

Reading For Numbers and Statistics


GRADE

9 - 10

DISCIPLINE

 **Social Studies**

COURSE

 **Looking for an Argument**

TIME

 **50min**

TEACHER MODELS ANNOTATION STRATEGY FOR UNPACKING AND QUESTIONING NUMBERS AND STATISTICS IN NON-FICTION TEXTS. STUDENTS PRACTICE, DISCUSS, AND REFLECT ON HOW THE STRATEGY IMPACTS THEIR COGNITION.: 1-2x per semester. Then frequent referrals to the strategy and poster whenever unpacking a text that includes numbers and statistics.

READING FOR NUMBERS AND STATISTICS

STUDENTS WILL:

Students will read non-fiction texts, identifying numbers and statistics that contain important info. They will annotate with this question in mind: "Why did the author include these numbers and statistics?" After annotating, they will discuss their findings with their peers. Lastly, they will reflect in writing and aloud about how reading with this lens impacted their thinking, understanding, and approach to reading.

FACILITATION STEPS:**Classroom geography:**

Ideally students are seated in pairs or groups of four so that they can turn and talk to each other during the discussion, prior to reconvening in whole class discussion.

Mini lecture: 5 mins

The teacher gives a brief description of a time in life when not having numerical info would be a problem. Says: *Imagine you are going to receive a raise, but you don't know how much. You are supposed to make copies for a colleague, but you don't know how many to make. In both of these scenarios, having specific numbers will give you valuable info to help you make decisions. Without numbers, you wouldn't know what to do, how to budget, how to help your colleague. We need that specific info. Authors include specific numbers and statistics for a reason. They are trying to give us important details, to help us visualize something, or to convince us of their argument.*

Model: 10 mins

-Teacher points to poster. Says: *I am going to model for you, how I read for numbers and statistics, with this question in mind. "Why did the author include these #s and statistics? What do they show me?" The answers to these questions will help you find evidence, see new details, find important facts, change your claim or thoughts on a subject.*

-Teacher reads a chunk of text out loud, pausing to underline numbers and stats, then annotating in the margins.

Sample: "For instance, a 2003 study by Emory University researchers of data from more than 3,000 counties from 1977 through 1996 found that each execution, on average, resulted in 18 fewer murders per county."

Teacher says: *So I'm underlining 2003. I'm also underlining 1977-1996. 2003 shows me that these researchers looked at data recently, but that the data they were looking at was from 1996 at the earliest. So the data is all over 20 years old. I wonder if these stats would be different if they were more current.*

1977-1996 is a long time, so this data covers a long period. Also it was in 3,000 counties. So I know that this study is covering a lot of time and a lot of different places of the US. That shows me that this study is serious and applies to a lot of people.

Lastly, this study says that for every 1 execution, there are 18 fewer murders. That really surprises me. I've always been against the death penalty, but this makes me wonder, does the death penalty actually save lives. I'm still not sure if the execution causes the reduction of murders. Like maybe all the counties they studied are in places with low murder rates. But this has changed the way I think about this issue. I need to learn more and see if executions truly reduce murder rates.

Practice: 10-15 mins




Ask students to practice annotating using the same or a similar text. Give an appropriate amount of time for whatever text you assign. Give more time than you think they will need.

Discuss: 5-10 mins

Ask students open ended questions about what kinds of information they found, what the numbers and statistics showed them, what the author was attempting to convince them of. Notice and praise when students are really deeply grappling with the numbers and making inferences or raising questions.

Self Reflection: 5 mins

First in writing, then out loud, ask students to reflect on this strategy. Say: *How did reading using this strategy shift the way you thought and read? Did it cause you to read more closely? Did it shift your understanding?*

CONTEXT/IMPLEMENTATION NOTES:	<p>Teacher anecdote:</p> <p>Prior to doing this lesson, I found that students would often misread or simply skip over important numerical and statistical info. The key here is that students begin to wrestle with the numerical info in the text. The reflection piece at the end is critical. Students get to hear that their peers are deepening their understanding, reading with more purpose, and finding info that changes their perspectives on the world.</p> <p>Metacognition in Student feedback:</p> <p>"Reading this way made me realize that when you look closely sometimes a text is saying something different than what you originally thought."</p> <p>"This made me take my time and read deeper into the meaning of the text."</p> <p>"Sometimes I used to skip over the numbers, but doing this, I see that they help me to understand the text more deeply."</p> <p>Tips:</p> <p>I've found that students who are struggling readers tend to enjoy this task. It starts with a very simple, attainable goal: Find the numbers. One easy adaptation to make for students who read at a low level, or students with difficulty maintaining focus, is to give several short statistics. This exercise can be modeled and practiced with an incredibly brief, but statistically rich text.</p> <p>Application:</p> <p>This lesson is particularly relevant for any class that requires students to use evidence to support a claim. Often when students are asked to use evidence, they cite an expert's opinion or analysis, however we want to push them towards utilizing statistical evidence and providing their own analysis.</p> <p>Citations:</p> <p>Beers, Kylee, and Robert E Probst. "Reading Nonfiction." <i>Heinemann Publishing</i>, Heinemann Publishing, 20 Oct. 2015</p>
STANDARDS:	<p>RH.9-10.1 : Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.</p> <p>RH.9-10.7 : Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.</p> <p>SL.9-10.1 : Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9—10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.</p> <p>SL.9-10.2 : Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.</p> <p>SL.9-10.3 : Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.</p>
ADDITIONAL ATTACHMENTS:	<p>Teacher Resources</p> <p> IMG 3031.JPG</p> <p>Student Work Samples</p> <p> IMG 3053.JPG</p> <p> IMG 3054.JPG</p>

by Matthew L. Rohrer

Adapted from "[Reading For Numbers and Statistics](#)" by Matthew L. Rohrer