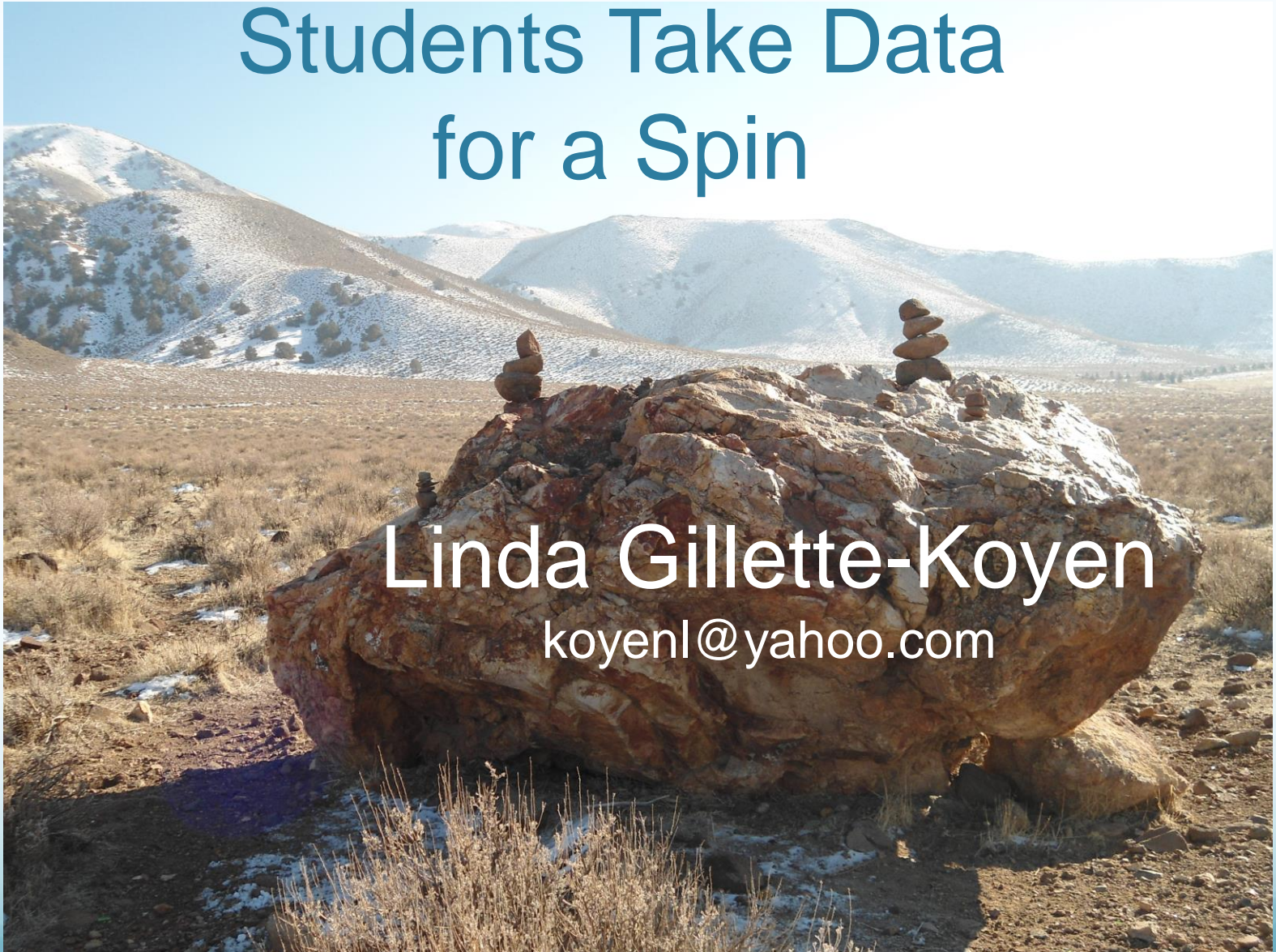


Students Take Data for a Spin

Linda Gillette-Koyen
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Flip the Struggle

