

Weekly Enrichment Plan: Week of May 4

Grade: 8

| | Day 1 | Day 2 | Day 3 | Day 4 | Day 5 |
|--|--|--|--|--|--|
| Math (45 Minutes) | Topic: Volume Activity: Learn the Math (Volume of Rectangular Prisms Skill 8) | Topic: Volume Activity: Learn the Math (Area of Circles Skill 18) | Topic: Volume Activity: "Cylinder volume & surface area" | Topic: Volume Activity: Khan Academy Video: "Volume of a Cone" | Topic: Volume Activity: Find Volume of Cones (13.2 Reteach) |
| Physical Education (15 Minutes) | Physical Activity – <ul style="list-style-type: none"> • Go for walk/run • YouTube – Kidz Bop Dance • YouTube – Kids Workout | Physical Activity – <ul style="list-style-type: none"> • Go for walk/run • YouTube – Kidz Bop Dance • YouTube – Kids Workout | Physical Activity – <ul style="list-style-type: none"> • Go for walk/run • YouTube – Kidz Bop Dance • YouTube – Kids Workout | Physical Activity – <ul style="list-style-type: none"> • Go for walk/run • YouTube – Kidz Bop Dance • YouTube – Kids Workout | Physical Activity – <ul style="list-style-type: none"> • Go for walk/run • YouTube – Kidz Bop Dance • YouTube – Kids Workout |

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| <p>English Language Arts (60 Minutes)</p> <p>Reading Comprehension: Wit and Wisdom Module 4 Lesson 6 part 2; Text for read aloud is available in link</p> <p>Readworks: “The Fiction Partner Challenge” Text and comprehension questions (materials printed in packets).</p> <p>Grammar Practice: Spend 15 minutes working on grammar skills. Khan Academy</p> <ul style="list-style-type: none"> - If you are new to Khan Academy Grammar, start with the Introduction; if you have been working on grammar already, move on to another part of the course. <p>Follow it in order.</p> <p>Independent Reading: Read for 20 minutes from your novel, then select two activities from the Independent Novel Activity sheet in the printed packet to complete this week.</p> | <p>Reading Comprehension: Wit and Wisdom Module 4 Module 4 Lesson 7 part 1</p> <p>Readworks: “Long-Term Impact of the Zebra Mussel Invasion” Text and Comprehension Questions (Materials printed in packets).</p> <p>Vocabulary Practice: Spend 15 minutes working on vocabulary skills on Membean.</p> <p>Independent Reading: Read for 20 minutes from your novel, then select two activities from the Independent Novel Activity sheet in the printed packet to complete this week.</p> | <p>Reading Comprehension and Written Expression: Continue analyzing “The Mysterious Affair at Styles.” Today, plan your literary analysis using the graphic organizer, and write your analysis. Find a family member or friend to revise your draft. (You can send it to them through email). Make corrections and polish your writing for publication.</p> <p>Grammar Practice: Spend 15 minutes working on grammar skills. Khan Academy</p> <p>Independent Reading: Read for 20 minutes from your novel, then select two activities from the Independent Novel Activity sheet in the printed packet to complete this week.</p> | <p>Reading Comprehension and Written Expression: Middle School: Analyze Text/Topic. Materials printed in packet. Use today and tomorrow to complete this full assignment. Today, read the prompt and then the text “The Mysterious Affair at Styles.” Notice and note the author’s use of narrative techniques such as dialogue, descriptions, and the narrator’s thoughts. Use the provided graphic organizer to catch your notes.</p> <p>Vocabulary Practice: Spend 15 minutes working on vocabulary skills on Membean.</p> <p>Independent Reading: Read for 20 minutes from your novel, then select two activities from the Independent Novel Activity sheet in the printed packet to complete this week.</p> <p>Vocabulary Practice: Spend 15 minutes working on vocabulary skills on Membean.</p> <p>Independent Reading: Read for 20 minutes from your novel, then select two activities from the Independent Novel Activity sheet in the printed packet to complete this week.</p> <p>Independent Reading: Read for 20 minutes from your novel, then select two activities from the Independent Novel Activity sheet in the printed packet to complete this week.</p> |
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| Fine Arts <i>(15 Minutes)</i> | Art Read about Magical Realism and the artist Frieda Kahlo, & write a reflection. | Music Review the History of Jazz from week 4 & read one or more of the bios. | Art Create original art inspired by Magical Realism and Kahlo, and write a paragraph about your work. | Art Continue Photo Journal, weekly theme is “Viral”. |
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| Social Studies <i>(30 Minutes)</i> | The Message: Using Propaganda Read page 1 & 2 Highlight the questions to ask yourself after encountering or witnessing each propaganda technique. To learn more, click on this YouTube video: What is Propaganda https://www.youtube.com/watch?v=9ejTf0iu6yY | Gallery Walk: Look at the Gallery Walk Images for stations 1-4 Complete activities for stations 1-4 on pages 1 & 2 (Gallery Walk) | Gallery Walk: Look at the Gallery Walk Images for stations 5-8 Complete the activities for stations 5-8 on pages 3 & 4 (Gallery Walk) | What's The Message? You desperately want a new game but your parent/grandparent said, "no". You are reminded that you just got two new games last month. But this game is new and you must be the first of your friends to get it. |
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| Social Emotional Learning/ Reflection <i>(15 Minutes)</i> | Start an "Acts of Kindness" Challenge! Think about what kindness means to you and generate a list of Acts of Kindness that you could do. | Write about your Acts of Kindness for the day. | Write about your Acts of Kindness for the day. | Write about your Acts of Kindness for the day. Also, write about how it felt to do the Act of Kindness, and how it made the person that you were kind to feel. What can you do to help others be kind? |
| Student Daily Check-Off <i>(Check off each activity that you completed)</i> | • Math • English • Physical Ed. • Fine Arts • Science • Social Studies • SEL/Reflection | • Math • English • Physical Ed. • Fine Arts • Science • Social Studies • SEL/Reflection | • Math • English • Physical Ed. • Fine Arts • Science • Social Studies • SEL/Reflection | • Math • English • Physical Ed. • Fine Arts • Science • Social Studies • SEL/Reflection |

Suggested Daily Schedule: Grades 6-8

| Time | Activity |
|----------------------------|---|
| 8:00 – 9:00 am | Wake up, make your bed, eat breakfast and get ready for an awesome day! |
| 9:00 – 9:45 am | Mathematics |
| 9:45- 10:00 am | Physical Activity |
| 10:00– 10:45 am | English Language Arts – Reading Comprehension |
| 10:45 – 11:00 am | 15-Minute Break |
| 11:00 – 11:15 am | Art |
| 11:15 am – 12:00 pm | English Language Arts - Novel |
| 12:00 – 1:00 pm | Lunch |
| 1:00 – 1:30 pm | Science |
| 1:30-1:45 pm | 15-Minute Break |
| 1:45-2:15 pm | Social Studies |
| 2:15-2:30pm | Social-Emotional Learning/Reflection |

