

## **Now You See It! Using Infographics to Help Kids Access and Present Information**

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### **Abstract**

This curriculum unit was designed to accompany Common Core literacy standards using an approach not often associated with literacy- the infographic. The idea is to introduce students to infographics, guide them to use critical thinking to create them, and ultimately, as lifelong learners, be prepared to evaluate the structure and design of the infographics they will encounter in the media as they get older. This unit is written using 4th grade ELA standards associated with character traits, but could be adapted to older and younger audiences. Furthermore, this unit suggests that using infographics with ESL and special education students could help them develop comprehension skills even though their reading and writing skills may not be on grade level.

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### **Rationale**

Infographics are a mix of images, charts, and text seen widely in contemporary magazines, newspapers and on the Internet. The frequent use of infographics speaks to their versatility and the multitude of advantages they offer. Infographics synthesize large amounts of information into smaller, more accessible pieces (Mayer, 2001) that especially appeal to visual learners. The human brain processes images faster and visual memories are more indelible (Potter, 2014), so infographics create a more immediate and longer lasting impression on readers. These studies support the fact that right now people prefer information and news in graphic form (Pew, 2016).

Students need to be familiar with how to read and evaluate such data and information visualizations (Trumbo, 1999) in order to be lifelong learners. It's not a given that everything that calls itself news is in fact genuine and accurate. Our students will need to be able to automatically discern the difference between real and fake information as adults. The persuasive power of infographics could be used to spread misinformation unless people are trained to interpret and think critically about the

information provided. These evaluation skills come from learning and training<sup>1</sup>- it is not innate.

Within education, the use of infographics is not as widespread. Our allegiance to more traditional methods of delivery and assessment are partly responsible for the lack of adoption of infographics. Most teachers subscribe to a pedagogy that practices formal reading and writing. While these skills are necessary, they are clearly not the only skills students need to learn. Jobs today and of the future require critical thinking and creativity more than ever. It is our responsibility as educators to prepare students for these jobs by creating environments where applying multiple, creative strategies across and beyond core subjects takes place routinely so that students are equipped to integrate concepts from art, math, literacy, science, and social studies in order to produce academic works.

There are several benefits to using infographics in a classroom. As a tool for concept delivery, research suggests that infographics motivate students to stay engaged in the learning process and that they many prefer them to traditional delivery methods such as textbooks (Bicen, 2017). In essence, infographics are a solution to engaging with students who may struggle with traditional methods of comprehending content. Also, infographics increase motivation engagement (Wolfe & Kleijwegt, 2012) which is imperative since motivation for struggling readers is difficult to maintain. Robertson, et al, (2013) offered as evidence to support the idea that without high enough levels of motivation, struggling readers will not engage. They conclude that:

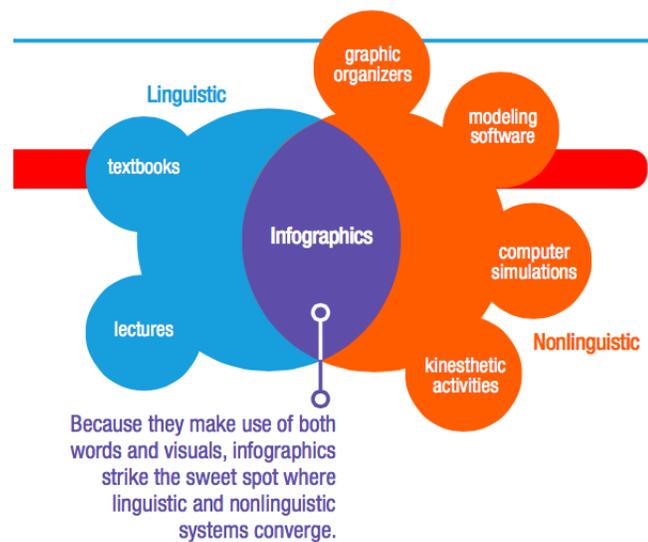
The centerpiece of traditional approaches to assisting struggling readers has been to change the curriculum, but such practices have failed to lead students to higher levels of reading and knowledge acquisition. To meet this challenge calls for a reconceptualized view of effective reading instruction that incorporates greater intensity and cognitive challenge and promotes students' motivation to engage in literacy-based instructional activities and persist in the hard work of school.

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<sup>1</sup> RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

Infographics work in all kinds of classrooms. As they break the monotony of teaching standards the same way year after year, infographics have been used cross-circularly (Lindblom, 2016). Infographics tell a story through examination and students can be tasked with telling what that story is (Krum, 2014) whether it's the story of immigration in the United States or the personality of a character in a book. Conversely, students can create them in order to tell their own story. More traditionally used in science to explain phenomena (ie. how a beehive functions) or bring attention to issues of a scientific nature (i.e. the impact of global warming), infographics have successfully been integrated into literacy as a means for not only explaining nonfiction, but to decompose fiction (Lindblom, 2009).

