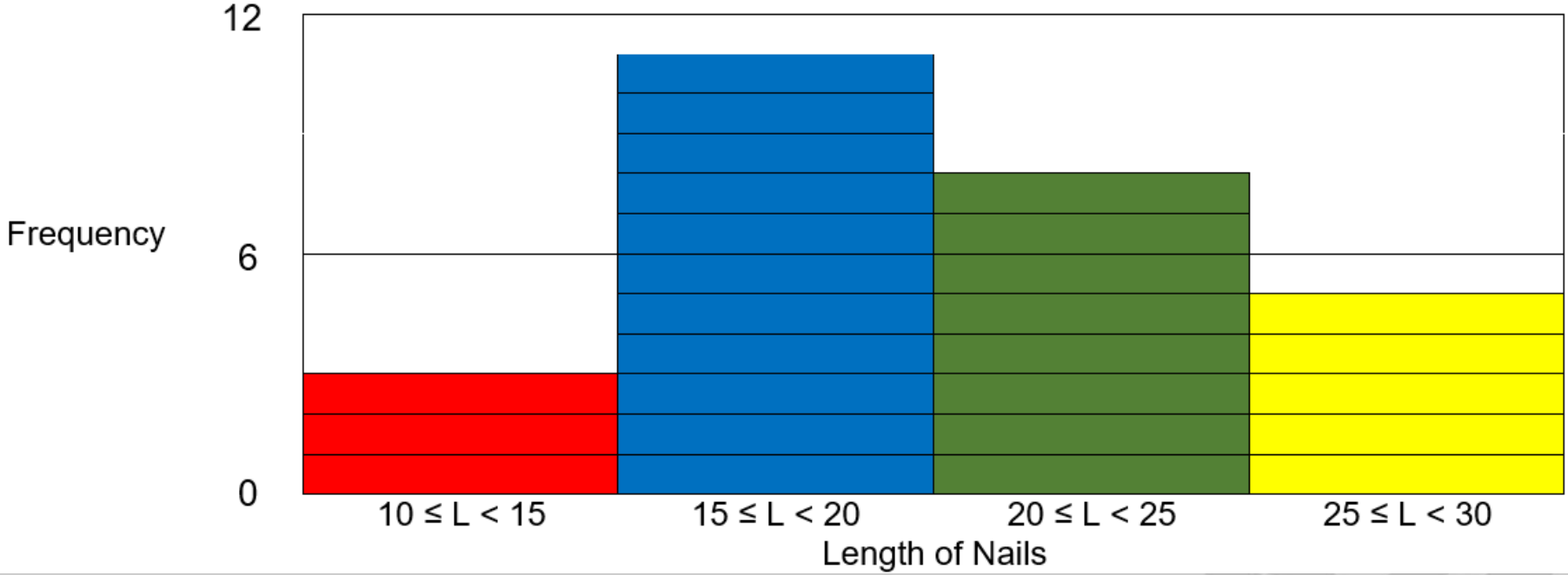
Length	Frequency
$10 \le L < 15$	3
$15 \le L < 20$	11
$20 \le L < 25$	8
$25 \le L < 30$	5

Length of Nails

Frequency	3	11	8	5
Length	$10 \le L < 15$	$15 \le L < 20$	$20 \le L < 25$	$25 \le L < 30$

Histograms

From a frequency table, one can easily create a histogram, a more visual representation of data .