Family Suggestions

| Parent Suggestions | Student Suggestions |
|---|---|
| <p>How can I support my student as a learner outside of school?</p> <ul style="list-style-type: none"> • Familiarize yourself with your child's learning calendar. • Encourage your child to do their best when completing tasks and assignments. • Contact your child's teacher or the district's homework hotline when you or your child have questions or need feedback. • Support your child in starting the daily work early in the day. Waiting until the late afternoon or evening to start work adds unnecessary stress and creates missed opportunities for collaboration and feedback. • Remind your child to take frequent breaks to stay focused. • Consider designating a dedicated workspace to maximize time on task and facilitate learning. | <p>How can I continue learning outside of school?</p> <ul style="list-style-type: none"> • Complete work on your suggested learning calendar. • Put in your best effort when completing tasks and assignments. • Ask an adult to contact your teacher when you need help. Teachers are available via e-mail, your school's online learning program or on the district's homework hotline. • Let your teacher know if you have access to a phone or computer. <p>How can I stay organized?</p> <ul style="list-style-type: none"> • Start your work early. Waiting until the late afternoon or evening to start work adds unnecessary stress and creates missed opportunities for collaboration and feedback. • Take short breaks to increase focus and stay motivated to complete tasks on time. • Find a quiet place to complete your work. |

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| Individual Support | <p>Individualizing Supports</p> <ul style="list-style-type: none"> • See "Individualizing Supports for Students" for more information on how to support your child at home with these assignments. • Additional materials are available online and at school meal sites: <ul style="list-style-type: none"> • "Specially Designed Instruction for Students with IEPs" packets with instructional routines that can be used at home to address students' IEP goal areas. • Materials and resources for students with life skills needs and significant disabilities will also be available. |
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| <p>English Language Learners</p> <p>Enrichment Packet</p> <ul style="list-style-type: none"> • Daily language learning is important! The following links/resources are available for students to access daily. • ¡El aprendizaje diario de idiomas es importante! Los siguientes enlaces/recursos están disponibles para que los estudiantes accedan al aprendizaje diario de idiomas. • Kujifunza lugha ya kila siku ni muhimu! Viungo vifuatavyo/rasilmali vinapatičana kwa wanafunzi kupata mafunzo ya lugha ya kila siku. • दैनिक भाषा सिक्न महत्वपूर्ण हो! तलका लिंकहरु / शोतहरु विद्यार्थीहरुको लागि दैनिक भाषा सिक्ने पहुँचको लागि उपलब्ध छ त! | <p>مهم ! ادرو ابط / الموارد التالية متاحة للطلاب لوصول إلى تعلم اللغة البوكمي .</p> |
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Individualizing Support for Students in Grades 6-12

For Students Who Struggle with Reading

Before Reading:

- For content area reading (nonfiction), provide some background information about the topic addressed in the text. The scholar can go online to look up information on the topic. Have scholar find resources in his/her preferred learning modality (videos, simplified text, activities) and summarize the new information learned.
- Look through the reading passage or book and look at pictures, graphics, and text features such as headings, captions, bolded words, etc. Discuss what you see and make a prediction about what you think will happen. During and after reading, adjust the prediction based on what you read.
- Look through the reading passage or book and identify difficult or unusual words. Have scholar practice decoding these words (reading them aloud). Provide meanings for these words. Create a vocabulary dictionary of these words to refer to later.

During Reading:

- **Accommodations:** Allow scholar to read aloud if they need to. Provide an audio recording of the text if available.
- **Chunking:** Read one paragraph or section at a time, and check for understanding by asking student to summarize or paraphrase what was read before moving to the next section.
- Make real-world connections (does the book remind you of something in your life? Another book, a movie, etc.)
- Stop and ask questions while reading. Ask questions with answers that can either be found in the reading or could be predictions about what might happen after the passage/story ends.

After Reading:

- For literature/fiction reading, have your scholar summarize what they read. Use the “5 W’s”
 - Who was the story/passage about?
 - What was the story/passage about? Make sure to include the main idea, some details, and how the story/passage ended
 - What did the character(s) learn?
 - What would be a good title for the story/passage? If one is provided already, what would be a different title you would give the story/passage?
 - When did the story/passage occur? This would be most important for informative and historical passages
 - Where did the story/passage occur?
 - Why? This can be many things, why did a specific character act in a certain manner? Why was a decision made? etc.
 - How? If there was a problem discussed ask how your scholar would have solved the problem differently, or how did that make you feel?
- For nonfiction reading/content area reading, have your scholar summarize what he/she has learned from the text and how he/she would apply the learning to real life.
- Allow an “open book” policy. Make sure that the scholar shows exactly where in the text he/she is getting the information to answer whatever question has been posed.

For Students Who Struggle with Written Assignments

- Have scholar dictate assignments into a phone's "notes" app or computer with speech-to-text technology. Most speech-to-text will also respond to commands to add punctuation (by saying "comma," "period," etc.). Student can then print out their writing, or copy it into their own handwriting.
- Write one sentence at a time, then have someone read it aloud to make sure it makes sense.
- Provide examples of quality writing that meets the task criteria.
- Accept a written assignment that is shorter than what is expected, as long as the task criteria are met.

For Students Who Struggle with Math Assignments

- Find a video of someone completing a similar task and have scholar watch it multiple times. Excellent resources for this are YouTube, Khan Academy, and LearnZillion.
- **Talk about math:** Have student explain a problem and its solution in mathematical terms. Have student teach a skill to another student. If they can teach it, they understand it.
- **Accommodations:** For tasks that require problem-solving, allow use of a calculator. Teach student how to use the calculator to accurately solve problems with multiple steps. Also provide access to anchor sheets for math procedures that may not be memorized, such as formulas.
- **Chunk assignments for easier completion/to ease frustration:** If there are 20 math problems to solve, complete 10 and take a break to move around. After the break go back and finish the other 10
- **Fractions:** use round food items to discuss fractions. Example: Cut a frozen pizza into 8 pieces and talk about pieces individually (1 piece is $1/8$) or in parts together (2 pieces is $2/8$ or $\frac{1}{4}$). Compare and contrast pieces of different sizes.
- **Graph paper:** use graph paper to organize work and problems, and to model mathematical situations visually.
- **Manipulatives:** any small item can be used as a manipulative to help with basic facts. Examples: coins, blocks, pieces of paper cut into smaller pieces. There are also virtual manipulatives online (Google "virtual math manipulatives").
- **Measurement, Money, and Time:**
 - Bake something and have your child measure out all of the ingredients for the recipe.
 - Have your child measure different items around the house and compare the sizes (What is bigger? What is smaller? How many ___ does it take to measure the couch?)
 - Take a walk outside for a movement break. While walking have them time how long it takes to go for the walk and get back home. Pick something outside like houses and have them count how many they pass while walking. You can also practice skip counting while you walk (example: for each step you take count by 2s, or 5s, or 10s).
 - Create a store using items around your house. Label each item with a dollar amount and have your child "shop" in your store or have them act as the cashier and make change.
 - Create a schedule for the day with times attached. Start with times on the hour and then get progressively more difficult with times on the half hour and quarter hour. Give a specific time they can play a game or use tech. This will help work on math skills and will also help keep your child focused on different tasks throughout the day!
- **Reference materials:** create a number line, hundreds chart, or anchor charts (worked examples) to help with math calculation, counting, and problem-solving.
- **Patterns:** use blocks or toys of similar colors to make a pattern. Example: 3 red Legos, 2 blue Legos, 3 yellow Legos, repeat.
- **Sorting:** Gather a group of toys and have your child sort them based on similar attributes (color, size, shape, etc.). Do the same with a set of books and have your child sort them based on fiction vs. nonfiction, type of book, etc.