Infographics, by design, are an amalgam of the best of what we want and should expect from our students-high impact learning. They are carefully crafted with the end user in mind, seeking to add to the knowledge of their audience in ways that are more easily understood and leave a lasting impression. This unit seeks to make the case that not only are infographics worthy tools to be implemented in classrooms far and wide, but that for some students, ESL and struggling readers in particular, they are better choices than traditional reading delivery methods and writing assessments because, according to Krauss (2012) “infographics strike the sweet spot”:



Literacy standards by 4<sup>th</sup> grade are almost exclusively geared toward comprehension skills, but reading and comprehension are not mutually inclusive skills. There are students that have aural comprehension without a matching level of reading mastery. Those are the students that answer questions based on a read aloud or lecture,

but fail to show the same level of competency on a paper and pencil test for comprehension or understanding. Additionally, there are students that comprehend, but cannot express their level of understanding due to language barriers or deficiencies. Those are your students who literally do not have sufficient language and writing skills to complete a constructed response or essay. The use of infographics in the classroom as an assessment of comprehension is one strategy to support these students, because although they do not rely heavily on traditional writing structures, infographics require the critical thinking part of any task to which they are linked because they require students to choose which information is presented and how best to present it. Additionally, being presented with an infographic to explain or retell information taught in a traditional format helps those students because the images can solidify ideas about the material that students had difficulty reading. Using infographics also increases critical thinking skills in general (Krauss, 2012) because of the skills used to create and evaluate infographics. Utilizing infographics increases the inclusion of students who may otherwise be left behind because they are not yet proficient at reading. Infographics in literacy may help teach comprehension skills to students that are not on-grade-level readers.

In summation, I believe the inclusion of infographics in the classroom would be of such benefit to students that every teacher, across grades and subject areas, should utilize them. They can motivate, stimulate, and support students as they work toward standards mastery.

## **Background**

An infographic “is an assemblage of knowledge that utilizes images, charts, graphs, maps, text, numbers and characters to transform data into visually accessible messages” (McCormick, 2017). Due to all these components, infographics can be fun as well as informative. A well done infographic is a great tool for quickly providing information. Infographics also provide an opportunity for students who struggle with standard expressions of mastery (i.e. essays and reading comprehension tests) to literally show what they know. With or without the aid of technology based applications, students can create infographics that are visually stimulating and confer complicated concepts and ideas succinctly and thoroughly. I propose using infographics in literacy for all reading levels, but with specific benefits for struggling readers as they master other literacy concepts. The use of infographics can aid students in gaining and expressing an understanding of more complex ideas. For example, infographics can be used by students identifying and reporting character traits begotten from inferencing.

There are several steps in creating an effective infographic. However the amount of support students receive can and may vary by subject matter and grade in order to grow your students into great creators of infographics. When beginning to use infographics, the experience can range from students filling in an infographic that is missing particular parts (Fig. 1) or being given all the components and tasked with assembling them to creating an infographic from scratch. When creating an infographic is a part of the objective, in general, students can get started by focusing on four basic steps:

- 1) Subject/ Topic: Research your subject/topic (whether it is self-chosen or assigned)
- 2) Facts: Decide which facts you want to share with your audience
- 3) Graphics: Identify images and create graphs to represent the facts
- 4) Presentation: Organize the images and facts in an appealing way to maximize audience reception