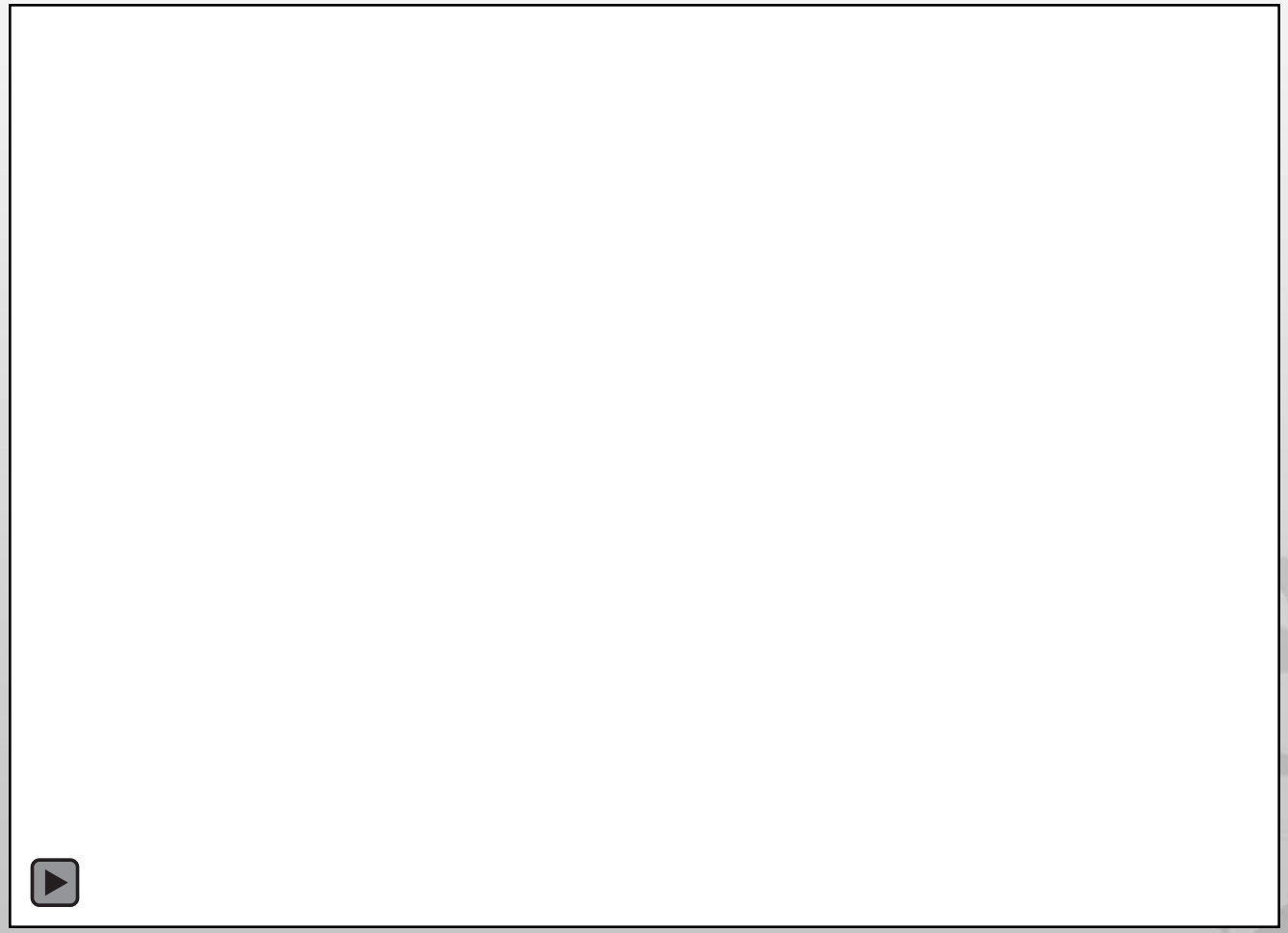


Length of Nails

Frequency	3	11	8	5
Length	10 ≤ L < 15	15 ≤ L < 20	20 ≤ L < 25	25 ≤ L < 30

Box Plot

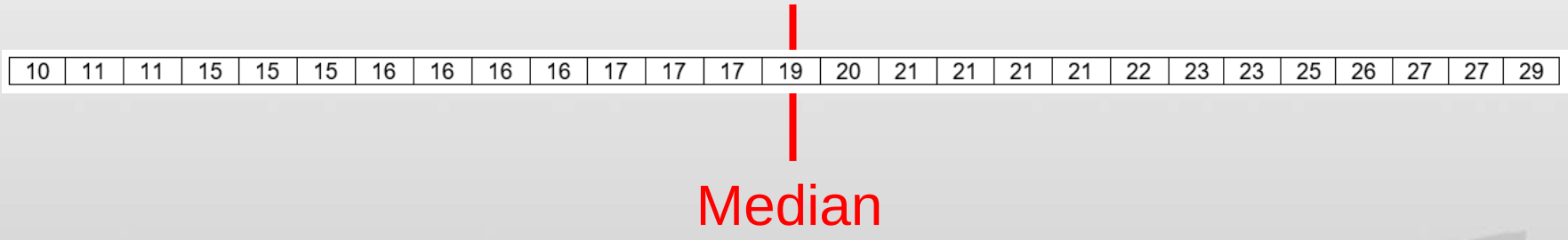
Let’s watch a quick video on how to create box plots.



Box Plot

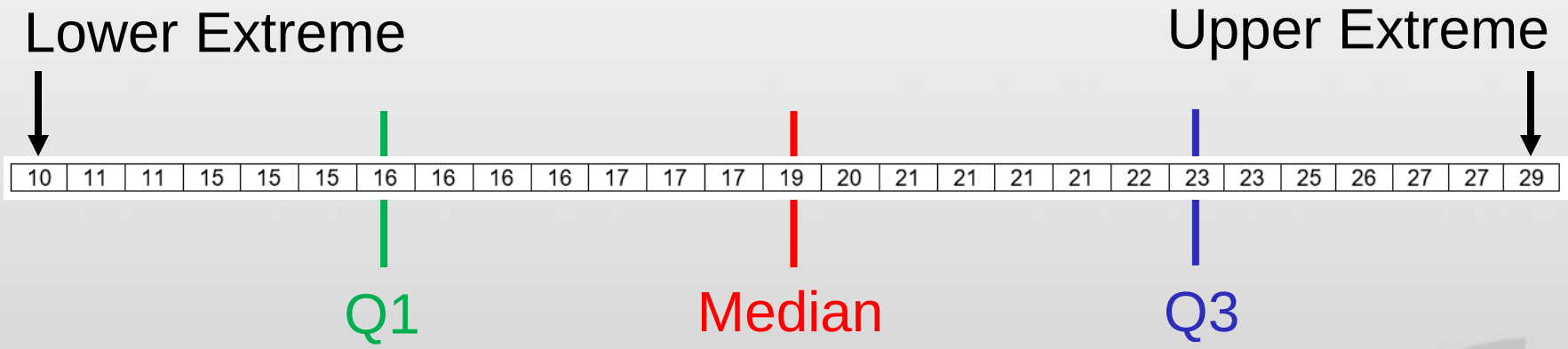
If we would like to create a box plot, we need to arrange the data in order and divide it into quartiles.

First, we need to find the median of our data set.



Box Plot

Second, we need to find the middle value (Q1) of the bottom half of our data set.