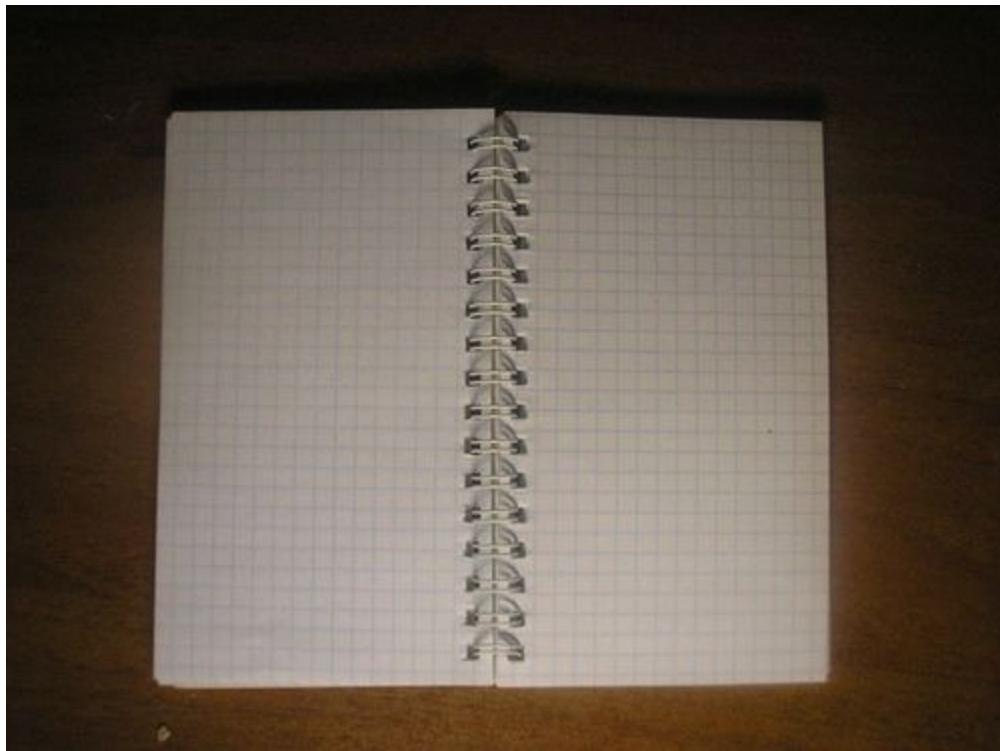
- **Make it fun!** Practice math skills using games and things you might already have around the house and turn real-life activities into mathematical opportunities.
 - A deck of cards: each person draws 2 cards and then adds, subtracts, or multiply the numbers reflected on the cards.
 - Dice: can be used the same way as a deck of cards to work on basic facts or create multi-digit problems to solve.
 - Yahtzee: basic addition
 - Connect Four, Othello: problem solving, and strategic thinking
 - Puzzles: perfect for working on spatial awareness, which is key to geometry
 - Monopoly: have your child be the “banker” to work on money skills
 - Battleship: graphing coordinates
 - Uno: use numbers on cards to create calculation problems

For Students Who Struggle with Focus, Attention, and/or Study Skills

- Given scholar very clear written (or visual) directions of what to work on and what successful completion of the task looks like. Have scholar self-monitor whether or not he/she has completed all parts of the task.
- Use a timer, starting with a very brief amount of time (even 5-10 minutes is ok). After the timer “beeps,” provide student with a brief break (5 minutes) before continuing. Work to increase the amount of time for each work interval, up to 25 minutes.
- Provide a reward, such as a sticker or carrot, for every successful interval of on-task behavior.
- Only give one assignment or task at a time, but also provide scholar with a calendar or daily schedule to refer to so it is clear what to expect next.
- Have older students model study skills for younger children.

The Fiction Partner Challenge

by W.M. Akers



Brian looked at his teacher, Mrs. Applegate. He looked at the girl sitting next to him, whose name he was pretty sure was Stacey. He looked back at his teacher and then squeezed his face into the most horrified expression he could manage.

"What do you mean we're going to write a story together?"

"Just what I said," said Mrs. Applegate, whose eyes said she was tired of having that discussion. "You write one sentence, then Stacey writes one sentence. In fifteen minutes, you have a two-page story, and you've both learned something about teamwork."

"What if I don't care about teamwork?"

"This is school, Brian. You're required to care about teamwork."

"Do I get a say in this?" asked Stacey. "Because I'm opposed to it as well."

"Just listen to her!" said Brian. "She says stuff like 'opposed to' and 'as well.' I don't want to write with anybody who talks like that. She'll probably make us write a story about ponies who have a tea party and argue about grammar."

"Well I bet you're going to want to write about ninjas who ride around on robots and fight other ninjas who ride on dinosaurs."

"That is a pretty awesome idea."

"Forget it. We're not doing this."

"Uh, Stacey?"

"What?!"

"Mrs. Applegate left. I think we are doing this."

Stacey took her glasses case out of her book bag, handling it like it was as delicate as TNT. She unfolded her glasses and pushed them onto her nose, hoping her precise movements would convey how dissatisfied she was with the state of education in America. Responding to her precision, her tidy clothes and good posture, Brian slumped as low as he could and scratched his knee through the hole in his jeans.

"This stinks," he said.

"Yes. Yes, it does."

She took out a pencil, a ruler and a sheet of paper. Brian's jaw dropped as he watched her draw a border on the page labeled:

Stacey Whitfield and Brian Cantor

Mrs. Applegate's Class

Wilmington Elementary

Eighth Grade

"I haven't seen anybody make a heading on a paper since third grade," he said. "Are you a robot?"

"Why do you want to know? So you can put me in some stupid science-fiction story?" Before he could answer, she put up her hand to silence him. "Forget it. We need to get to work. What are we going to call this masterpiece?"

"I liked your idea. We'll call it, 'The Ninjas That Rode Around On Robots And Fought Other Ninjas Who Rode Around on Dinosaurs.' Whoa! Are you really writing that?"

"No."

Stacey pursed her lips as she wrote out the title in graceful cursive font.

Autumn In Vermont

"That's a terrible title."

"It's a neutral title. What we do in the story will either make it great or terrible. I'll get us started with a little scene setting."

She wrote: *Gold, crimson, orange and brown-the leaves of the forest glimmered in the crisp morning*

sun.

"Now you write a sentence. Don't screw it up."

"I don't see how I could possibly make that worse."

Brian wrote: *Gold, crimson, orange and brown is also what the ninjas were wearing, to camouflage themselves in the trees.*

"I thought we weren't writing about ninjas," said Stacey.

"I know. I fixed that."

"Well that's not even how you spell camouflage."

"How do you spell it?"

"I don't know, but that's not right. Go look it up." While Brian fumbled with the dictionary, Stacey quickly scratched out another sentence, trying to make it as long as possible.

Far below the ninjas, newlyweds Glenda and Bertram walked arm-in-arm, looking so happy and content and joyous that the ninjas hearts melted, convincing them to leave the woods forever and never ever ever return-but what the ninjas didn't know, and the husband didn't know either, was that the wife was hiding a terrible secret.

"This is lousy writing," said Brian.

"Excuse me?!"

"You say that they're happy and content and joyous. Those all mean basically the same thing. It's redundant."

"I like adjectives."

"Then you must like bad writing, too."