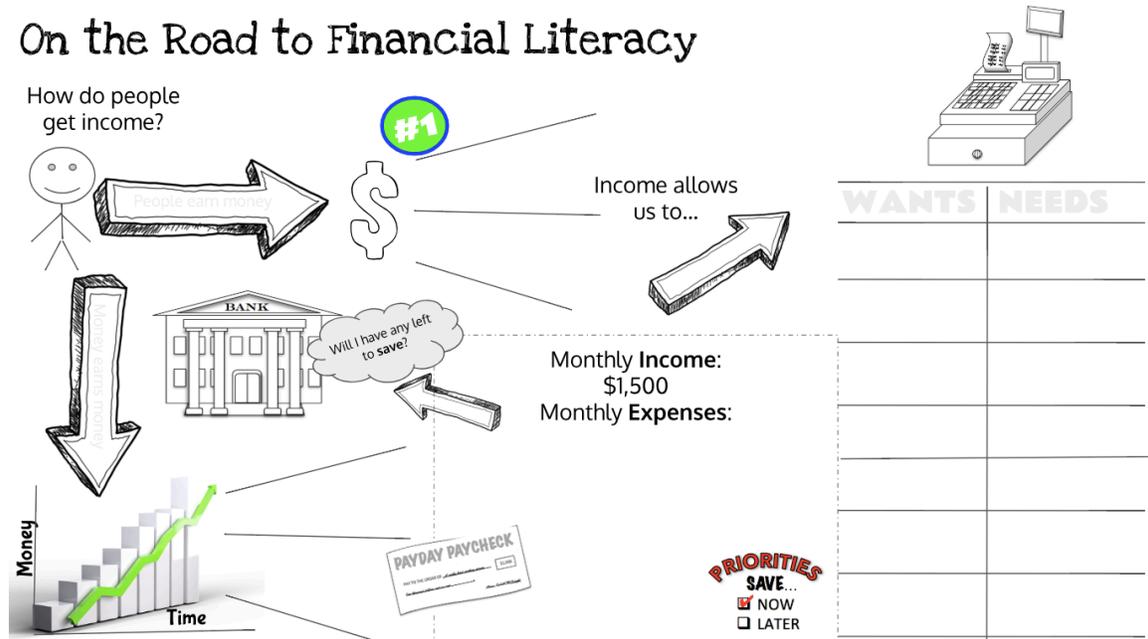


Figure 1: Fill in the blank/ guided notes infographic.

Choosing a topic may be a tall order and the amount of varying topics may present a difficult task when it comes to grading, but including a step-by-step directions, an example, and a rubric (Fig. 2) can minimize student confusion and expedite the

evaluation of projects. For example, students may be allowed to choose a topic when preparing for something like National History Day, when the only guidelines are format and students can inform about anything. An infographic can be graded as their classwork leading up to their final presentation.

	20	15	10	5
Information Presented	5 facts/ answers	4 facts/ answers	3 facts/ answers	2 facts/ answers
Visualizations	All visuals align to facts and vary: images, charts, graphs	Most visuals align to facts & vary, few images not aligned	Some visuals align to facts & vary, few images not aligned	Few visuals align to facts & vary, few images not aligned
Layout	Thoughtful layout, concepts organized, neat	Layout is organized conceptually, not neat	Layout is neat but elements not organized	Elements are not neat or organized, but present
Design	Appeals to audience: large, colorful, clear images/ graphs/ charts with a complimentary color palette	Missing few elements: large, colorful, clear images/ graphs/ charts with a complimentary color palette	Missing some elements: large, colorful, clear images/ graphs/ charts with a complimentary color palette	Missing most elements: large, colorful, clear images/ graphs/ charts with a complimentary color palette
Writing (Use self edit checklist)	All capitals, punctuation, and grammar correct	Most capitals, punctuation, and grammar correct	Some capitals, punctuation, and grammar correct	Few capitals, punctuation, and grammar correct

One point for one fact; Zero points for missing elements.

Figure 2: Example of 4th grade rubric to be used by students to create and teachers to assess infographics where the infographic is part of the focus.

Included here is a more subjective rubric with Likert rated criteria.

Student research can look many ways. Teachers can provide the material from which students must decipher the facts they ultimately want to use. Students can use the internet with guidance to find their information on their own. Or yet another way is for students to use books strategically given to them or by visiting the library on a fact finding mission. Choosing which facts to include in their infographic is where the first part of critical thinking comes into play and where some difficulty may arise as students learn to trust their ability to make decisions about what they've learned. The process of students conducting research may best be taught through a gradual release process so that they comply with the expectations of the teacher and course. Providing an outline will help students zero in on what facts and information they need to include. Outlines can be created by the teacher or as a whole-class created shared document (Fig. 3).

## **Organizing and Grouping Ideas in an Outline**

An outline helps you to put alike information together. To create an outline, think about the topics you want to cover in your essay and then what key details you will need to explain

- I. Introduction
  - a. Describe this person's character.
  - b. What is the person known for?
  - c. Why should we know or want to learn about this person?
- II. Childhood
  - a. When and where was your person born?
  - b. Who were their parents and siblings?
  - c. What kind of child was this person?
- III. Adulthood
  - a. When and where did the person go to school/ get married/ first discover a love for \_\_\_\_\_?
  - b. Did anyone influence your person and in what ways?
  - c. Did your person want to be or do anything in particular when they grew up?
- IV. Accomplishments
  - a. When did your person do something great and what was it?
  - b. When did your person do something else great and what was it? When did your person do something else great and what was it?
  - c. How were these things related?
- v. Legacy
  - a. How do people feel about your person today?
  - b. How has your person contributed to a better world/ different world?
  - c. What lessons can people today learn from your person?

Figure 3: Example of an outline used to introduce how to structure a biographical essay.

When students have to choose images or create graphs to represent the facts they want to report, critical thinking really becomes an added benefit of using infographics. Nouns can easily be represented by images, but visualizing ideas and concepts make this step a challenge. Be prepared to support students at this step depending on their levels of competence. One way to address this higher order thinking step is to have done a whole class lesson to create an infographic where they receive the images when starting out and have them come up with the facts.

