



# Objectives

Participants will be able to:

1. Become familiar with the AnimalWatch Vi: Building Graphics Literacy tool.
2. Identify graphics literacy skills students need to develop in order to be efficient in locating and interpreting information.

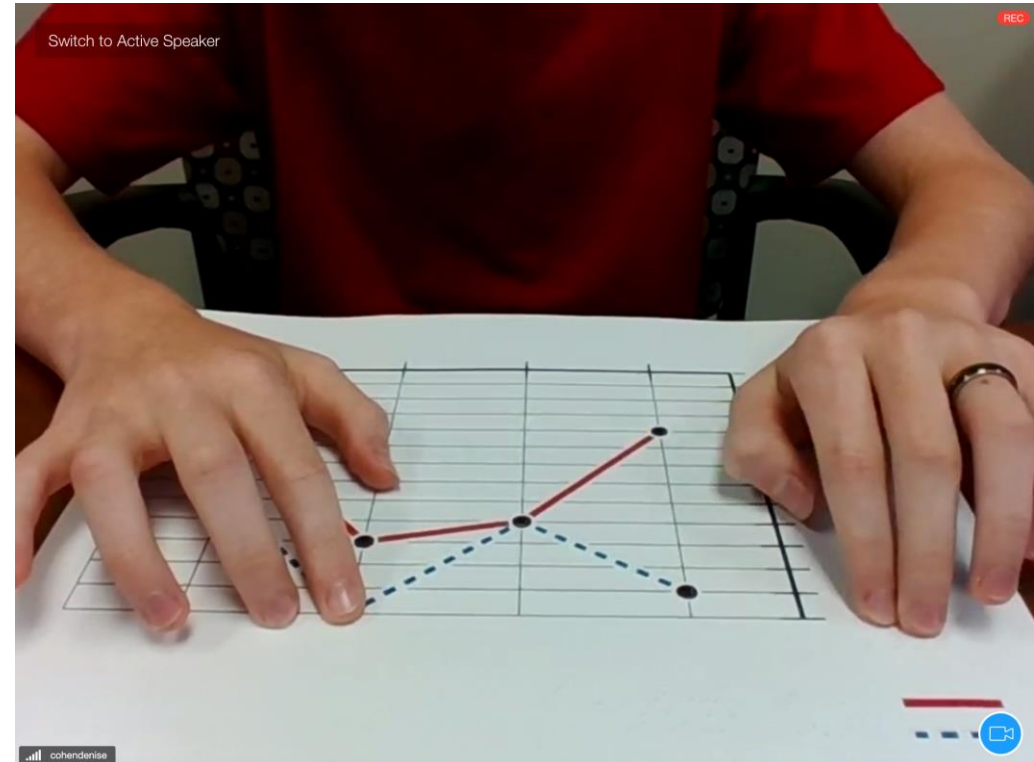
# AnimalWatch Vi: Building Graphics Literacy, Overriding Questions

- How can we support students at the pre-algebra level in building their efficiency and accuracy in gathering information from material presented in graphs and maps?
- What strategies and techniques can TSVIs use to increase their students' accuracy and efficiency in getting information from graphs and maps?



# Through 10 Units, Students Build Skills with:

- Bar graphs  
(single & double bars)
- Line graphs
- Circle graphs
- Venn diagrams
- Coordinate planes  
(quadrant 1 & all 4 quadrants)
- Box plots
- Maps
- Data tables



# Multiple Choice and Open Ended Questions in the App

6:46 AM Sat Feb 23 100%

Problem A5 Logout

**How many students in all visited the Platypus exhibit, the Tasmanian Devil Exhibit or both exhibits?**

- 121
- 132
- 147

**Sheet PL3**

Number of Student Visitors

PL3

SettingsScratch

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Problem A6 Logout

**Imagine that the zoo stops offering the Roar and Snore Campground option. How will the Venn diagram change? What will it look like? Record your answer.**