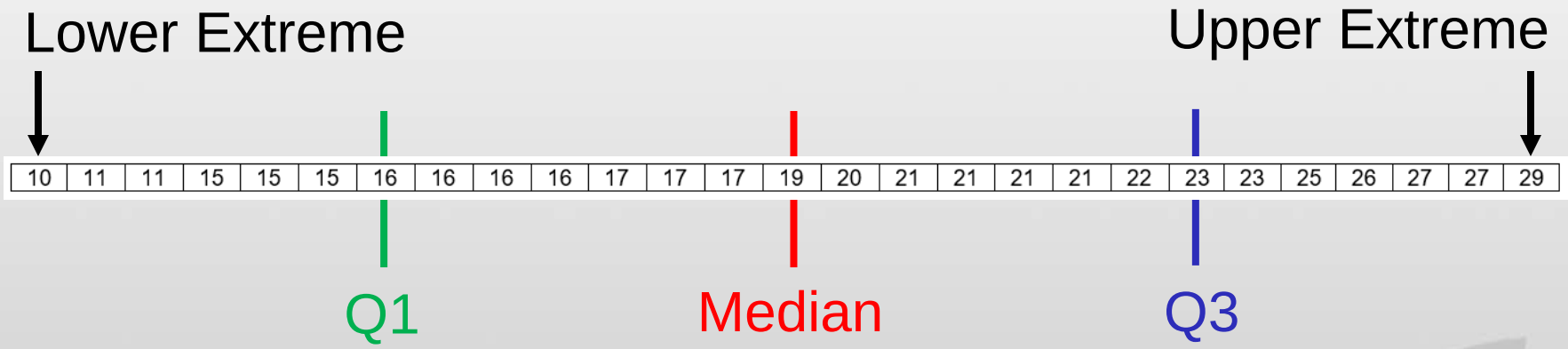


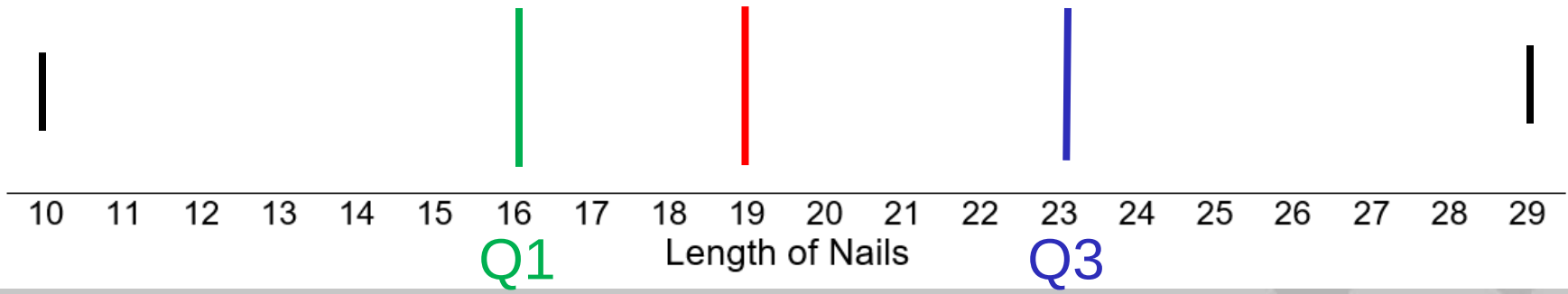
Third, we need to find the middle value (Q3) of the upper half of our data set.

Fourth, we need to mark the extreme values of our data set.

Box Plot

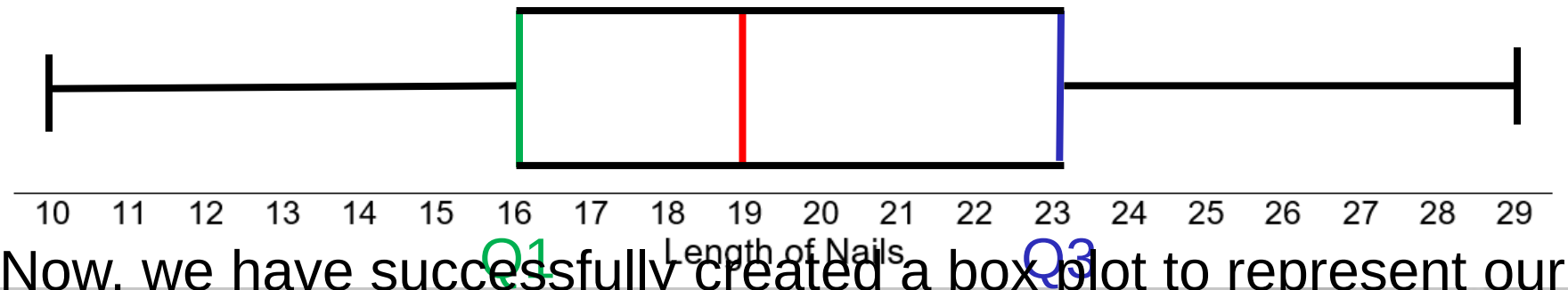
We now draw a number line to plot all the numbers we identified.





Box Plot

The last step is to draw a box from Q1 to Q3 and lines connecting the extreme values to our box.



Now, we have successfully created a box plot to represent our data.

Another way to describe your data is to describe its center and/or spread.

Measures Central Tendency

1. **Mean (Average)**
2. **Median**
3. **Mode**

Measures of Variability

1. **Range**
2. **Mean Absolute Deviation**
3. **Standard Deviation**

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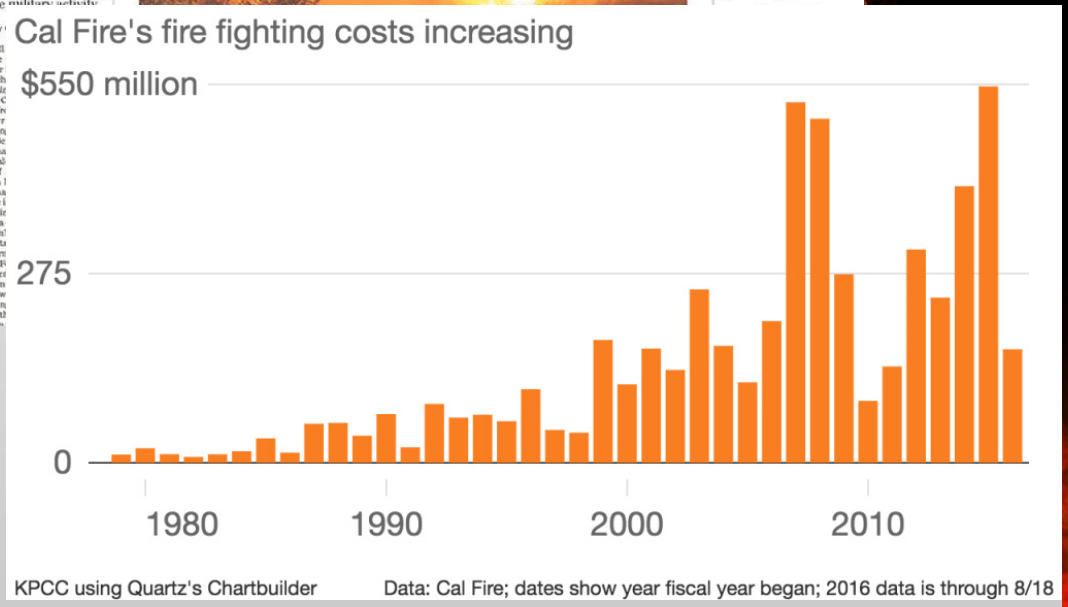
The Washington Post

Partly sunny 94/77 • Tomorrow: Thunderstorm 92/72 • DETAILS, B6 MONDAY, AUGUST 3, 2015 washingtonpost.com • $1.50

Graham moved up in ranks as reservist

While on Hill, he was promoted twice despite little

Stormy tests for climate proposal



Analyzing and Summarizing Data Across the Subject Areas

Data Analysis Across Subject Areas

THE WALL STREET JOURNAL.