The last step, presentation, is where art and design can be included in the lesson. Websites with infographic templates take a lot of the design aspect of this step away because palettes and layouts are already present, but do not completely eliminate it. If students use digital templates, they must still choose one that aligns and /or compliments their project and can accommodate the facts and information they choose to use. The use of infographic templates can be a helpful first step or when the focus isn't the infographic itself. If students are creating theirs from scratch, either on paper or digitally, learning about complementing colors and mood can be fun. Examining, comparing, and evaluating infographics can help students create better infographics while continuing to hone their critical thinking skills. Lastly with this step it is important to note that the amount of information and the size of images and charts must be considered. Sometimes less is more, but sometimes less isn't enough and vice versa. Creating an infographic using your own directions and self-made rubric will be a great way to ensure that as a teacher you haven't left out anything or that there's not too much being asked of students.

As mentioned previously, another approach to using infographics across the curriculum is to create the infographic with missing elements and have students fill them in, either as guided notes or as an assessment. In that case, the teacher takes on the task of thinking critically about content and design. While the four basic steps are still a guide and examples abound online, here are a few tips to help teachers help their students when using pre- or self-made infographics:

- 1) Pulled back focus: be specific about what students are supposed to learn and how to get them there
- 2) Opt for co-creations: use line drawing images and tables so that students can add color
- 3) Gray letters: consider using gray typeface instead of fill in the blanks when learning content or domain specific language or vocabulary words is a part of the task to avoid students writing the wrong thing and having to "unlearn" what they *thought* was the correct answer.

When creating an infographic to accompany a lesson, think of it as pulling back on the focus of the topic to show the path of getting there. In other words, allow images to represent not only what students are learning, but what they have already learned so that those images guide them to learn the new content. This approach will enable the infographic to include more elements of a complete lesson by accessing prior knowledge and not "just the (new) facts".

When presenting students with a partially done infographic, there is the risk that it will have less impact than creating their own. To mitigate this, create an infographic that can not only have student added text, but can be colored. Color has been linked to increased memories for decades (Dzulkifli, 2013), so not overlooking this step can benefit students greatly.

Using content or domain specific language or vocabulary words is an integral part of many lessons. If printed infographic templates are given to students as guided notes, turning the typeface of those words gray will ensure that students associate the correct word with the correct image or fact. Students can then trace the word(s) in color for an even more lasting effect.

Although the proposal of using infographics presented here supports the use of infographics for several standards across several grade levels from K to 12th, in particular it will address specific 4th Grade Common Core Standards. Within the reading standards, use focuses on pulling details from the text and either listing or organizing details in order to analyze them. Within the writing standards, use focuses on the graphic organization and data visualization of information and pre-writing, when applicable. For ESL students, Special Education students, and struggling readers, the focus is on applying a range of skills to fictional and nonfictional texts that have been read aloud.

The lessons herein constitute a unit on character traits. The lessons start from identifying character traits, moves through how to identify them (inferencing), and then how to graphically represent them.

## **Objectives and Strategies**

In this section, teaching character traits is explained. Objectives are stated in the “Students will be able to...in order to...” (SWBAT) format. Bloom’s Taxonomy of Higher Order Thinking Verbs are used to order the strategies suggested.

*SWBAT draw on specific details (e.g., a character’s thoughts, words, or actions) IOT describe in depth a character, setting or event in a story or drama.*

Teaching character traits evolves over grades. In kindergarten, students learn to identify characters. In first grade, they learn to describe characters. In second grade, they

describe how characters respond to events. In third grade, they describe the characters and begin to think about traits, motivations, and feelings. By fourth grade, students need to describe characters in depth. In order to accomplish this, students need to both identify details (actions and dialogue) in the text that allow for interpretation and use inferring to connect the actions and dialogue to traits. A review of the previously learned character trait skills prior to the further development of this skill in 4th grade is warranted.

Strategies for Identifying Character Traits (Review)	
Recall & Review	Recall & review characters with obvious traits (heroes & villains)
Categorize	Sort known characters that possess specific traits through group discussion
Justify	Students justify traits
Demonstrate	Create a mini-poster/ worksheet of a well-known hero or villain surrounded by their traits (Fig. 4)