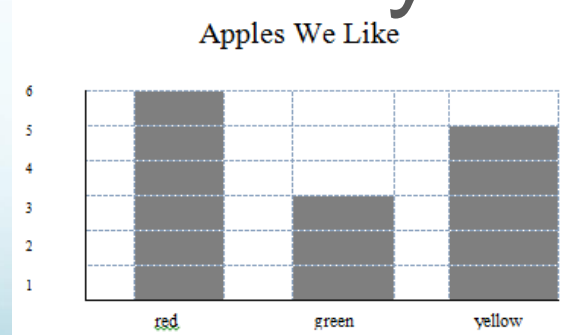
- Students doing math
- Motivated
- Make sense
- Connect

Big Ideas

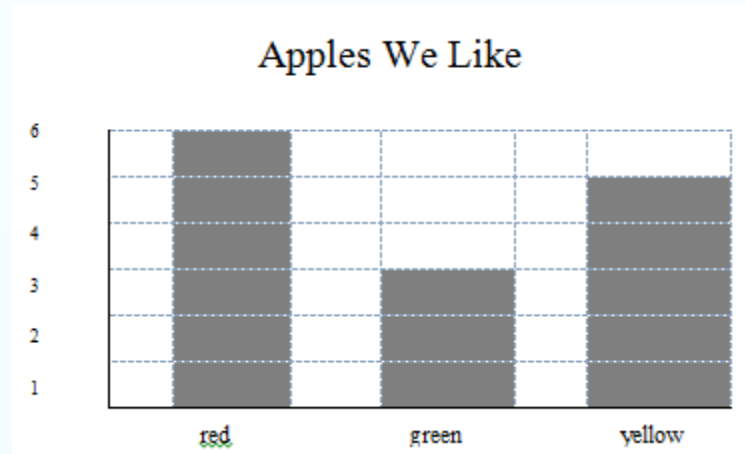
What is a graph?