Drones Get Put On a Leash

BUSINESS & TECH. | B1

Tech Stocks Tank as Profits Miss the Mark

MONEY & INVESTING | C1

DOW JONES | News Corp ★★★★ MONDAY, AUGUST 3, 2015 - VOL. CCLXVI NO. 28 WSJ.com ★★★★ $3.00

Last week: DJIA 17689.86 ▲ 121.33 0.7% NASDAQ 5128.23 ▲ 0.8% NIKKEI 20535.24 ▲ 0.2% STOXX 600 396.37 ▲ 0.4% 10-YR. TREASURY ▲ 18/32, yield 2.207% OIL $47.12 ▼ $1.02 EURO $1.0984 YEN 123.89

What's News

Business & Finance

Obama is set to unveil a rule mandating federal limits on power-plant carbon emissions. Electric-industry officials voiced concern over the plan's cost and timetable. **A1, A4**

◆ **Coal producer Alpha** is expected to file for chapter 11 as a severe slump in coal prices continues to wreak havoc on the industry. **B1**

◆ **Proxy firm Georgeson** is being probed as the government focuses on the trading of confidential company data. **C1**

◆ **Japan's Uniqlo is set** to announce a deal with Disney to jointly design a range of Disney-themed clothing. **B3**

◆ **Shire agreed** to pay $300 million for Foresight, an eye-drug company that makes a treatment for pinkeye. **B3**

◆ **Tesla is pushing** to keep mileage and emissions rules intact, which could benefit the electric-car maker. **B5**

◆ **Verizon missed** a deadline to reach a deal with its unions, but employees will keep working while talks continue. **B5**

◆ **FAA officials failed** to act on safety warnings about Branson's experimental rocket ship, an ex-consultant said. **B2**

◆ **Sharp said** it is weighing

Northern California Feels the Heat as Wildfires Spread

FAST-MOVING: A firefighter near Clear Lake, Calif., lights a backfire in hopes of controlling a wildfire that threatened about 5,000 homes as of Sunday. Dozens of blazes are burning in drought-stricken Northern California, many of them sparked by lightning. **A2**

Power-Plant Emissions Rules To Alter, Challenge Industry

U.S. Set To Defend New Force In Syria

Risk grows of conflict with the Assad regime

By Adam Entous

President Barack Obama has authorized using air power to defend a new U.S.-backed fighting force in Syria if it is attacked by Syrian government forces or other groups, raising the risk of the American military coming into direct conflict with the regime of President Bashar al-Assad.

U.S. officials said the decision ended a monthslong debate over the role the American military should play in supporting its few allies on the battlefield in Syria. Administration officials had been deeply concerned that defending the Pentagon-backed force could inadvertently open the first open conflict with the Assad government, which has denounced the U.S. program.

Though the new rules allow Pentagon strikes to defend the U.S.-allied force against any regime attacks, U.S. military officials played down the chances of a direct confrontation, at least in the near term. The newly trained force has committed to fighting Islamic State, not the regime, and won't be fielded in areas the

https://www.mediamatters.org/research/2015/

Draw comparisons between two texts that address similar topics such as climate change.

Los Angeles Times

$2.00 DESIGNATED AREAS HIGHER © 2015 MONDAY, AUGUST 3, 2015 latimes.com

JUSTIN SULLIVAN Getty Images

OCEANSIDE FIRE DEPARTMENT Capt. Greg DeAvila shoots a flare into dry brush during a burn operation. The Rocky fire started Wednesday near Clear Lake, about 100 miles northwest of Sacramento.

Heat, drought-parched brush fuel ferocious fire

Official says Northern California blaze is unprecedented this early in the season. He fears 'new normal.'

the fire exploded, charring 20,000 acres in one five-hour stretch that a fire official called "historic, unprecedented." Throughout the night, when wildfires typically slow down in the relative cool, the Rocky fire continued to rage.

Climate plan tests familiar battle lines

Obama's new rules on emissions would burnish his legacy but also highlight a deep political divide.

BY DAVID LAUTER

WASHINGTON — With Monday's release of landmark rules to combat global warming, President Obama is putting into place what probably will be the last piece of his ambitious second-term agenda — one that highlights deep divisions in the country and helps shape the race to succeed him.

On immigration, healthcare, same-sex marriage and now climate change, Obama has aggressively used the powers of his office to align public policy with the values and aspirations of a largely urban, liberal and minority constituency heavily concentrated on the East and West coasts.

In the process, he has courted a backlash from Republican constituencies and states — an older, whiter population concentrated in the South and the nation's interior.

That division was plain to see in reactions to the new rules, which are intended to change how the nation generates electricity in order to cut emissions of carbon dioxide and other gases blamed for warming the world's climate.

Over the next 15 years, the plan would aim to sharply reduce the use of coal and ramp up the use of wind and solar power. Currently, coal accounts for almost 40% of the nation's electricity, whereas wind and solar produce about 5%. By 2030, if the administration's plan works, renewables would account for 28% of U.S. power generation, edging past coal at 27%.

The plan would boost efforts already underway, mostly in coastal states and led by California, to greatly increase the use of renewable power.

But for those parts of the country still heavily reliant on coal, nearly all of them Republican-governed states in the Midwest, Great Plains and South, the rules would force a major economic transition that many elected officials have vowed to resist.

[See Obama, A4]

The Washington Post

Partly sunny 94/77 • Tomorrow: Thunderstorm 91/72 • DETAILS, B6 MONDAY, AUGUST 3, 2015 washingtonpost.com • $1.50

Graham moved up in ranks as reservist

While on Hill, he was promoted twice despite little military activity

BY CRAIG WHITLOCK

Of all the candidates vying to become the nation's next commander in chief, none has spent as much time in the military as Sen. Lindsey O. Graham. The South Carolina Republican retired from the Air Force this summer after a 33-year career, including two decades as a reservist while serving in Congress.

Graham is running as a national-security hawk, calling himself a "battle-tested leader" with "a lifetime of military service." Images of him wearing camouflage in the field are a common thread in his campaign.

But a detailed examination of Graham's military record — much of it obtained under the Freedom of Information Act — shows that the Air Force afforded him special treatment as a lawmaker, granting him the privileges of rank with few expectations in return.