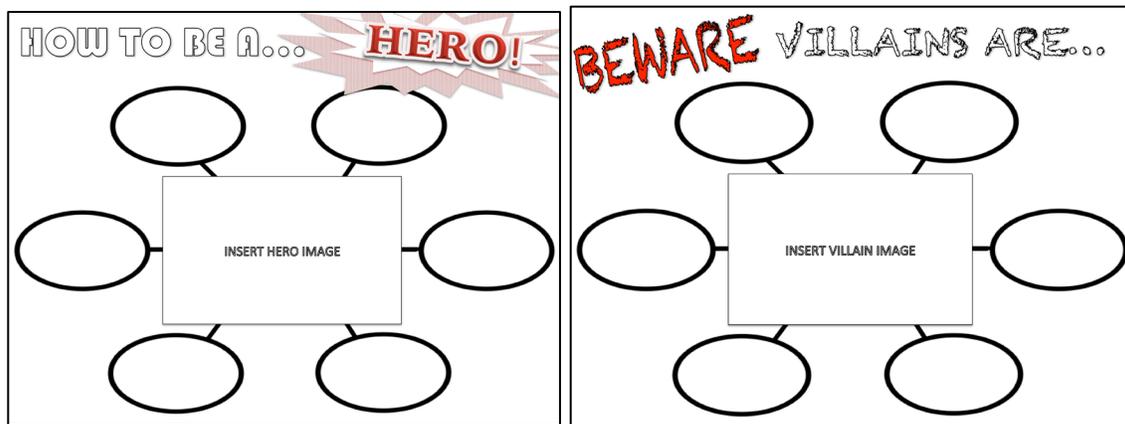


Figure 4: Example of a graphic organizer for hero and villain character traits.

*SWBAT interpret information from different formats IOT explain how the information contributes to an understanding of the text in which it appears.*

Strategies for Inferencing
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Define	Introduce and define the concept of inferencing
Develop	Provide opportunities for students to make inferences
Justify	Students justify their inferences based on evidence

*SWBAT refer to details and examples IOT draw inferences.*

Strategies for Making Inferences About Character Traits	
Recall & Review	Recall and review character traits from a list
Brainstorm	Brainstorm specific character traits through group discussion
Justify	Use inferencing to provide evidence/justify traits
Demonstrate	Create a word web graphic organizer with character traits and evidence.

*SWBAT draw on specific details (e.g., a character's thoughts, words, or actions) IOT describe in depth a character, setting or event in a story or drama.*

Character Traits Data Visualization	
Justify	Students justify traits by finding evidence from text
List	Evidence is listed
Measure and Enumerate	Text evidence is tallied. Qualitative data becomes quantitative data.
Calculate	Students calculate proportion of traits as a percentage
Construct	Students visualize data by constructing a graph

## Lesson Plans

Even though these lessons are written specifically with the ReadyGEN 4<sup>th</sup> grade curriculum in mind, they can be extrapolated for other texts and grades. These lessons are also introductory lessons that introduce data visualization, which is the creation of graphics to portray numerical data. The focus of these lessons is more on character traits and the infographic is the supporting material. Ideally the goal here is to have data visualizations that serve as a source that instantly show the personality of a character based on the amount of specific character traits they possess.

NOTE: The Madeline Hunter Model of Mastery Learning is used for lesson planning.

Heroes vs Villains: Identifying Character Traits (Review)	
Standard	CC. 1.3.4.C Describe in depth a character, setting or event in a story or drama, drawing on specific details in the text.
Objective(s)	SWBAT draw on specific details (e.g., a character's thoughts, words, or actions) IOT describe in depth a character, setting or event in a story or drama.
Lesson:	How can you tell a hero from a villain?
Anticipatory Set	Teacher leads discussion recent children's films. Students name their favorites. Teacher asks: How can you tell a hero from a villain? A good guy from a bad guy?
Objective and Purpose	"The purpose of this lesson is for you to identify the traits of a character from one of your favorite animated movies and support the choices you made."
Input	Students will be asked to identify and choose a character (possibly from a slide of choices) in order to create a character traits web.
Modeling	Teacher chooses and draws a character in the center of a blank page. Then thinks aloud about the kind of person the character is and writes some words around the character in the style of a word web.

Checking for Understanding	Teacher writes a few words that may not fit and asks students if there are any words that might not belong on the web. Teacher guides as needed, crossing off traits that do not align to the character.
Guided Practice	Teacher tasks students to help do another well-known character. This time students take turns coming to add words.
Independent Practice	Students are tasked with choosing character (possibly from a slide of choices). They are asked to identify a set amount of traits.
	Variation: after students have drawn their characters, a slide can be displayed with a list of character traits from which to choose.
Closure	Students are asked to share the character they chose, one trait they identified, and give one reason why they chose that trait. Sharing can be done whole class, with their table, partner, etc.

Caring is Contagious: Inferencing	
Standard	CC.1.2.4.B Refer to details and examples in text to support what the text says explicitly and make inferences.
Objective(s)	<i>SWBAT refer to details and examples IOT draw inferences.</i>
Lesson:	How to make inferences?
Anticipatory Set	Teacher leads discussion about making an inference (versus a conclusion). “If I walked into class wearing a raincoat, what would you think?” (“What would be the difference if I walked in here wearing a raincoat and I walked in here dripping wet?”) How do you know?
Objective and Purpose	“The purpose of this lesson is for you to practice making inferences. An inference is when you use what you know and what you’ve read to come up with a new idea about something. I know that when it is going to rain, I wear a raincoat and I see that my teacher has a raincoat on, so I think it might rain today.”
Input	Students will watch a series of short clips and make inferences as they watch. There are several videos on YouTube that guide a lesson through this skill or teachers