"Be quiet and take your turn."

Brian took the paper, scowled at what Stacey had written, and set about fixing it.

The secret was that Glenda's name wasn't Glenda, because nobody is named Glenda, and also that she was a robot who was programmed to kill anything that tried to kiss her-which was a problem, because Bertram was leaning in for a big ol' smooch, which would put him out of the misery anyone would feel if their name was something as stupid and awful as Bertram.

"At least his name isn't Brian," Stacey said. She ripped the paper away from her partner, clutched the pencil in her fist, and scrawled, her handwriting getting sloppier with every word.

Luckily, Bertram (whose name was much better than something idiotic like Brian) was a master robot scientist and had no trouble disarming his beloved's ticking time bomb, right before embracing her and delivering the most exquisite, fantastic, superb, amazing, magnificent kiss of their entire lives.

Brian wrote: *It was also the last kiss of their entire lives, because just when they were finishing their disgusting kiss, Bertram and "Glenda" were both run over by a herd of stampeding wooly mammoths that were being chased by dinosaurs and a bunch of flying sharks and some pirates.*

Stacey wrote: *The whole herd of moronic creatures kept stampeding, right off a cliff where they fell and died, much to the amusement of the group of picnicking girls on the rock above, a trio of sisters who liked to solve mysteries in their spare time, and who were currently working on the mystery of The Boy Who Was So Immature He Couldn't Even Write A Simple Story.*

Brian wrote: '*The only real mystery,' said one of the girls as she snacked on something gross like cucumber sandwiches or ants on a log, 'is how anybody could think that boy was immature, since the stories he writes are totally awesome and have lots of different kinds of robots.'*

Stacey wrote: '*Be quiet, Hilda,' said one of her sisters (who only kept Hilda around because they felt bad about how she was wrong all the time) 'and listen: This boy is so immature, so wrong about everything, and so totally impossible to deal with that if he doesn't be quiet and follow the teacher's instructions, we're both going to get F's and the whole world is going to end."*

With an evil grin, Brian took the pencil and began to write: *And then, before Hilda, who was actually right about everything, could even finish her awful snack, the entire world blew up and the story ended forever.*

THE END!!!!!!!!!!!!!!

As Mrs. Applegate picked up everyone's stories, Stacey squeezed her fists so hard her fingernails made imprints in her palms. Sweat poured down her neck as their teacher read, and she braced herself for the first F of her entire academic career. And then she heard something strange-a sound so unfamiliar that it took her a few moments to recognize: laughter.

Mrs. Applegate's shoulders were still shaking as she set the paper down onto Stacey's desk. She had written:

This is a laugh riot! A+!

Name: _____ Date: _____

1. What does Mrs. Applegate want her students to learn something about by writing a story together?

- A. writing fiction
- B. patience
- C. teamwork
- D. manners

2. Who are the two main characters in this text?

- A. Bertram and Glenda
- B. Brian and Stacey
- C. Brian and Mrs. Applegate
- D. Stacey and Mrs. Applegate

3. In the passage, both Brian and Stacy object to the assignment from Mrs. Applegate. Based on this evidence, what conclusion can be made?

- A. They work on projects together every day.
- B. Neither wants to work with the other.
- C. They're looking forward to working together.
- D. They won't have to work together at all.

4. In the passage, Stacey tells Brian "don't screw it up" when it's his turn to write a sentence. Based on this evidence, what conclusion can be made?

- A. Brian does not trust Stacey's writing.
- B. Brian and Stacey are working well together.
- C. Stacey does not trust Brian's writing.
- D. Brian and Stacey have the same story ideas.

5. What is this story mainly about?

- A. two students writing a story together
- B. how Mrs. Applegate runs her classroom
- C. ninjas and robots being part of a wedding
- D. the best way to name a story's characters

6. Read the following sentences: "You say that they're happy and content and joyous. Those all mean basically the same thing. It's redundant." As used in this sentence, what does "redundant" mean?

- A. simple
- B. useful
- C. repetitive
- D. necessary

7. _____ Brian and Stacy don't want to work together, they still have to complete the assignment.

Choose the answer that best completes the sentence below.

- A. In contrast
- B. Especially
- C. Because
- D. Even though

8. What does Mrs. Applegate think about the story Stacey and Brian wrote together?

9. How does Brian feel about working with Stacey on the story? Use evidence from the text to support your answer.

10. Did Brian and Stacey make a good story-writing team? Use evidence from the text

to support your argument.

Middle School: Independent Novel Activities for May 4 – May 8

Directions: Choose 2 to complete this week

1. **Dear Classmate:** Email, text, or call a friend. Tell them what you are reading and details about characters, plot, and setting – both time and place.
2. **Write a postcard to the author or one of the characters:** Take on the voice of your favorite or least favorite character in the book, and write to the author or another character about something that has occurred in the novel thus far. Are you happy about it? Sad? Confused? Remember that a postcard is not very large. Make the most of the words and sentences that you choose to write. Add in descriptive details and try to capture the tone of the character.
3. **Billboard:** While you are probably not that far yet in your novel, think about some of the most compelling moments thus far. Can you capture that in images either through your own drawings or pictures that you find online or in magazines? Make a billboard advertisement for your book.
4. **Write a Haiku about the novel:** Remember the rules for a Haiku: The entire poem consists of three lines and 17 syllables. The first line is 5 syllables, the second 7 syllables, and the third is 5. Haikus typically connect to nature.
5. **Fictional Friends:** Who of the characters would you want as your friend? Write a journal response identifying the character and reasons you would want him or her as your friend.
6. **What if:** Write about or call a friend and talk about how the story would differ if the characters were something other than they are.
7. **Time Machine:** instead of you traveling into the book, write a scene where the characters travel out of the book into today.



Long-Term Monitoring of the Hudson River

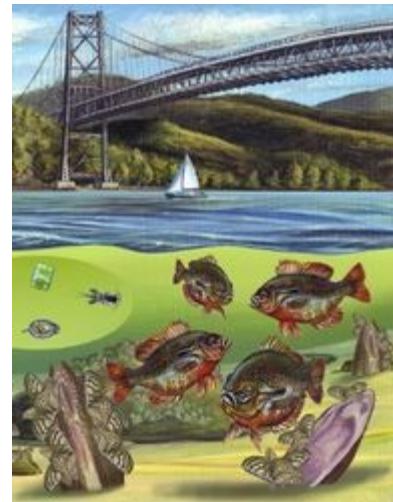
by American Museum of Natural History
This article is provided courtesy of the American Museum of Natural History.

A puzzling reversal

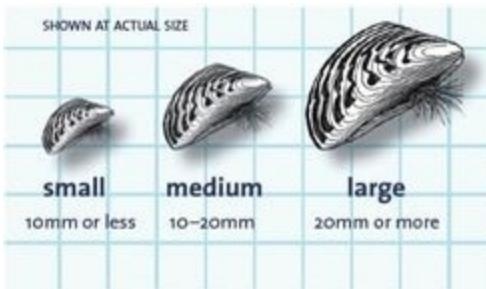
In 2005, 14 years after the first sighting of zebra mussels in the Hudson River, Cary Institute scientists noticed an unexpected change in the river: zooplankton had returned to the same levels as before the invasion. Why weren't the zebra mussels eating as much zooplankton?