PL3

Settings

Systematic  
approach

Using  
surrounding  
information

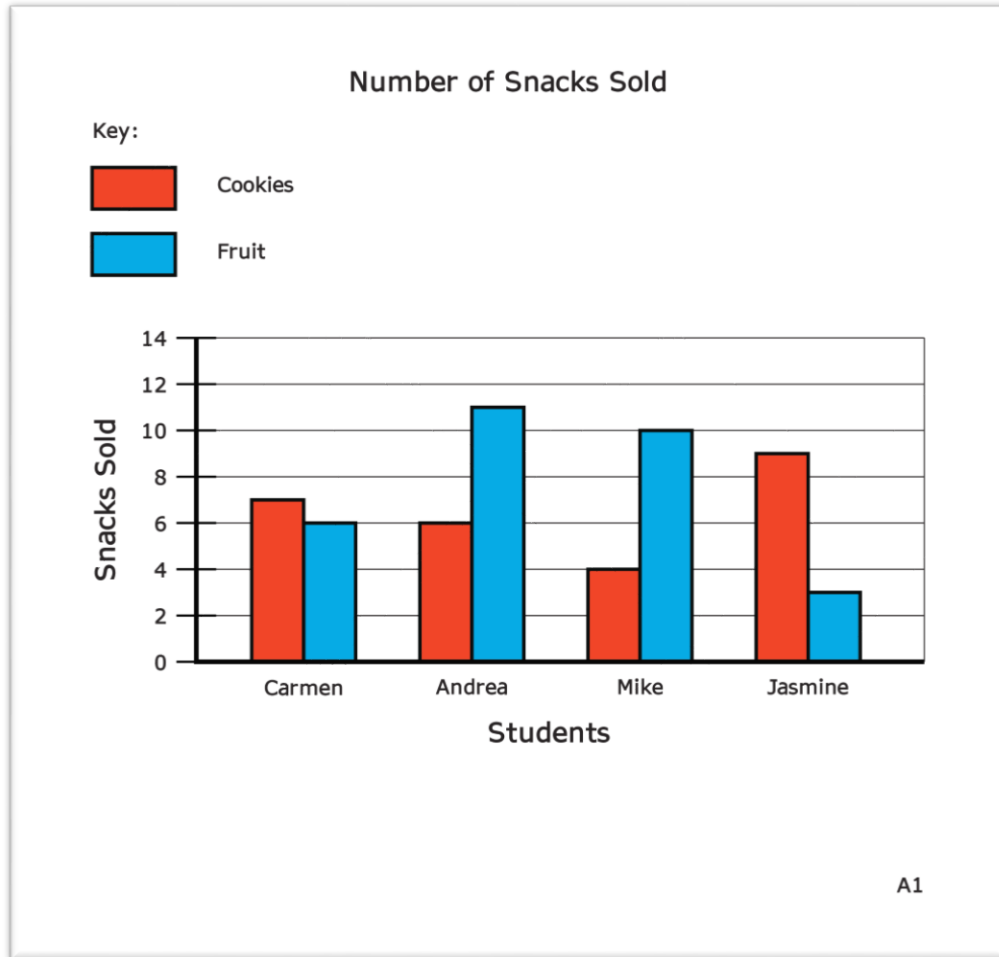
## When You're Teaching Students Graphics Literacy Skills, There is Lots to Think About!

Use of  
two hands

Verify the  
information

Vocabulary  
Development

# Systematic Approach



- Read the title and look for a key
- Preview the entire page
- Some students may find it helpful to read the question beforehand, others may want to first become familiar with the graphic.

# Systematic Approach: TSVI and a Student Share

“At the beginning of the study I'd have to remind her to take her time and examine before you answer. I'd ask her "What do you think you can do differently?" if she got it wrong. I saw her spend more time slowing down and looking over the graphic. I hope she realizes that she needs to take time.” (TSVI)