During his first decade in Congress, the Air Force promoted

JOSH EDELSON/AGENCE FRANCE-PRESSE VIA GETTY IMAGES

Deadly wildfires in Northern California

Firefighters walk along State Route 20, one of two roads closed by a fast-moving wildfire near Clear Lake in California on Sunday. The fire has burned about 47,000 acres and destroyed more than 20 homes. About 12,000 people have fled the fire or been advised to evacuate. Farther north, another blaze killed a firefighter. Story, A6.

Stormy tests for climate proposal

CHANGES REFLECT INTERNAL DEBATE

Energy rule faces legal, political challenges

BY JOBY WARRICK

Four weeks before the official rollout, the news for President Obama's signature regulation on climate change suddenly went from bad to abysmal.

Already, the Senate's top Republican was urging a nationwide boycott of the carbon-cutting proposal known as the Clean Power Plan. Fourteen states had joined in a lawsuit seeking to block the rule even before it became final. Then came a blow from the Supreme Court: a surprise June 29 decision blocking the White House's previous attempt at curbing pollution from coal-burning power plants.

By July 7, the head of the

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Science Content Topics Addressed

		Science Content Topics		
		Life Science (40%)	Physical Science (40%)	Earth & Space Science (20%)
Focusing Themes	Human Health and Living Systems	• Human body and health • Organization of life • Molecular basis for heredity • Evolution	• Chemical properties and reactions related to human systems	• Interactions between Earth's systems and living things
	Energy and Related Systems	• Relationships between life functions and energy intake • Energy flows in ecologic networks (ecosystems)	• Conservation, transformation, and flow of energy • Work, motion, and forces	• Earth and its system components • Structure and organization of the cosmos

How Wildfires Work

BY KEVIN BONSOR

Weather's Role in Wildfires

« PREV NEXT »

Wildfires can produce winds that are 10 times stronger than the winds surrounding them.
PHOTO COURTESY BUREAU OF LAND MANAGEMENT

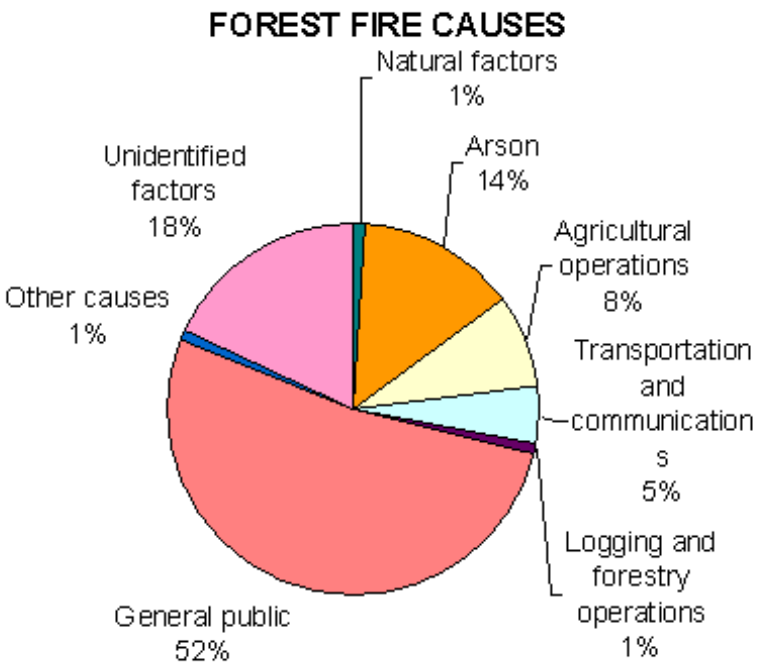
Weather plays a major role in the birth, growth and death of a wildfire. Drought leads to extremely favorable conditions for wildfires, and winds aid a wildfire's progress -- weather can spur the fire to move faster and engulf more land. It can also make the job of fighting the fire even more difficult. There are three weather ingredients that can affect wildfires:

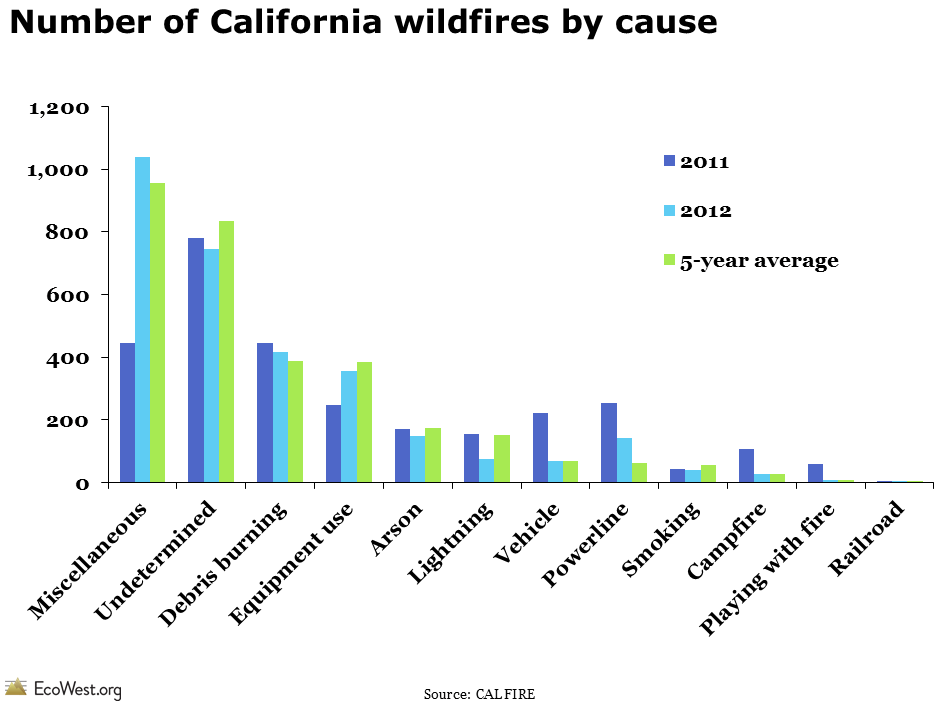
- **Temperature**
- **Wind**
- **Moisture**

