



KENTUCKY CENTER
FOR MATHEMATICS

Let's Do Math with KCM High School Statistics & Probability with Virtual Manipulatives

Welcome!

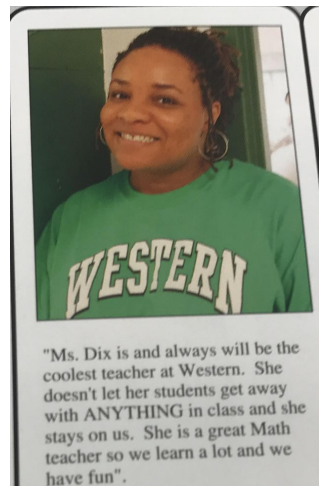
Your host

Leah Dix White

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About Me



"Ms. Dix is and always will be the coolest teacher at Western. She doesn't let her students get away with ANYTHING in class and she stays on us. She is a great Math teacher so we learn a lot and we have fun".



Visit Our Website

www.kentuckymathematics.org



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Find resources to help you engage learners, allowing them to make sense of mathematics and develop problem solving skills.



Today's Session

- Research
- Standard
- Common Online Data Analysis Platform (CODAP)
- Let's Do the Math Task: What story does data tell us?
- Stories and Statistics: What is going on with this graph?
- Resources

Research

Effective Mathematics Teaching Practices

1. Establish mathematics goals to focus learning.
2. Implement tasks that promote reasoning and problem solving.
3. Use and connect mathematical representations.
4. Facilitate meaningful mathematical discourse.
5. Pose purposeful questions.
6. Build procedural fluency from conceptual understanding.
7. Support productive struggle in learning mathematics.
8. Elicit and use evidence of student thinking.



National Council of Teachers of Mathematics. (2014). *Principles to actions: Ensuring mathematical success for all*. Reston, VA: Author.

“Develop students’ conceptual understanding through visual models, representations, and drawing on students’ prior knowledge before moving to more formal methods and procedures”.

Boston, M., Dillon, F. L., Smith, M. S., & Miller, S. (2017). Taking action: Implementing effective mathematics teaching practices in grades 9-12. Reston, VA: National Council of Teachers of Mathematics.

Standards

KY.HS.SP.3 Interpret differences in shape, center and spread in the context of the distributions of the numerical data, accounting for the presence and possible effects of extreme data points (outliers).

MP.1, MP.7

Describe data distribution and provide measures of center to tell a story.

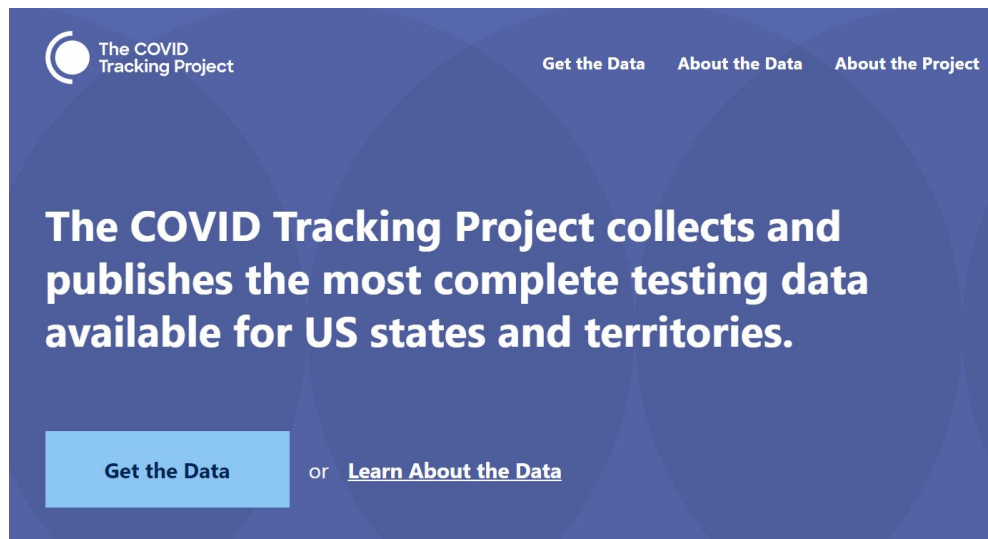


CODAP

CODAP (Common Online Data Analysis Platform) a data analysis environment designed for grades 5 through 14 to help students **summarize, visualize, and interpret data.**

- Free
- Saves Files in Google
- Imports CSV TXT

Let's Do the Math Task: What Story Does Data Tell Us?



The COVID Tracking Project

Get the Data About the Data About the Project

The COVID Tracking Project collects and publishes the most complete testing data available for US states and territories.

Get the Data or [Learn About the Data](#)

Totals by state

Type a state's name to jump to it

Kentucky

[Kentucky](#)

Current [data grade](#): A

Tests			Hospitalized		In ICU		On Ventilator				
Positive	Negative	Pending	Currently	Cumulative	Currently	Cumulative	Currently	Cumulative	Recovered	Deaths	Total test results (Positive + Negative)
2,048	24,635	N/A	299	673	136	259	N/A	N/A	629	104	26,683

Last updated: 4/13 17:00 ET

Reflection Questions

Identify whether data distribution is normal, skewed left, or skewed right and provide measures of center and spread to tell the story.

How are mean, median, and mode of skewed data set different from those in a symmetric data set?

Why would you use the median and interquartile range as measures of center and spread when data distribution is skewed?

Stories with Statistics

New York Times 4/15/20

What is going on in this graph?



Stories with Statistics

New York Times 4/15/20

cont.

What is going on in this graph?

What do you notice? If you make a claim, tell us what you noticed that supports your claim.

What do you wonder? What are you curious about that comes from what you notice in the graphs?

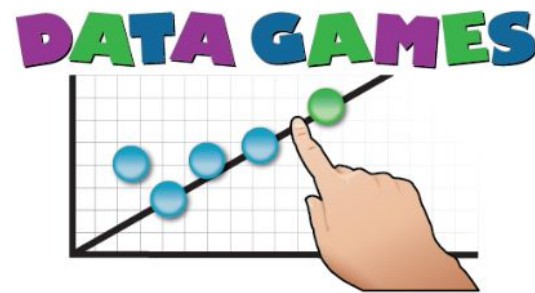
Statistics and Data Resources

[Data from World Health Organization](#)

[The Data Story Library](#)

[The Covid Tracking Project](#)

[American Statistical Association K-12 Resources](#)



Virtual Manipulatives

[Phet Interactive Simulations](#)

[Desmos](#)

[Didax Math Virtual Manipulatives](#)

GeoGebra



KCM Support for Educators

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Upcoming Session

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Apr 24

2:00-2:30 p.m. EDT



Facilitated by: Leah Dix

Downloads: TBD

Check back at 1:30 on the day of the session to get the meeting link.