	can use some of their choosing. <a href="#">MeDaRo ED's True Move Commercial</a> , <a href="#">Amy Ginder's Partly Cloudy</a> , and <a href="#">Teal Carter's Inference Video</a> are good examples.
Modeling	Class watches True Move Commercial and teacher makes first inference at 0:12 seconds: "I wonder why he stole something for his mom? Maybe she needs something but doesn't have the money to afford it and it's important."
Checking for Understanding	Teacher tasks students for the elements that informed their inference. What I read (or saw) + What I know = An inference becomes Seeing a bot steal for his mom + If I stole something my mom needed it would be because it must've been really important and we didn't have the money to pay for it.
Guided Practice	Teacher draws attention to the other places in this commercial where inferences can be made. Students can do Turn and Talk as well.
Independent Practice	Students are tasked with making the last inference: why does the doctor pay the bill?
Closure	Students watch a follow up video doing all the inferencing. An exit ticket can be used that includes a detail from the film and a place for the inferencing equation to be filled in.

Finding Text Evidence of Character Traits Through Inferencing	
Standard	CC.1.2.4.B Refer to details and examples in text to support what the text says explicitly and make inferences.
Objective(s)	<i>SWBAT refer to details and examples IOT draw inferences.</i>
Lesson:	How to find evidence for character traits?
Anticipatory Set	Teacher leads discussion about using text-based evidence for identifying character traits: "Remember when we read about Pecos Bill carrying a mountain lion around his neck? What character trait can we use to describe him having read that?"
Objective and Purpose	"The purpose of this lesson is for you to look at the actions and dialogue of the characters in this story and make inferences about that character in order to identify

	and justify the character traits of that character. An inference is when you use what you know and what you've read to come up with a new idea about something. I can infer that when a firefighter saves a person from a burning building that the firefighter is brave. Brave is the character trait, saving people is my evidence and my inference is knowing it takes bravery to save someone from a fire because fire is scary to most people.”
Input	Students will be presented with a list of character traits and a whole class discussion will be about what those traits look like in real life. Turn and Talk will be used for harder traits that all students may not be familiar with, like dependable.
Modeling	Part 1: Teacher will display an image of a police officer and describe the duties of the officer and ask, “What character traits could we use to describe a police officer?” This is repeated as per the teacher’s preference and/or class’ need. Part 2: The same technique is applied to the text. Teacher reads a sentence from the text from which students need to make an inference about the trait(s) of that character: “What character traits could we use to describe ___ based on what the character just did/ said? I think ___. Does anyone agree with me? Is there a different trait I could infer?”
Checking for Understanding	Teacher asks students for the evidence that informed the teacher’s inference.
Guided Practice	Part 1: Students will be led in justifying the traits of people in various professions using inferencing. Students will work in partners to play a whole class game using images and traits. This lesson suggests 7 professions with clear (although varying) traits that students are familiar with (Please note that no trait carries judgement and students may need to be told this explicitly.) For example: <i>strong</i> trash collector/ lumberjack, <i>smart</i> engineer/ teacher, <i>quiet</i> librarian, <i>responsible</i> principal, <i>persistent</i> bill collector, <i>compassionate</i> doctor, <i>observant</i> detective. Part 2: Students try with an excerpt from the text to identify a character trait.
Independent Practice	Students use the text to fill out a graphic organizer of traits and evidence, including page numbers of evidence.
Closure	Students walk around the class comparing their papers with others looking for people with similar traits and the same evidence.

This next lesson speaks to the issue to quantifying qualitative data, which many literacy lessons contain. While a difficult task initially, it was tackled with ease by using tally marks to count the character traits. Within one relatively simple worksheet, and without having to do extensive work on turning qualitative information into quantitative

information, students can graph character traits by counting the number of text based examples of said traits.

Character Traits Data Visualization	
Standard	CC. 1.3.4.C Describe in depth a character, setting or event in a story or drama, drawing on specific details in the text.
	CC.2.4.4.A.2 Translate information from one type of data display to another.
Objective(s)	SWBAT draw on specific details (e.g., a character’s thoughts, words, or actions) IOT describe in depth a character, setting or event in a story or drama.
	SWBAT use table, chart, bar graph, or pictograph to display qualitative information about a character IOT translate information from one type of display to another.
Lesson:	What kind of person was John Henry (JH)?
Anticipatory Set	Teacher leads discussion about character traits: what they are, how to identify them, why authors let us know about their characters personality, how traits help us make predictions, examples of them, etc. Teacher displays heroes and villains and students brainstorm character traits to describe them. Students are reminded that inferencing is used to identify character traits, so to be critical of what a character says and does.
Objective and Purpose	“The purpose of this lesson is for you to identify JH’s character traits based on his words and actions and to use those traits to examine what kind of man he was in the text.”
Input	Students will be given a worksheet on which to identify 3 character traits, provide text based examples of said traits, and tally the evidence.
Modeling	Teacher chooses “caring” to describe JH. Teacher uses Think-Aloud technique to locate text based evidence as students follow along in their books, taking turns reading aloud said evidence as it is identified by the teacher. Traits are tallied and
Checking for Understanding	Teacher tasks students with finding one more piece of evidence and to hold their finger on (or place a Post-It under) their evidence. Teacher checks and redirects as needed.
Guided Practice	Teacher draws attention to the beginning of the story and reads evidence that JH is strong. This guides students to identify him as “strong”. Students fill in their first column header and first text based evidence. Students are asked to find more examples in the text to support the inference that he is “strong”.