Then the scientists observed a change in the zebra mussels they were collecting from the river. Zebra mussels are grouped into three sizes: small (less than 10 mm), medium (10-20 mm), and large (more than 20 mm). While there were still many zebra mussels in the Hudson River, the overall number of zebra mussels was slightly declining, and they were on average much smaller. Populations of the largest - or oldest mussels - were declining greatly. Zebra mussels can live six or seven years, but now it seemed that most were dying after only one or two years. Adult zebra mussels had less than one percent chance of surviving a given year. The impact of the zebra mussel invasion was changing.

If there were fewer large zebra mussels, it made sense that there was more zooplankton. That's because large zebra mussels feed on bigger food particles like zooplankton. Smaller zebra mussels can eat only smaller particles like phytoplankton and bacteria.



WHAT HAPPENS NEXT? What's the future of the Hudson River ecosystem now that zebra mussels have arrived? Only time and observation will tell.



ZEBRA MUSSEL AVERAGE SIZES

These new effects rippled through the food web. As zooplankton rebounded, so did native mussels and clams. Scientists anticipate some fish species will rebound too as their food supply increases. Scientists don't know exactly what caused the decline in large zebra mussels, but they do know blue crabs were eating some of them.

More time, more data, more answers... and more questions

By monitoring several aspects of the Hudson River over many years, Cary Institute scientists are beginning to answer their original question: How might a zebra mussel invasion affect the Hudson River ecosystem? Early on during the invasion, zebra mussels survived, thrived, and had a huge impact on the ecosystem's food web - just as scientists had predicted.

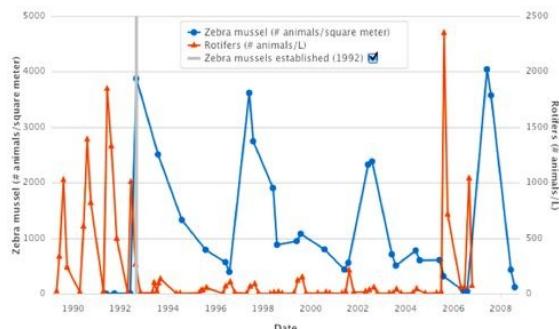


Blue crabs are a bottomdwelling predator and a chief consumer of bivalves and other crustaceans, including zebra mussels.

changes to the Hudson River ecosystem.

Almost 20 years later, the number of zebra mussels has declined overall. And parts of the ecosystem, such as the number of zooplankton, native mussels, and clams, have started to increase. But is this the end of the story? Or have we just seen the first two stages of an invasion that might have three or four stages, or more?

As their data grows, the scientists are able to track changes in the river - whether from pollution, weather, sea level rise, invasive species, or human activity - and to pose new questions. This broad approach also puts Cary scientists in a unique position to investigate future



ANALYZE THIS This graph shows the amounts of rotifers (or zooplankton, shown with an orange line and triangles) and zebra mussels (shown with a blue line and circles) in the Hudson River over 20 years. Look at what happens in the last five years of the graphed data: what do you think is happening to the ecosystem?

Name: _____ Date: _____

- 1.** What unexpected change did scientists notice in the Hudson River in 2005?
 - A. Zooplankton had returned to the same levels as before the zebra mussel invasion.
 - B. The total number of zebra mussels in the Hudson River had returned to almost zero.
 - C. The zebra mussels in the Hudson River had stopped eating all types of plankton.
 - D. The average size of the plankton in the Hudson River was decreasing.

- 2.** What caused the number of zooplankton in the Hudson River to increase?
 - A. the decline in the number of phytoplankton
 - B. the decline in the number of native mussels and clams
 - C. the decline in the number of small zebra mussels
 - D. the decline in the number of large zebra mussels

- 3.** Read these sentences from the text.

"As zooplankton rebounded, so did native mussels and clams. Scientists anticipate some fish species will rebound too as their food supply increases."

What conclusion can you draw about zooplankton based on this evidence?
 - A. Zooplankton eat native mussels, clams, and some fish species.
 - B. Zooplankton are similar organisms to certain mussels and clams.
 - C. Zooplankton are an important food source for native mussels, clams, and fish.
 - D. Zooplankton are a more important food source for most species than phytoplankton.

- 4.** What relationship could scientists track in order to see whether or not blue crabs were the main reason that large zebra mussels have declined?
 - A. the relationship between the size of zebra mussels and the size of blue crabs over one year
 - B. the relationship between the average numbers of large zebra mussels and blue crabs over time
 - C. the relationship between the average numbers of blue crabs and phytoplankton over time
 - D. the relationship between the size of blue crabs and the size of zooplankton over one year

5. What is the main idea of this text?

- A. The number of large zebra mussels in the Hudson River has gone down in recent years, but scientists predicted that change and are not surprised by it.
- B. The number of small zebra mussels in the Hudson River has unexpectedly gone down in recent years, so scientists have decided to change the focus of their studies on the Hudson River.
- C. The number of zooplankton in the Hudson River has unexpectedly gone up in recent years, so scientists expect the number of zebra mussels to increase as well.
- D. The number of large zebra mussels in the Hudson River has unexpectedly gone down in recent years, but scientists will continue to study the river to understand the invasion's changing impact.

6. Read these sentences from the text.

"These new effects **rippled through the food web**. As zooplankton rebounded, so did native mussels and clams. Scientists anticipate some fish species will rebound too as their food supply increases."

What does the author mean by the phrase "**rippled through the food web**"?

- A. did not impact other parts of the food web
- B. had effects on other parts of the food web
- C. caused harm to other species in the food web
- D. completely changed the relationships in the food web

7. Choose the answer that best completes the sentence.

_____ zebra mussels can live six or seven years, now it seemed that most were dying after only one or two years.

- A. Since
- B. Because
- C. Although
- D. For example

- 8.** What happened to different living things in the Hudson River ecosystem almost 20 years after the zebra mussel invasion? Make sure to mention the changes in at least three populations in your answer.

- 9.** What does the number of zooplankton in the Hudson River show about the large zebra mussels in the river? Use evidence from the text to support your answer.

- 10.** One question that scientists have not yet answered is what caused the number of large zebra mussels to decline. How might tracking different parts of the ecosystem over a long time help scientists to answer this question?

The Short-Term Impact of the Zebra Mussel Invasion

by American Museum of Natural History
This article is provided courtesy of the American Museum of Natural History.



An estuary is a dynamic body of water where freshwater and saltwater meet. The Hudson River is more than a river: it's a tidal estuary, where the saltwater from the Atlantic Ocean meets the freshwater running off the land.

Phytoplankton and zooplankton populations drop sharply

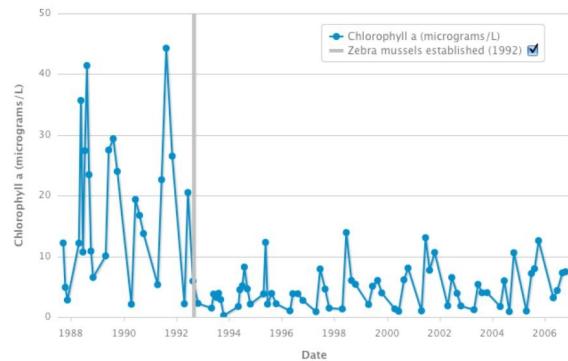
Before the invasion, scientists developed computer models to predict the effect of the zebra mussels. But they were still surprised by what happened. By 1992, there were so many zebra mussels, scientists estimate they were filtering a volume of water equal to all of the water in the estuary every 1-4 days during the summer. In the years right after the invasion, phytoplankton fell by 80 percent. Zooplankton (which eat phytoplankton) declined by half. And the smallest zooplankton (called micro-zooplankton), fell by about 90 percent.