Apples We Like

red red green yellow green
red yellow yellow red yellow
green red yellow red

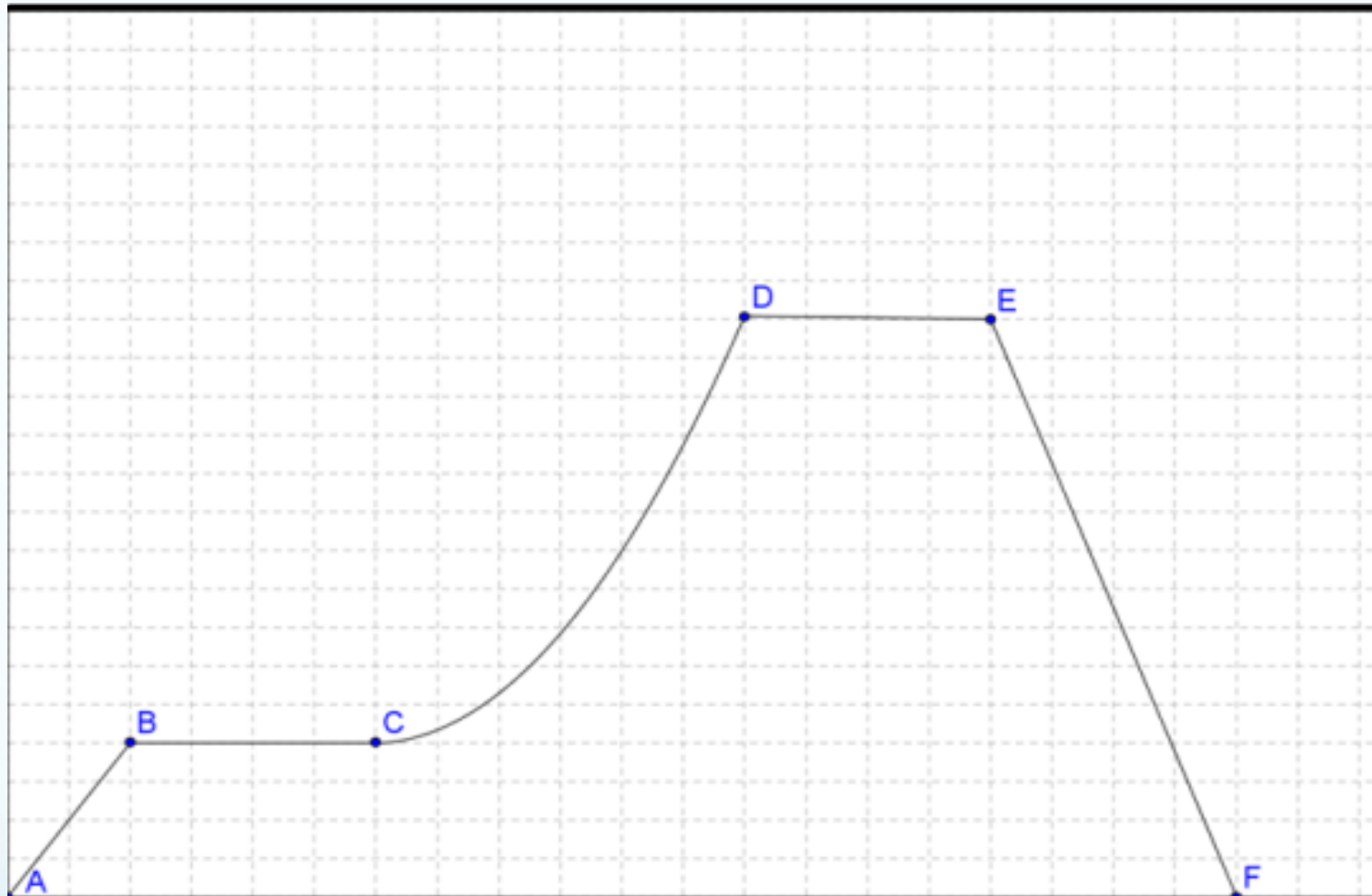


3 Levels of Interpretation



- Read the data
- Read between the data