Independent Practice	Students are tasked with identifying two more traits and finding text based evidence to support their inference. (Fig. 5)
	Variation: the worksheet can have column headers filled in so the task is to find text evidence OR the worksheet can have the columns filled in so the task is to identify the trait OR both the column headers and columns are filled in so the task is to make tallies and fill out the person graph.
Closure	Students

Identify 3 character traits for John Henry.  
List and tally your evidence  
Count up the tally marks for each character trait.  
Color John Henry's character bars based on your tallies.

### Character Traits

Strong	Hard Working	Caring
Born with a hammer in his hand	Worked since he was 6yo	Took care of his family
Carried buckets of stones at 6yo	Did the work of two men	Did the work of two men so they wouldn't lose their jobs
Could drive steel spikes into the ground better than anyone else		Agreed to race a machine to save men's jobs
Did the work of two men		
Beat a machine		



**5**



**2**



**3**

### What kind of person was John Henry?

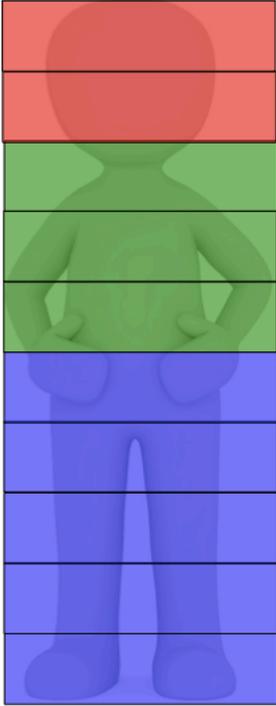


Figure 5: Example of completed John Henry character traits infographic

## Data Visualization

Although these particular lessons are geared towards a younger audience, students can be introduced to data visualization along the way that can help their ability later to create more sophisticated data visualizations and therefore more sophisticated infographics. Introducing the youngest of students to graphs, tables, and charts primes them for later learning.

In the Heroes vs Villains lesson, students can write one character trait on a Post-It and put it on a chart paper graph. The large, chart paper Post-It graphs (one for heroes and one for villains) become data visualizations that can be displayed in the classroom. Students can use these graphs to write stories by working in the character traits listed on the graphs. Additionally, students that need help determining character traits can be guided to quickly reference the graphs whenever they come across characters in text to determine if they are “good” or “bad” (Fig. 10).

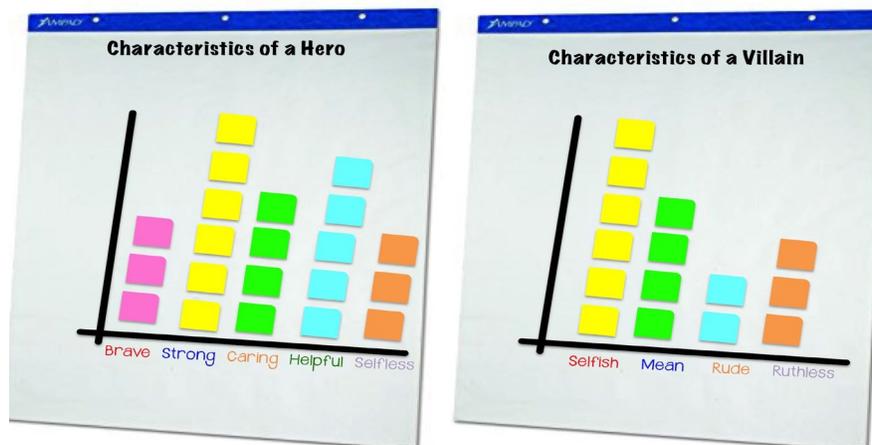


Figure 10: Example of a data visualization for younger students using Post Its on chart paper that can be used as a reference or to examine and draw conclusions.

## Data Visualization Tips for More Sophisticated Infographics

For lessons where the focus is on the data itself or where students are able to create more sophisticated infographics, lessons in data collection and/ or data visualization may be necessary. While this unit centers on infographics as a branch of

data visualization, here are some tips for the more statistical side of this topic keeping in mind that our audience is K-12 and not college:

- Graphs need to be appropriate for your data and purpose/ message
- Graph choice can influence/ manipulate audiences, so help students that struggle to justify why they chose a particular graph. If needed, do a lesson on “same data, different displays” and discuss.
- Drop the more technical jargon unless the standard calls for it. Discuss and explain the concept without spending too much time on the vocabulary and language of statistics that often accompany data visualizations. The benefits of using data visualizations within an infographic at the primary level does not stem from in depth statistical study.
- When students are using data that they collected (i.e. a survey), resolving sampling issues should be a sliding scale: the older the students, the less the teacher does and vice versa.
- Bias is definitely the teacher’s job to intercept (don’t let kids get too far on a project before talking to them about it- bad habits and are harder to break then never developing them in the first place.
- Data sets come in all shapes and sizes. Let students have as much freedom as you can so they own their learning.