By 1994, scientists hypothesized that zebra mussels were responsible for these changes. The mussels were filtering huge amounts of phytoplankton from the water. Less phytoplankton meant less food for zooplankton, so their numbers were shrinking too. Competition was taking place and the zebra mussels seemed to be winning.

The food web changes

In the next few years, the data supported their hypothesis. Scientists made other findings too. They observed that the decrease in phytoplankton and zooplankton had effects that rippled throughout the

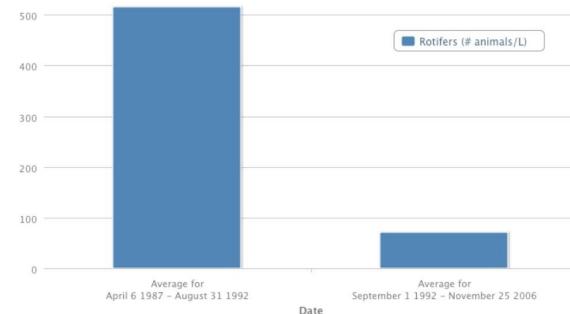
Zebra mussels first appeared in the Hudson River in May 1991. Within a year, scientists estimated their numbers had reached 500 billion, an enormous amount! In fact, if you had a huge balance and put zebra mussels on one side, they would outweigh all the other consumers in the ecosystem combined: all the fish, zooplankton, worms, shellfish, and bacteria.



WATCH WHAT HAPPENS This graph shows the change in the amount of phytoplankton (represented by the blue line) over 18 years in the Hudson River. (The amount of phytoplankton is measured by the amount of chlorophyll they contain.) Look at the gray line above: there's a big change in the blue line when the zebra mussels first arrived in the river. What do you think happened?

food web. With less food available, there were fewer - and smaller - fish in the open river. The population of native mussels, which also eat plankton, shrank from more than one billion to almost none.

But some populations increased - likely due to the change in the river's turbidity, or cloudiness. With far less phytoplankton, the water got clearer. During the summertime, visibility went from 3-4 to 4-8 feet. Since sunlight reached deeper into the water, rooted aquatic plants such as water celery increased by up to 40 percent. Populations of fish living in these shallow weeds increased. Another surprising result was that dissolved oxygen in the river fell by about 15 percent. The drop wasn't enough to endanger any aquatic animals, but it was still a huge amount of oxygen. Scientists think the enormous zebra mussel populations were consuming a lot of oxygen very quickly. At the same time, the mussels were removing the phytoplankton that produce oxygen.



A BIG CHANGE This bar graph shows the change in the average number of rotifers (a type of zooplankton) in the Hudson River before and after the zebra mussels became established in 1992.

Questions about the long-term impact

What happens once an invasive species becomes established in an ecosystem? The invader's population might evolve to adapt to its new home. Or native species might evolve to better tolerate or even feed on the invader. Or other species might arrive that are more resistant to the effects of the invasion. Once scientists had a clear picture of the invasion's immediate impact, they started to wonder about long-term consequences like these.



ALONG THE RIVER The Hudson River flows 315 miles (507 km) through New York with over 1,000 cubic feet of water passing by every second (or 600 cubic meters per second). Scientists want to understand how the river changes over time and space.

Name: _____ Date: _____

1. How many zebra mussels were there in the Hudson River within a year of their first appearance?

- A. 500 billion
- B. 500 million
- C. 500 thousand
- D. 500

2. This text explains a cause-and-effect pattern in the Hudson River ecosystem that began with the zebra mussel invasion. What effect did the zebra mussels have on the phytoplankton in the Hudson River?

- A. The number of phytoplankton in the river rose by a little.
- B. The number of phytoplankton in the river fell by a little.
- C. The number of phytoplankton in the river rose by a lot.
- D. The number of phytoplankton in the river fell by a lot.

3. Phytoplankton are one of the most important parts of the food web in the Hudson River. What evidence supports this conclusion?

- A. The population of phytoplankton dropped sharply soon after zebra mussels invaded the river.
- B. The decrease in phytoplankton caused a decrease in the river's zooplankton, fish, and native mussel populations.
- C. The decrease in phytoplankton meant that the river's turbidity, or cloudiness, decreased.
- D. Zebra mussels caused oxygen levels in the river to drop, partly by removing the phytoplankton that produce oxygen.

4. Which population was helped by the invasion of the zebra mussels?

- A. phytoplankton
- B. zooplankton
- C. water celery
- D. native mussels

5. What is the main idea of this text?

- A. In the years right after the invasion, zebra mussels evolved and adapted to the Hudson River ecosystem.
- B. In the years right after the invasion, zebra mussels caused a number of changes in the Hudson River ecosystem and food web.
- C. In the years right after the invasion, zebra mussels did not have a major impact on the Hudson River ecosystem or food web.
- D. At first, zebra mussels did not have any impact on the Hudson River ecosystem, but their impact increased over time.

6. Read these sentences from the text.

"In the years right after the invasion, phytoplankton fell by 80 percent. Zooplankton (which eat phytoplankton) **declined** by half. And the smallest zooplankton (called microzooplankton), fell by about 90 percent."

Based on these sentences, what does the word "**decline**" most nearly mean?

- A. to drop in number
- B. to fall over
- C. to increase
- D. to stay the same

7. Choose the answer that best completes the sentence.

With far less phytoplankton, the water got clearer. _____, rooted aquatic plants such as water celery increased by up to 40 percent.

- A. In contrast
- B. However
- C. As a result
- D. Similarly

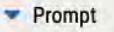
- 8.** What are two populations that decreased as an immediate result of the zebra mussel invasion?

- 9.** One direct effect of the zebra mussel invasion was a decrease in the cloudiness of the water. How did this affect species in the Hudson River ecosystem?

- 10.** Once scientists understood the short-term impact of the zebra mussel invasion, they started to wonder about the invasion's long-term impact on the ecosystem. Why might the Hudson River ecosystem look different many years after the zebra mussel invasion than it did just a few years after the invasion? Use evidence from the text to support your answer.

Week 5 Writing Assignment for Middle School Information Skills: Analyze Text/Topic

Directions: Use two days to complete this assignment. It is listed on your calendar for Thursday, May 7 and Friday, May 8. On the first day, read the prompt and then the text “The Mysterious Affair at Styles.” Notice and note the author’s use of narrative techniques such as dialogue, descriptions, and the narrator’s thoughts. Use the provided graphic organizer to catch your notes. On the second day, continue analyzing “The Mysterious Affair at Styles.” Plan your literary analysis using the graphic organizer and write your analysis. Find a family member or friend to revise your draft. (You can send it to them through email). Make corrections and polish your writing for publication.

 **Prompt**

Christie uses a number of narrative techniques including dialogue, descriptions, and the narrator's thoughts to create suspense about what is to come. Write a two-paragraph Literary Analysis examining the narrative techniques in the selection. Develop an analysis of the text including examples.

1. **Read** the selection and identify several places where narrative techniques help to create suspense.
2. **Plan** a Literary Analysis. Decide which examples to use and how you will explain them.
3. **Write** your Literary Analysis.