- Read beyond the data

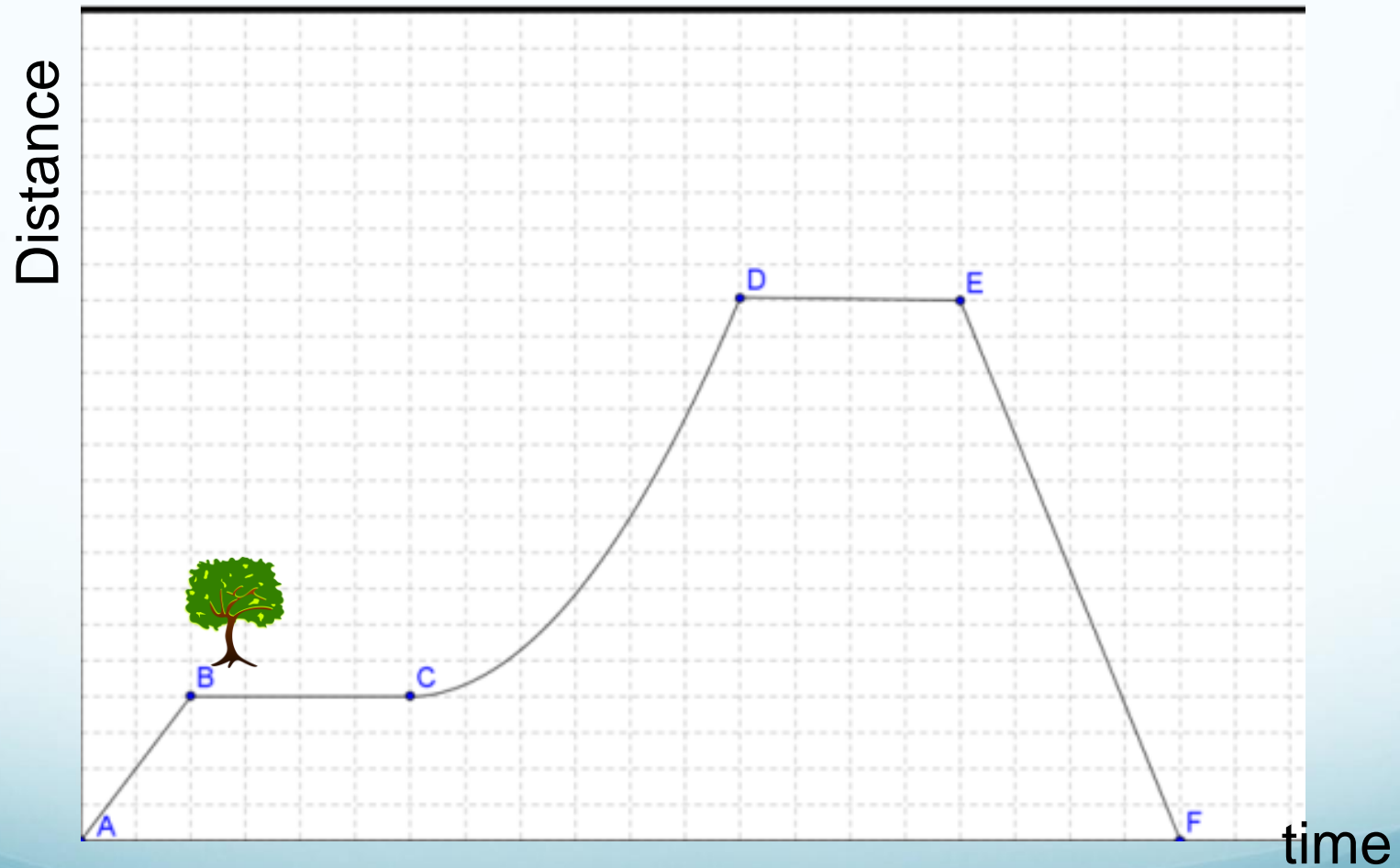
Distance



time

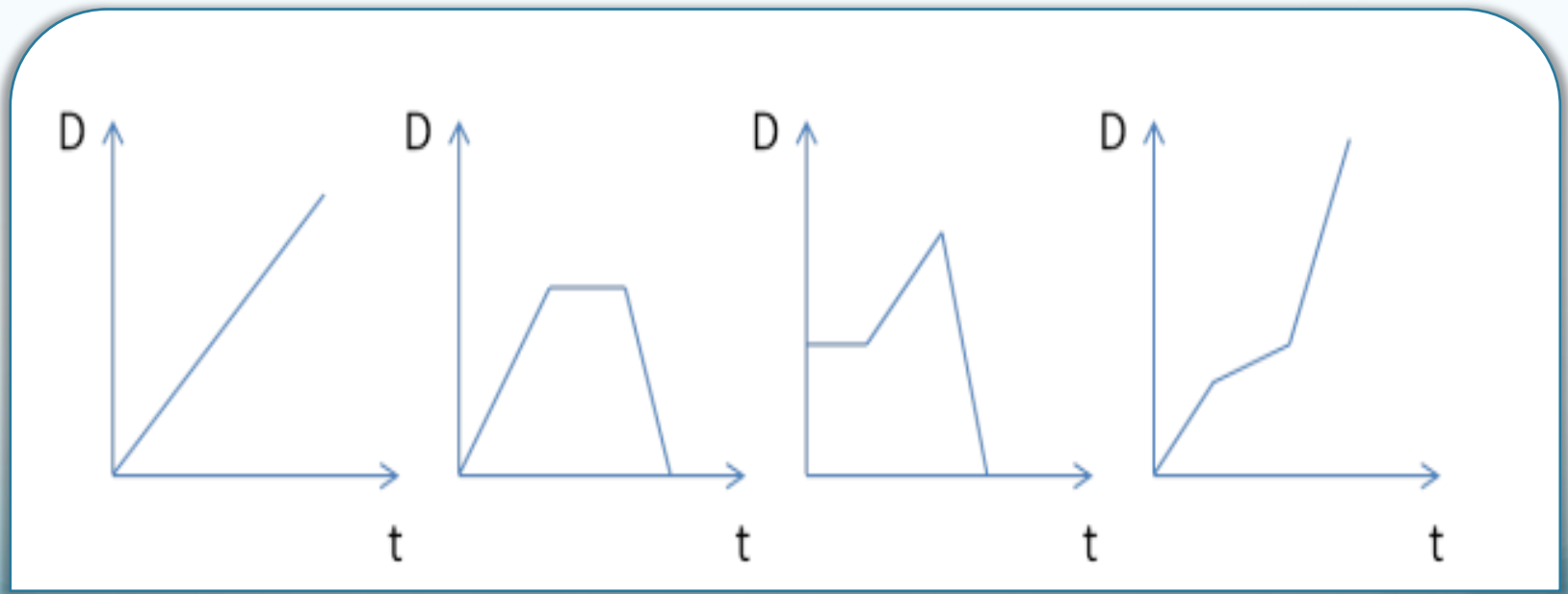
Use the graph to write the story of a child riding a bike in the park.