## **Content Standards**

### *4th Grade Literacy*

CC. 1.3.4.C Describe in depth a character, setting or event in a story or drama, drawing on specific details in the text.

CC.1.2.4.B Refer to details and examples in text to support what the text says explicitly and make inferences.

CC. 1.3.4.C Describe in depth a character, setting or event in a story or drama, drawing on specific details in the text.

### *4th Grade Math*

CC.2.4.4.A.2 Translate information from one type of data display to another.

## Bibliography

Bicen, H. (2017). The Psychological Impact of Infographics in Education, Retrieved from <https://www.edusoft.ro/brain/index.php/brain/article/viewFile/733/821>

Dzulkifli, M. A., & Mustafar, M. F. (2013). The Influence of Colour on Memory Performance: A Review. *The Malaysian Journal of Medical Sciences : MJMS*, 20(2), 3–9.

Krauss, J. (2012). Infographics: More than Words Can Say. *Learning & Leading With Technology*, 39(5), 10-14.

Lindblom, K., Galante, N., Grabow, S., & Wilson, B. (2016). Composing infographics to synthesize informational and literary texts. *English Journal*, 105(6), 37-45. Retrieved from <https://search-proquest-com.libproxy.temple.edu/docview/1808331073?accountid=14270>

Mayer, R. E. (2001). *The Cambridge Handbook of Multimedia Learning*. New York: Cambridge University Press.

McCormick, M. R. (2017). Infographics work to effectively communicate the LCAP process. *Leadership*, 46(5), 32-34

Mitchell, A., Gottfried, J., Barthel, M., Shearer, E., (2016). The Modern News Consumer. Retrieved from <http://www.journalism.org/2016/07/07/pathways-to-news/>

Potter, M., Wyble, B., Haggmann, C.E., McCourt, E.S. (2014). Detecting meaning in RSVP at 13 ms per picture. Psychonomic Society, Inc

Trumbo, J. (1999). Visual Literacy and Science Communication. *Science Communication*, 20(4), pp. 409 - 425. Retrieved from <https://doi-org.libproxy.temple.edu/10.1177/1075547099020004004>

Wolfe, P., & Kleijwegt, D. (2012). Interpreting Graphic Versions of Shakespearean Plays. *The English Journal*, 101(5), 30-36. Retrieved from <http://www.jstor.org/stable/23269525>

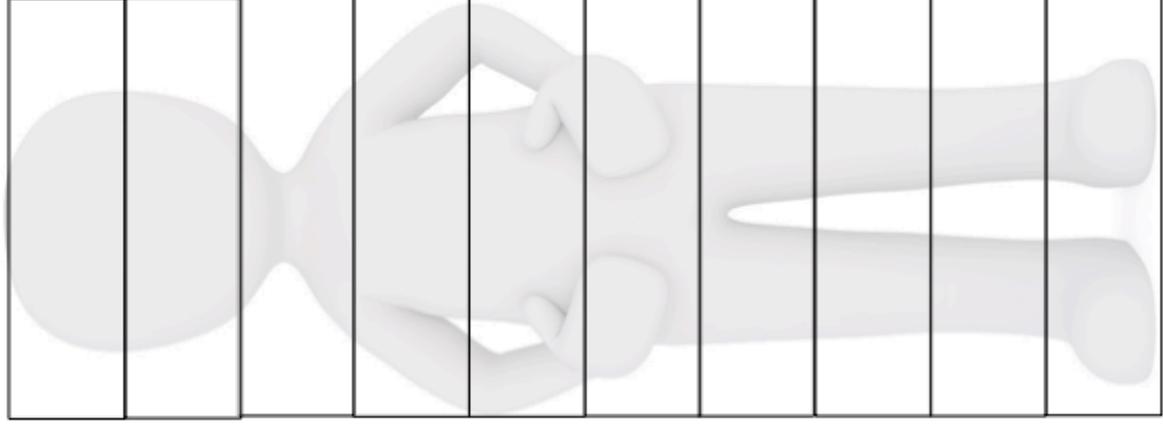
Appendix A: Blank Character Trait Infographic Sheet

Identify 3 character traits.  
 List and tally your evidence  
 Count up the tally marks for each character trait.  
 Color the character bars based on your tallies.

What kind of person was \_\_\_\_\_?

\_\_\_\_\_?

## Character Traits

Tallies  
 Number