[Video Link](#) Optional: Add a video link



Published in 1920, *The Mysterious Affair at Styles* is the first novel by British writer Agatha Christie. The excerpt below is from the first chapter of the book. The narrator, Arthur Hastings, is staying as a guest at the English country home of Emily Inglethorp, a wealthy old woman. Mrs. Inglethorp has just fired her caretaker, Evelyn Howard, for making negative comments about Emily's husband, Alfred.



The Mysterious Affair at Styles

by Agatha Christie

Miss Howard entered. Her lips were set grimly together, and she carried a small suit-case. She looked excited and determined, and slightly on the defensive.

"At any rate," she burst out, "I've spoken my mind!"

"My dear Evelyn," cried Mrs. Cavendish, "this can't be true!"

Miss Howard nodded grimly.

"True enough! Afraid I said some things to Emily she won't forget or forgive in a hurry. Don't mind if they've only sunk in a bit. Probably water off a duck's back, though. I said right out: 'You're an old woman, Emily, and there's no fool like an old fool. The man's twenty years younger than you, and don't you fool yourself as to what he married you for. Money! Well, don't let him have too much of it. Farmer Raikes has got a very pretty young wife. Just ask your Alfred how much time he spends over there.' She was very angry. Natural! I went on, 'I'm going to warn you, whether you like it or not. That man would as soon murder you in your bed as look at you. He's a bad lot. You can say what you like to me, but remember what I've told you. He's a bad lot!'"

"What did she say?"

Miss Howard made an extremely expressive grimace.

"'Darling Alfred'—'dearest Alfred'—'wicked calumnies' —'wicked lies'—'wicked woman'—to accuse her 'dear husband!' The sooner I left her house the better. So I'm off."

"But not now?"

"This minute!"

For a moment we sat and stared at her. Finally John Cavendish, finding his persuasions of no avail, went off to look up the trains. His wife followed him, murmuring something about persuading Mrs. Inglethorp to think better of it.

As she left the room, Miss Howard's face changed. She leant towards me eagerly.

"Mr. Hastings, you're honest. I can trust you?"

I was a little startled. She laid her hand on my arm, and sank her voice to a whisper.

"Look after her, Mr. Hastings. My poor Emily. They're a lot of sharks—all of them. Oh, I know what I'm talking about. There isn't one of them that's not hard up and trying to get money out of her. I've protected her as much as I could. Now I'm out of the way, they'll impose upon her."

"Of course, Miss Howard," I said, "I'll do everything I can, but I'm sure you're excited and overwrought."

She interrupted me by slowly shaking her forefinger.

"Young man, trust me. I've lived in the world rather longer than you have. All I ask you is to keep your eyes open. You'll see what I mean."

The throb of the motor came through the open window, and Miss Howard rose and moved to the door. John's voice sounded outside. With her hand on the handle, she turned her head over her shoulder, and beckoned to me.

"Above all, Mr. Hastings, watch that devil—her husband!"

There was no time for more. Miss Howard was swallowed up in an eager chorus of protests and good-byes. The Inglethorps did not appear.

As the motor drove away, Mrs. Cavendish suddenly detached herself from the group, and moved across the drive to the lawn to meet a tall bearded man who had been evidently making for the house. The colour rose in her cheeks as she held out her hand to him.

"Who is that?" I asked sharply, for instinctively I distrusted the man.

"That's Dr. Bauerstein," said John shortly.

"And who is Dr. Bauerstein?"

"He's staying in the village doing a rest cure, after a bad nervous breakdown. He's a London specialist; a very clever man—one of the greatest living experts on poisons, I believe."

"And he's a great friend of Mary's," put in Cynthia, the irrepressible.

John Cavendish frowned and changed the subject.

"Come for a stroll, Hastings. This has been a most rotten business. She always had a rough tongue, but there is no stauncher friend in England than Evelyn Howard."

He took the path through the plantation, and we walked down to the village through the woods which bordered one side of the estate.

As we passed through one of the gates on our way home again, a pretty young woman of gipsy type coming in the opposite direction bowed and smiled.

"That's a pretty girl," I remarked appreciatively.

John's face hardened.

"That is Mrs. Raikes."

"The one that Miss Howard——"

"Exactly," said John, with rather unnecessary abruptness.

I thought of the white-haired old lady in the big house, and that vivid wicked little face that had just smiled into ours, and a vague chill of foreboding crept over me. I brushed it aside.

"Styles is really a glorious old place," I said to John.

He nodded rather gloomily.

"Yes, it's a fine property. It'll be mine some day—should be mine now by rights, if my father had only made a decent will. And then I shouldn't be so damned hard up as I am now."

"Hard up, are you?"

"My dear Hastings, I don't mind telling you that I'm at my wits' end for money."

"Couldn't your brother help you?"

"Lawrence? He's gone through every penny he ever had, publishing rotten verses in fancy bindings. No, we're an impecunious lot. My mother's always been awfully good to us, I must say. That is, up to now. Since her marriage, of course——" he broke off, frowning.

For the first time I felt that, with Evelyn Howard, something indefinable had gone from the atmosphere. Her presence had spelt security. Now that security was removed—and the air seemed rife with suspicion. The sinister face of Dr. Bauerstein recurred to me unpleasantly. A vague suspicion of everyone and everything filled my mind. Just for a moment I had a premonition of approaching evil.



Agatha Christie (1890-1976) wrote 66 detective novels and 14 short story collections.

Demonstrate Comprehension

Use this chart to review the selection. You may wish to highlight information in the text that will help you answer the questions. Then copy and paste it below, or write answers in your own words.

Characters: Who are the main characters?

Setting: What is the setting?

Plot: What plot events happen in this excerpt?

Analyze the Selection

Use this chart to analyze the narrative techniques used.

Analyze Dialogue

Reflect: How does the author use dialogue to create suspense?

Copy & Paste: Find a piece of dialogue from the text that creates suspense. Then copy and paste it here.

Analyze Descriptions

Reflect: How does the author use descriptions to create suspense?

Copy & Paste: Find a detail or description from the text that creates suspense. Then copy and paste it here.

Analyze the Narrator's Thoughts

Reflect: How does the author use the narrator's thoughts to create a sense of suspense?

Word Choice Find an example of the narrator's thinking that creates suspense. Then copy and paste it here.

Plan Your Literary Analysis

Use the chart below to plan your Literary Analysis. Then use your answers to help you write.

Paragraph 1: Introduce Your Topic

What is your topic?

Main Idea: Write a focus statement explaining the main idea your analysis will explore.

How will you hook your reader?

Hook: Determine how you'll capture readers' attention.

Paragraph 2: Develop Your Topic

What is the main idea you'd like to convey about dialogue?

Dialogue

What examples can you give to develop this idea?

What is the main idea you'd like to convey about descriptions?

Descriptions

What examples can you give to develop this idea?

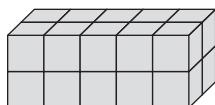
Narrator's Thoughts

What is the main idea you'd like to convey about the narrator's thoughts?

What examples can you give to develop this idea?

Learn the Math

Example 1 A design is made with cube blocks. The edge of each block is $\frac{3}{4}$ inch.



What is the volume of the design? Write your answer in simplest form.

Find the number of cubes for each dimension.

Length = 5, Width = _____,

Height = _____

Calculate the actual dimensions.