Interfering Messages



Challenge

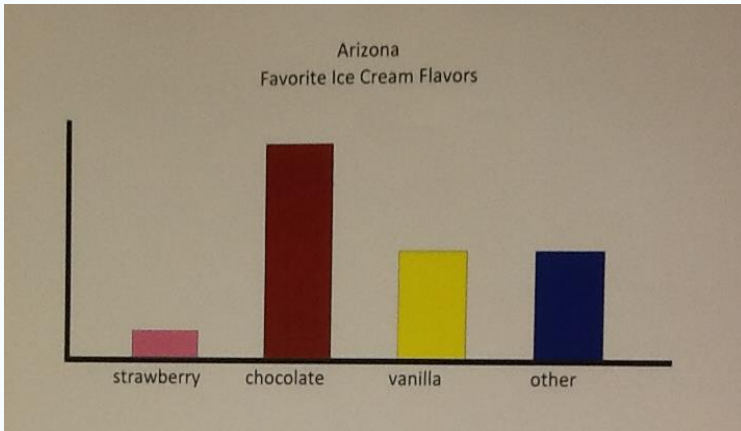
- Jake cycles along a flat road, then up a hill, then down the other side. Which graph best describes Jake's cycle journey?



Organization

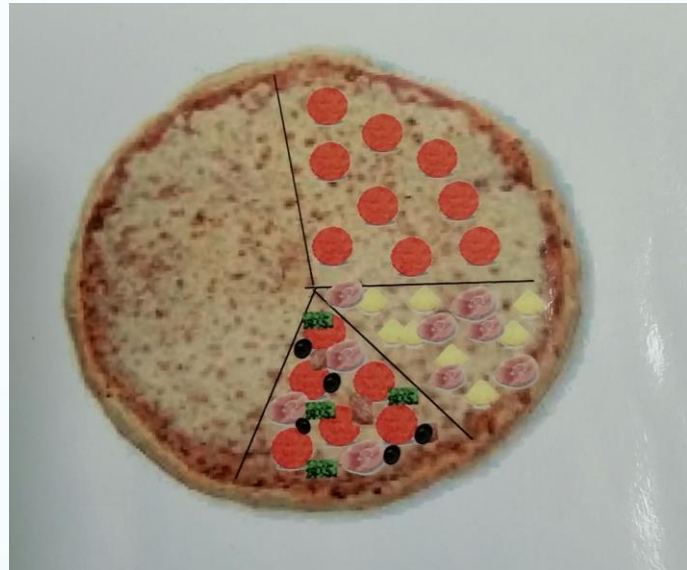
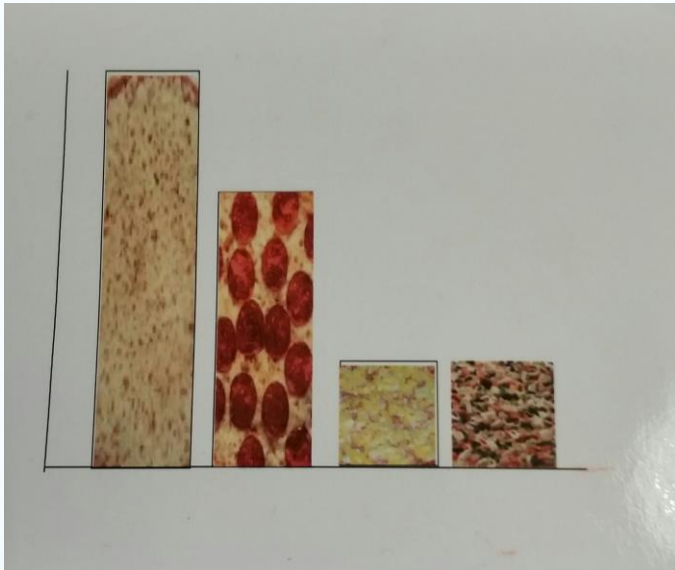