As mentioned before, temperature affects the sparking of wildfires, because heat is one of the three pillars of the fire triangle. The sticks, trees and underbrush on the ground receive radiant heat from the sun, which heats and dries potential fuels. Warmer temperatures allow for fuels to ignite and burn faster, adding to the rate at which a wildfire spreads. For this reason, wildfires tend to rage in the afternoon, when temperatures are at their hottest.

https://science.howstuffworks.com/nature/natural-disasters/wildfire2.htm

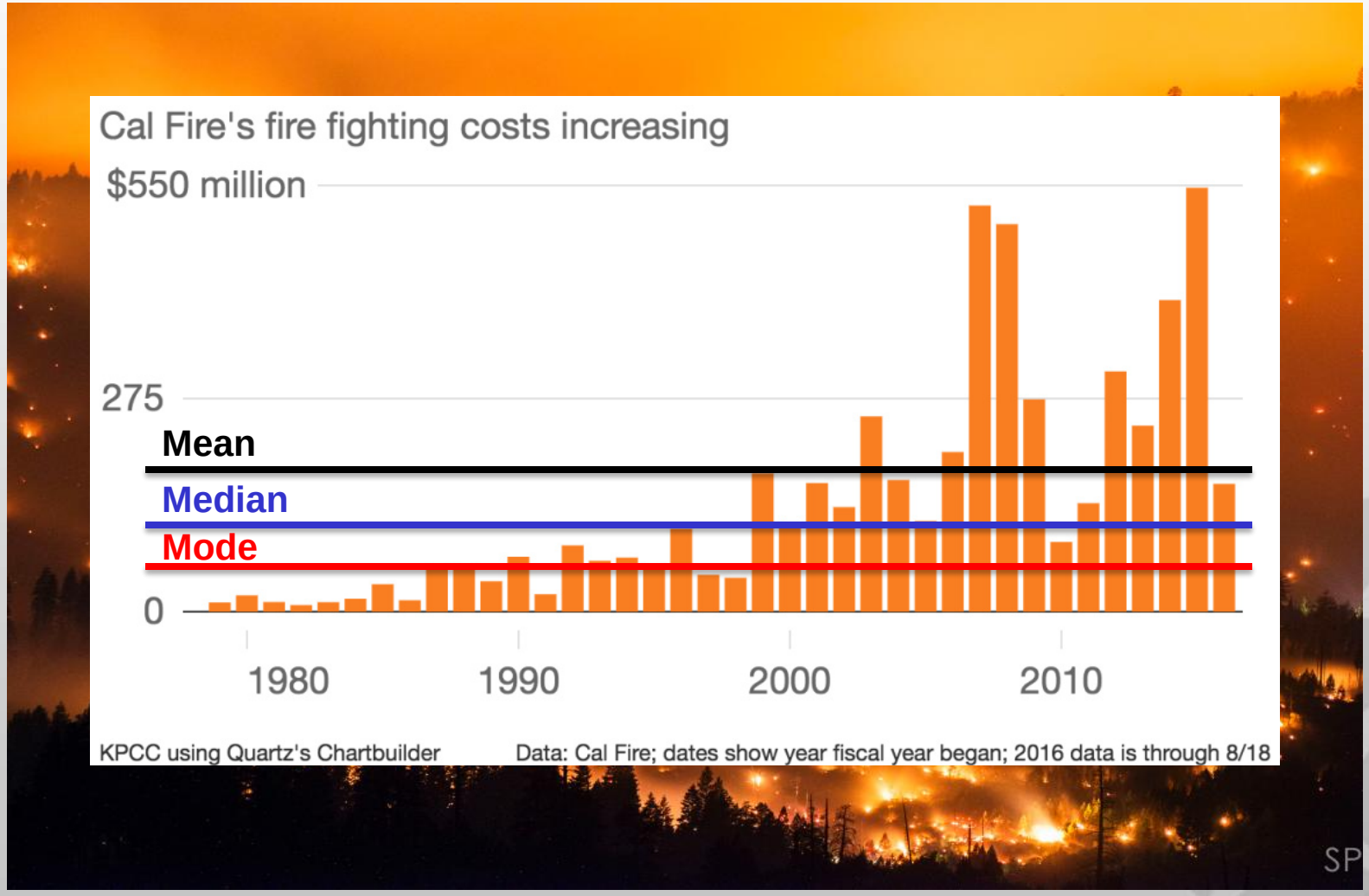
Use various representations of data to analyze the causes of forest fires.





http://esseacourses.strategies.org/module.php?module_id=69

http://ecowest.org/category/wildfires/



http://www.scpr.org/news/2016/08/19/63757/why-fighting-california-s-wildfires-cost-more-than/