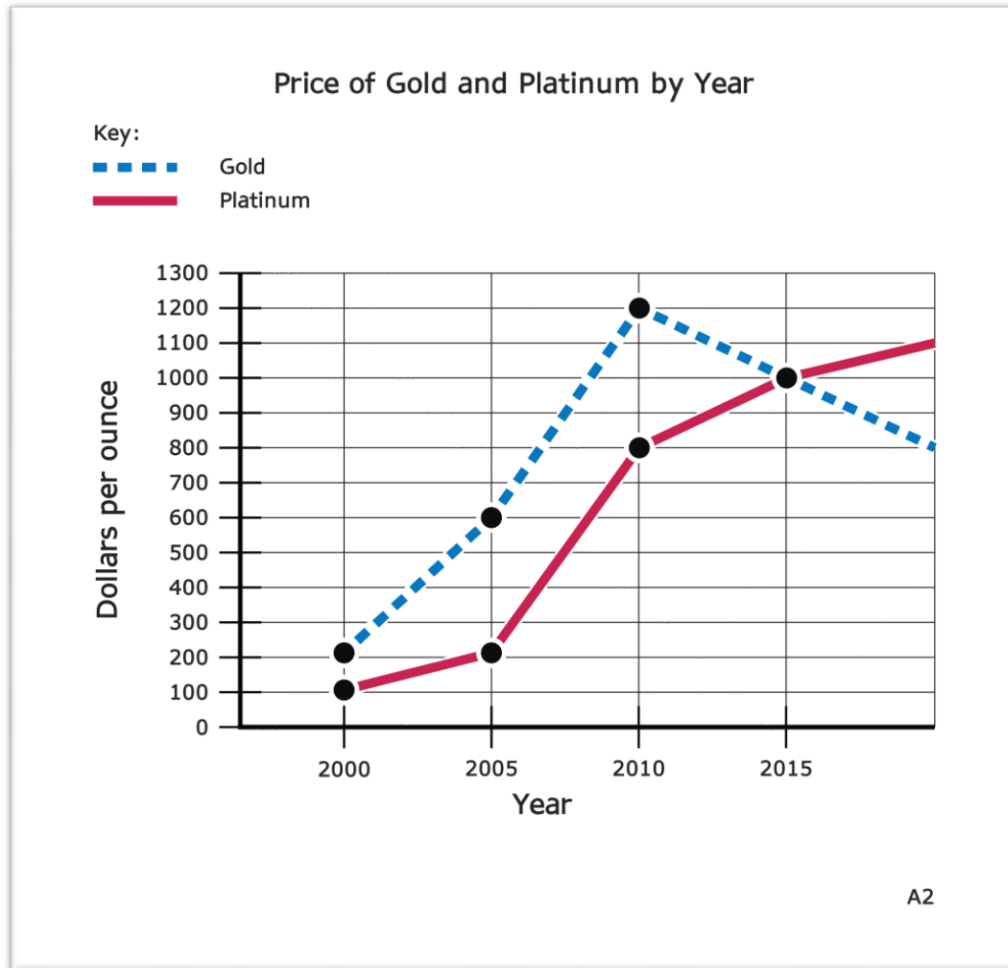
“In history I had to navigate a map of South Africa. I knew I had to go with a system to find each country. It was easier to navigate [after doing the units].” (8<sup>th</sup> grader)



# A Student Shares About the Importance of Previewing

“Especially in coordinate planes, we have to make graphs. It is helpful to know about the x and y axis and which quadrants are positive and negative. General idea of previewing is good to help me in my classes. I preview now.” (8<sup>th</sup> grader)