It's All About M.E. (My Ego)



I put a lot of strawberry because I like strawberry.
And 2 vanilla because sometimes I like vanilla
but I don't like chocolate or other flavors.
- 1st grade student

Connections

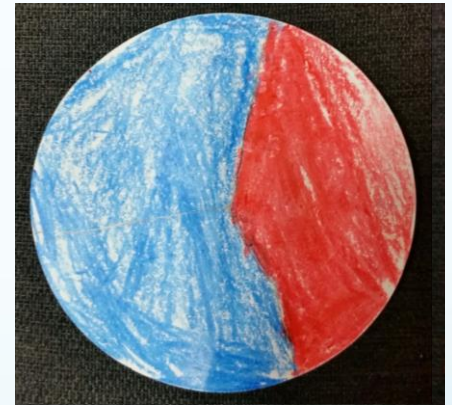


Instruction Phases

- Spinners and probability
- Bar graph components and interpretation
- Connect bar graph and spinner
- Use data analysis to win a game

Record and Organize

- Count, Fingers, check marks, tallies
 - It sounds like we can't agree on how many times the spinner landed on each color. What can we do to know how many times it lands on each color?
- Use a student who knows tallies
- Table
- Labels



| blue | red |
|------|-----|
| | |

Probability Language



Big Ideas

- Probability language
- Perspective change
- Conservation of data
- What is fair?

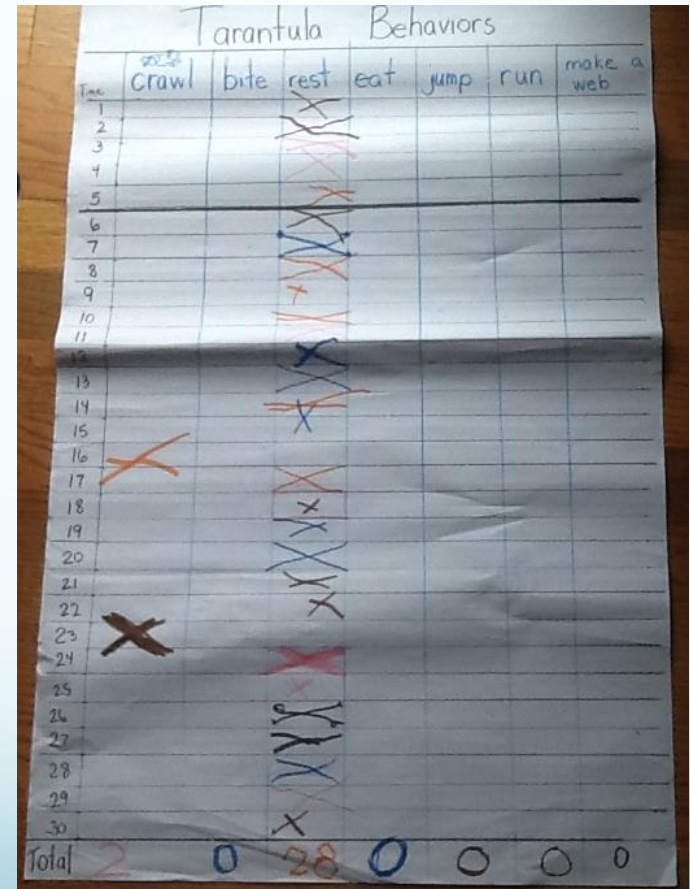
Organizing data



Why bother?