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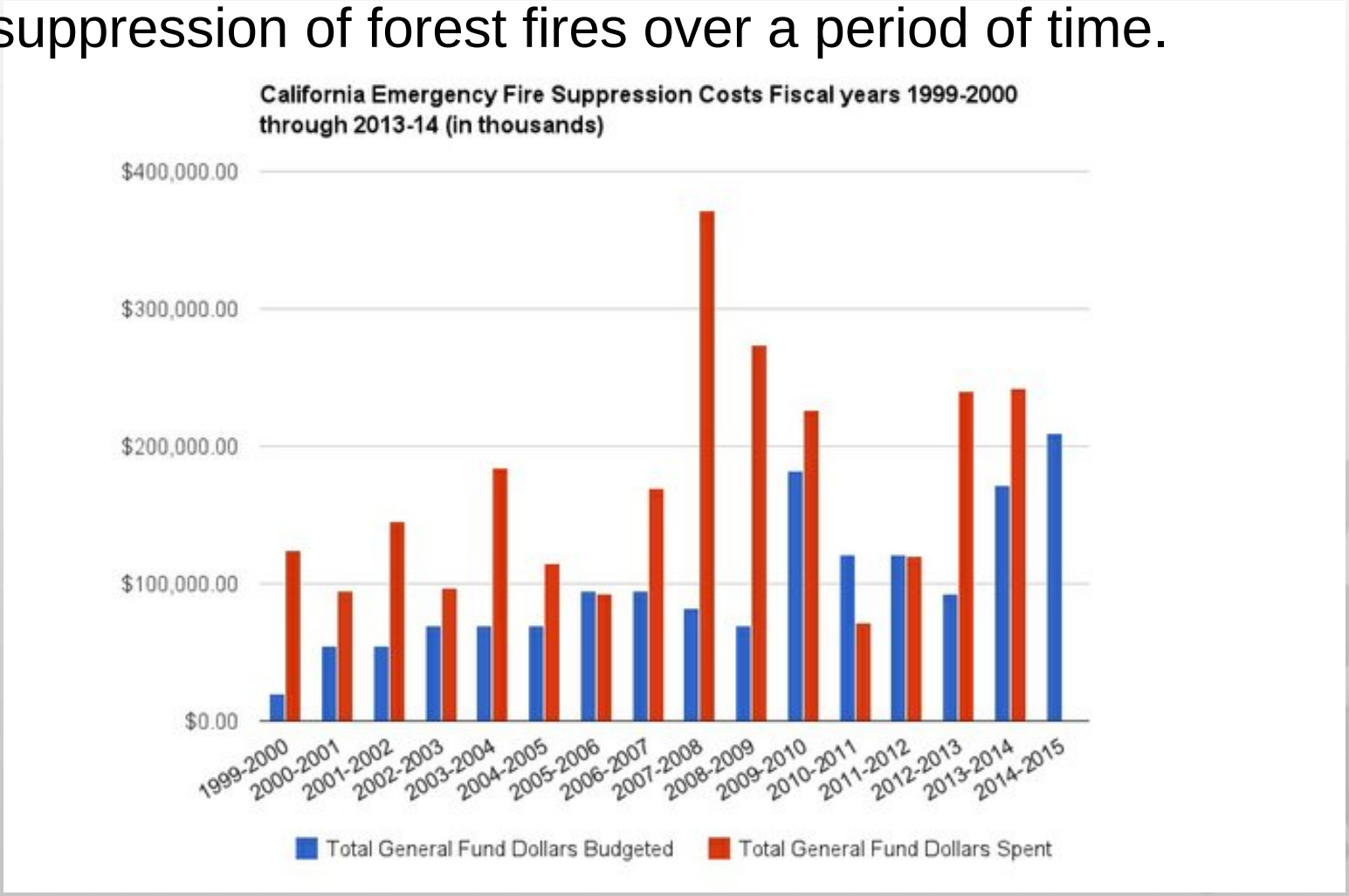
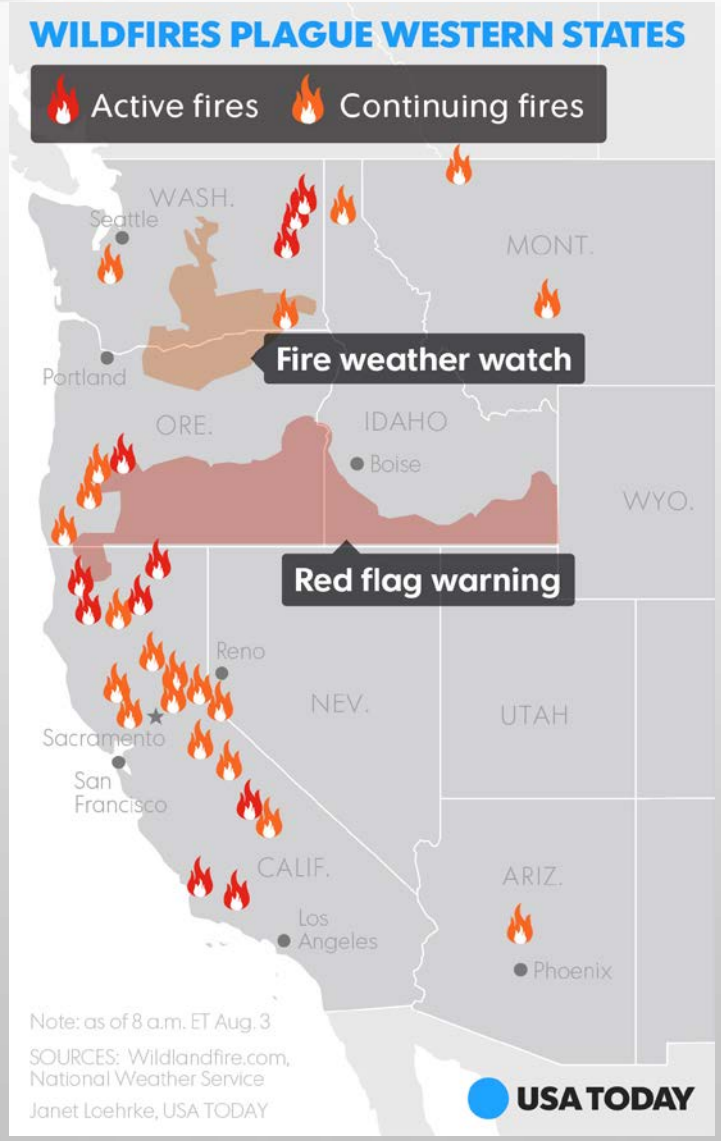
Science Content Topics Addressed

	Social Studies Example Topics			
	Civics & Gov't (50%)	**US History (20%)**	**Economics (15%)**	**Geography & World (15%)**
Focusing Themes				
Development of Modern Liberties and Democracy	• Types of modern and historical governments • Structure and design of U.S. government	• Key historical documents • Civil War and Reconstruction	• Key economic events that shape American government and policies	• Development of classical civilizations
Dynamic Responses in Societal Systems	• Political parties, campaigns, and elections • Contemporary public policy	• World War I & II • Cold War	• Fundamental economic concepts • Economic causes and impacts of war	• Borders between peoples and nations • Human migration

Economics: Discuss local government spending devoted to the suppression of forest fires over a period of time.



http://www.kpbs.org/news/2014/aug/01/more-25-percent-californias-firefighting-budget-al/



https://www.mediamatters.org/research/2015/

Using this diagram, what questions would you ask student to promote various science and social studies practices?

http://abcnews.go.com/US/weather-fueled-california-wildfires/story?id=50380169

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ABE
Adult Basic Education

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Using the Right Graph for the Job

This video lesson the can assist students that have difficulty interpreting graphs, tables, and charts.