# Verify Information



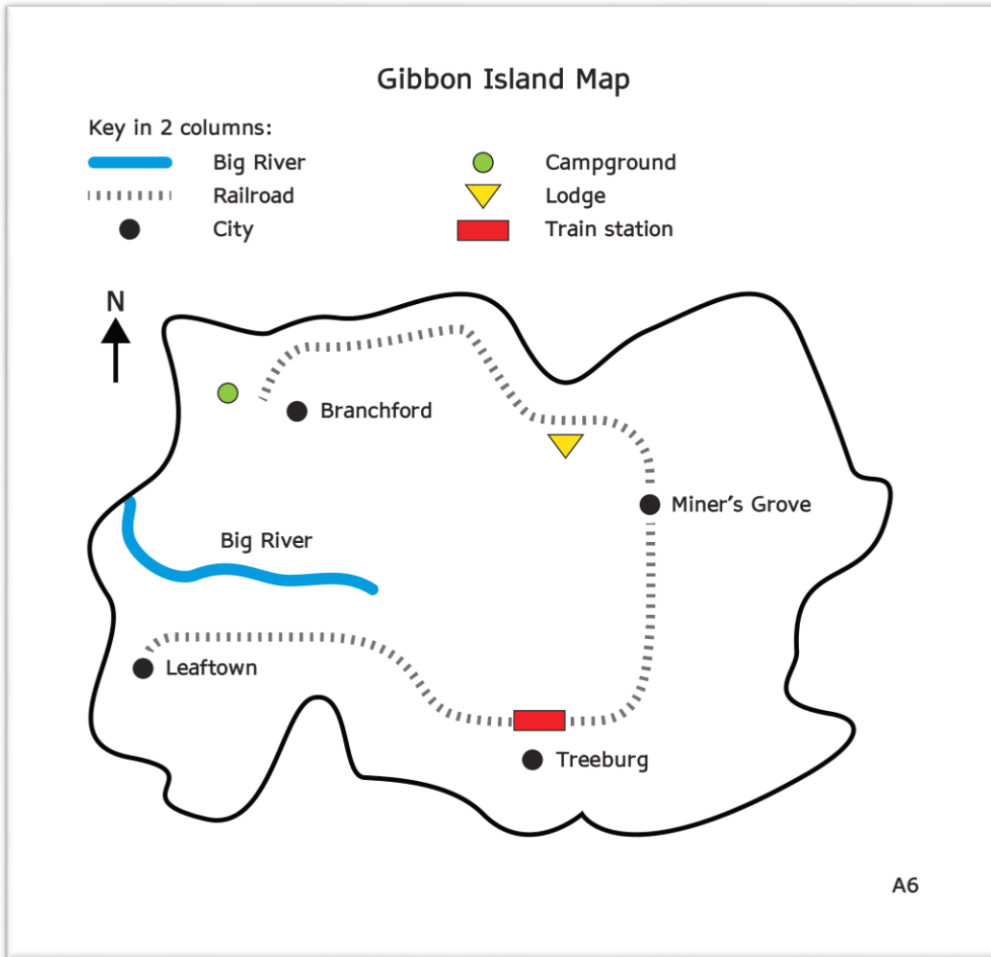
- Students need to think about the most efficient way to get the information.
- Students must verify information in a systematic manner.
- Teach terms (e.g., intersect)

# Building Efficiency: TSVI and a Student Share

“I liked at the end he was really exploring the whole page before he went to answer questions. He was looking for a title, key, and exploring the tactile graphic.” (TSVI)

“I learned to scan left to right and look at every detail. I learned that you have to follow the lines to find things. It taught me to pay attention to everything on the paper.” (5<sup>th</sup> grader))

# Using a Key



- Actually distinct labels must be used on all graphics.
- Students need to fully explore a key as it may have multiple columns.
- When using abbreviations, use 2 cells with at least one of them having a dot 3 or 6.

# Students Share the Importance of Using the Key

“I sometimes had a hard time differentiating the textures. The key really helped me practice telling them apart.” (7<sup>th</sup> grader)

“I learned to look at the key of the graphs or maps because it gives you a lot of information.” (6<sup>th</sup> grader)

“Start at the key and familiarize yourself with the symbols and then do a light scan to orient myself and then after that I can go back in and look for specific things.” (7<sup>th</sup> grader)

# As You Work with Tactual Readers

1. Give students many opportunities to engage with graphs and maps beginning at a very early age.
2. Students need time to explore and get oriented before being asked to respond.
3. Teach students to use two hands and to “share the responsibility” of the jobs needed by those hands.
4. Students who are systematic in their approach are typically more efficient and accurate.

# Students Share the Importance of Taking it Slow and Thinking it Through

“[Now] I know you have to pay attention. You have to pay attention to how [graph or map] is laid out and what the question is asking you. You have to know if there are data points and if you have to go to the left and look slowly to find [the value].” (7<sup>th</sup> grader)

“Hearing myself talking about the graph out loud made me focus and think about what I am doing.” (7<sup>th</sup> grader)

# Through the Project, Students Increased Their Confidence

“[In math class] she was able to push herself to read the tactile graphics and be methodical.” (TSVI)

“[Now I] feel more successful in the math class because I can do math more fluently. I can work with graphs more fluently. I think if I had gone in math class before with a bar graph [I wouldn't know what to do] and now I really can see the difference.” (5<sup>th</sup> grader)

“On state testing this year I felt a lot better. Last year there was a bar graph with 2 different bars and I was "how does this work" and this year I got it.” (7<sup>th</sup> grader)