Ethograms



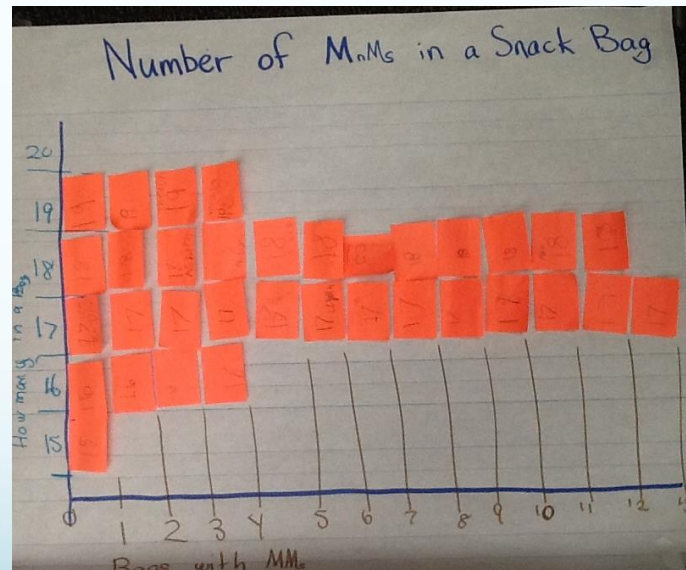
A graph activity to explore reading beyond the data
The framework is pre-made

Reasoning tools

Student 1: same amount

Student 2: not the same

Who is right?

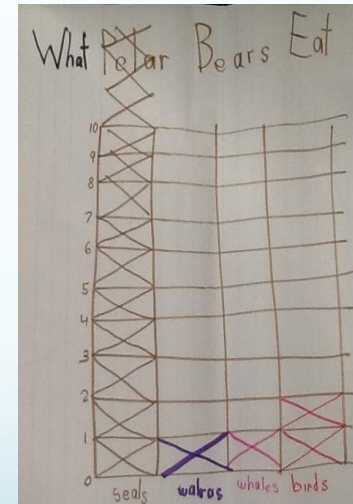
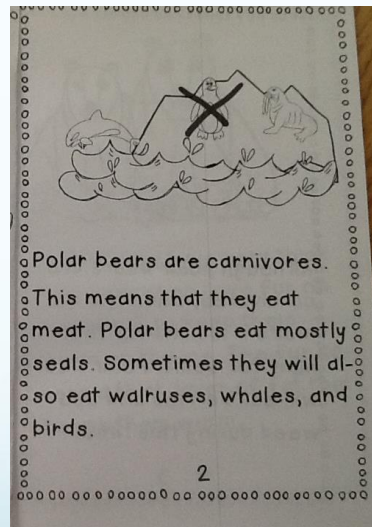


Safe Exploration

- Failure is accepted
- Opportunity to confront limits of thinking
- Feedback from task
- Opportunity to “try on” an idea without consequence
- Opportunity to create, just because
- Reflection and discussion build language and concepts

Probability connections

Supports comprehension in reading



ELA connections

Kinder: Tallies and ABCs

Graphs:

*creating reasons to reread/re-engage with text

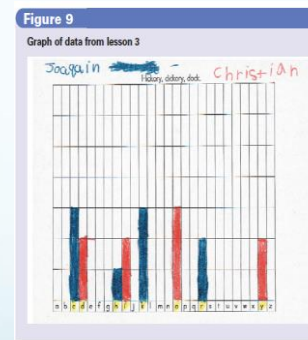
*probability language in discussion

*graph becomes a vehicle that

extends ELA learning

Upper grades:

record and graph vowel sounds (short a long a) in a short text



Teacher. Who can tell me something about our graph?

Student. Most boxes don't have no colors.

Student. Some of them have more and some of them have less on them.

Teacher. How can you tell how many letters are in the first line of the rhyme from the graph?

Student. We count all the boxes.

Student. Yeah, a has lots of boxes colored. It's the most biggest.

Teacher. Which letter occurs most often in our line?

Student. The a. It has lots and lots of boxes colored.