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IPDAE Resources

Data Driven Instruction and Curriculum for ABE/GED®

Lisa C. Helfrich and Dr. Jane Bravo
Presentation D

Description:
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curriculum to fo
Participants wil

- Interpret
- Conduct
- Prepare
- Incorpor
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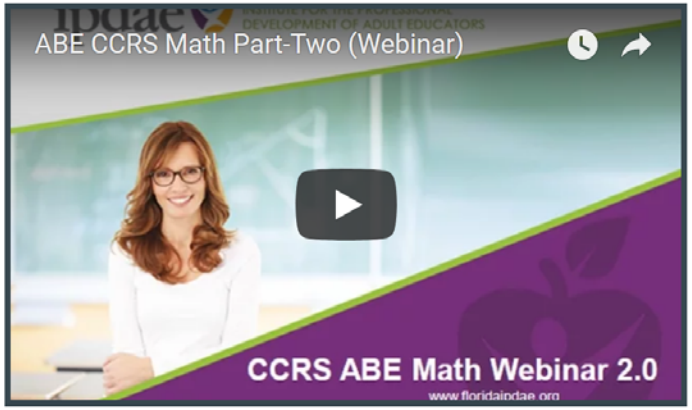
CCRABES Math Part-Two

Ronald Cruz
Presentation Date: **2/10/2016** at 3:00pm

Description:
The CCRABES Math Webinar Series is a series of webinars designed to provide additional support to ABE teachers in their implementation of the newly-developed College and Career Readiness Standards for Adult Education. This series of webinars align with the face-to-face workshops and online courses focusing on CCRS. The CCRABES Math Webinar Part 2 will provide teachers with an overview of CCRS, instructional strategies helpful in curriculum implementation, follow up on student-centered activities introduced in part 2 of the face-to-face workshops, tutorial on how to access online support materials for CCRABES, technology tips, and Q&A session focusing on the new standards. The content of this webinar will focus on domains that have not been covered by the face-to-face workshops:

- Measurement and Data
- Statistics and Probability
- The Number System
- Ratios and Proportional Relationships
- Functions



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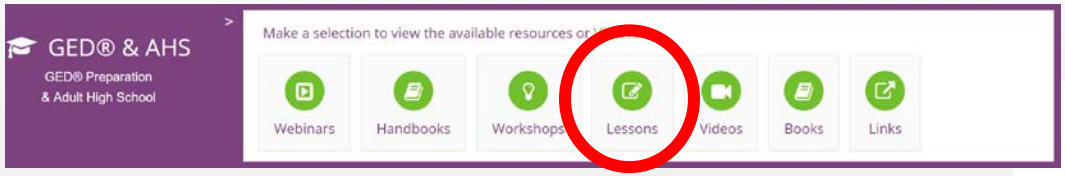
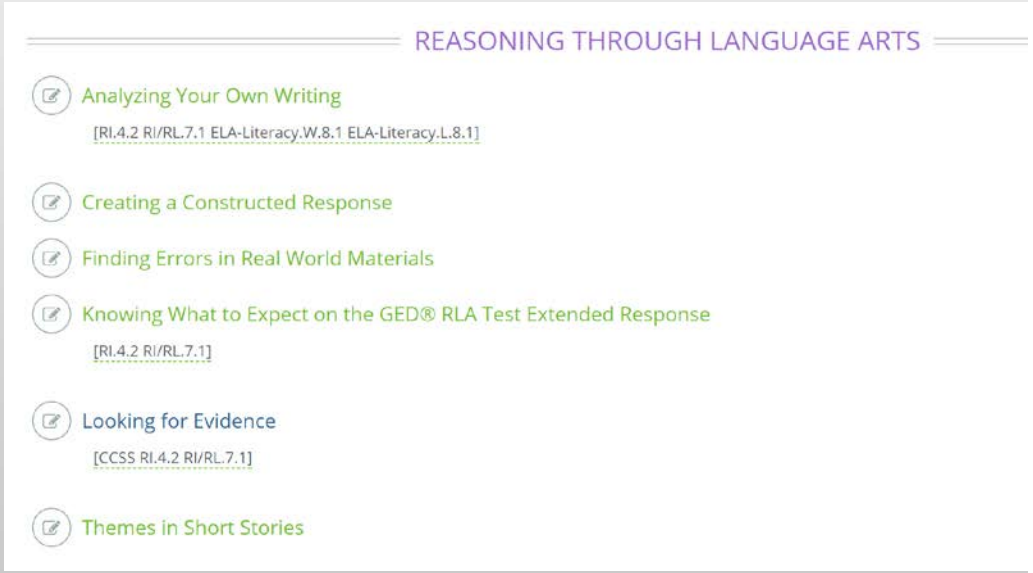
IPDAE Resources





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Module: Reasoning through Language Arts

Lesson Title: Looking for Evidence

Objectives and Standards

Students will:

- Define different types of evidence.
- Identify and find different types of evidence in reading passages.

Prerequisite Skills Common Core State Standards	Reasoning through Language Arts 2014 GED® Assessment Targets
Determine the main idea of a text and explain how it is supported by key details; summarize the text. (RI.4.2) Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. (RI/RL.7.1)	Identify specific pieces of evidence an author uses in support of claims or conclusions. (R.8.2) Evaluate the relevance and sufficiency of evidence offered in support of a claim. (R.8.3)

Materials

- Chart paper and markers
- **Handout A: Passage #1 - Are Tweens Ready for Cell Phones?**
- **Handout B: Types of Evidence to Support an Argument**
- **Handout C: Types of Evidence to Support an Argument – Answer Key**
- Sample nonfiction texts

Instructional Plan

Overview

In this lesson, students will identify different types of evidence in materials that they read – from facts and statistics to emotional appeal and expert opinion. This lesson is developed to be used with different types of non-fiction text. The purpose of the lesson is to build skills in determining evidence to better craft a constructed response where evidence supports a claim.

Process

Write the following quote from Denis Hayes (2009) on the board – "Evidence isn't the same as proof. Whereas evidence allows for professional judgment, proof is absolute and incontestable."

Introduce the lesson by writing the word "evidence" on the board. Have students brainstorm what constitutes evidence.

Discuss with students that there are many types of evidence. Evidence includes more than "just the facts." Share each type of evidence with students and a short definition. You may wish to provide students with the graphic organizer from **Handout B** or write the following on the board:

IPDAE would like to know what you think!
Please complete this quick survey.

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Thank you for your participation!