Multiply each dimension by $\frac{3}{4}$ inch.

Length = _____, Width = _____,

Height _____

Substitute the dimensions into the formula for the volume of a rectangular prism.

$V = lwh$

= _____ \times _____ \times _____

Multiply. Write the product in simplest form.

Volume is written in cubic units.

= _____ = _____

The volume of the design is _____ in³.

Example 2

A container in the shape of a rectangular prism has a base with an area of $16\frac{1}{4}$ in². The height of the container is $3\frac{3}{4}$ in. What is the volume of the container?

Substitute the dimensions into the formula for the volume of a rectangular prism.

$V = Bh$

Substitute the dimensions into the formula for the volume of a rectangular prism.

= _____ \times _____

Convert the mixed numbers to improper fractions.

= _____ \times _____

Multiply. Write the product in simplest form.
Convert an improper fraction to a mixed number.

= _____ = _____

Vocabulary

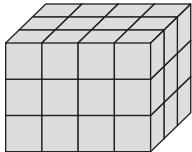
rectangular prism

volume

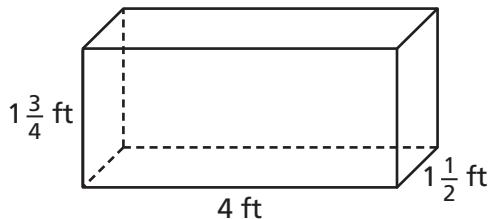
cubic unit

Do the Math

1. The edges of each cube are $1\frac{1}{2}$ in.



- A. Length = _____ in., Width = _____ in., Height = _____ in.
- B. What is the volume? Write the volume in simplest form. Convert an improper fraction to a mixed number. _____
2. The new fish aquarium that Dave bought is shown.



- What is the volume of the fish tank? _____
3. What is the volume of a rectangular prism that has a length of $6\frac{1}{4}$ cm, a width of $2\frac{1}{2}$ cm, and a height of 5 cm? _____
4. A cube has edges of $2\frac{2}{3}$ ft. What is the volume of the cube?

5. A closet is in the shape of a rectangular prism. The closet has a length of $7\frac{3}{4}$ feet, a width of $4\frac{1}{2}$ feet, and a height of $8\frac{5}{6}$ feet.

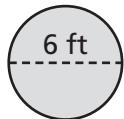
What is the volume of the closet? _____

Check

6. Every industrial set of 6 lockers has a length of 3 feet, a width of $1\frac{1}{2}$ feet, and a height of 6 feet. What is the volume of each locker in the set? _____

Learn the Math

Example 1 Larry bought a circular rug for his office.

**Vocabulary**

radius

diameter

 π (pi)

What is the approximate area of the rug? Use 3.14 for π .

To find the area of a circle, use the formula
 $A = \pi r^2$.

First, find the radius, which is $\frac{1}{2}$ the diameter.

The diameter is _____ feet.

The radius is _____ feet.

Substitute 3 for r and 3.14 for π in the formula.
 Then approximate the area.

$$A \approx (3.14) (\text{_____})^2$$

$$\approx \text{_____} \text{ ft}^2$$

The approximate area of Larry's rug is _____ ft^2 .

Example 2 The base of a circular fountain has a radius of 4.2 meters.
 What is the approximate area of the base of the fountain? Use 3.14 for π .

To find the area of a circle, use the formula
 $A = \pi r^2$. Substitute 4.2 for r and 3.14 for π in the formula.

$$A \approx (3.14) (\text{_____})^2$$

$$\approx \text{_____} \text{ m}^2$$

Round to the nearest hundredth.

$$A \approx \text{_____} \text{ m}^2$$

The approximate area of the base of the fountain to the nearest hundredth is _____ m^2 .

REASONING A pattern has a circle inside another circle. The outer circle has a radius that is twice the radius of the inner circle.
 What is the relationship between the areas of the two circles?

Do the Math

1. A circular swimming pool has a diameter of 18 feet. What is the approximate area of the swimming pool? Use 3.14 for π .
- Determine the radius.

$$18 \text{ ft} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ ft}$$

- Substitute the values into the formula.

$$A \approx (3.14) \underline{\hspace{2cm}}^2$$

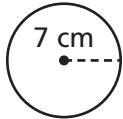
$$\approx \underline{\hspace{2cm}} \text{ ft}^2$$

The approximate area of the swimming pool is $\underline{\hspace{2cm}}$ ft^2 .

Find the approximate area of the circles. Use 3.14 for π . Round to the nearest hundredth, if necessary.

2. $\underline{\hspace{2cm}}$

3. $\underline{\hspace{2cm}}$



4. A circle has a radius of 12 centimeters. What is the approximate area of the circle? $\underline{\hspace{2cm}}$
5. A circle has a diameter of 32 inches. What is the approximate area of the circle? $\underline{\hspace{2cm}}$
6. A circular table has an area of 113.04 feet. What is the diameter of the table? $\underline{\hspace{2cm}}$
7. Joe has a Chinese checkers board that has an area of 225π square inches. What is the radius of the Chinese checkers board?
 $\underline{\hspace{2cm}}$
8. A circular photo has a diameter of 8 inches. It will go into a circular frame that has a diameter of 10 inches. How much greater is the approximate area of the frame than the photo? $\underline{\hspace{2cm}}$

Remember

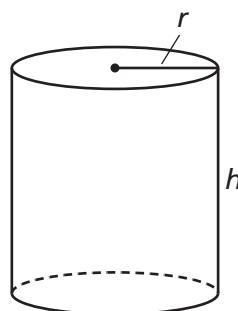
- The formula for the area of a circle is $A = \pi r^2$. To approximate π , use 3.14.
- The radius is $\frac{1}{2}$ the diameter.

Find Volume of Cylinders

The volume of a cylinder can be found using the formula

$$V = \pi r^2 h$$

where r is the radius of the base of the cylinder and h is the height of the cylinder.



Find the volume of the cylinder. Use 3.14 for π .

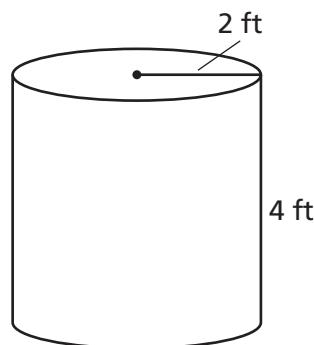
$$V = \pi r^2 h$$

$$\approx (3.14)(2^2)(4)$$

$$= (3.14)(4)(4)$$

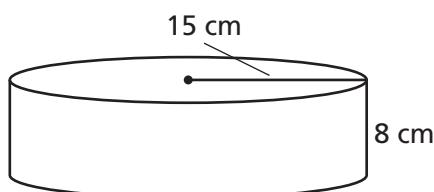
$$= 50.24$$

The volume of the cylinder is 50.24 ft³.

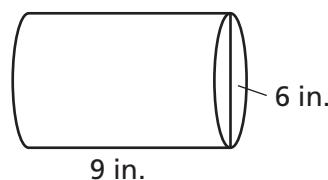


Find the volume of the cylinder. Use 3.14 for π .

1.

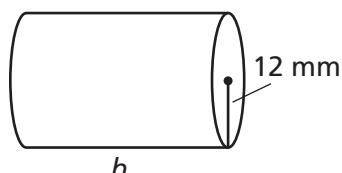


2.

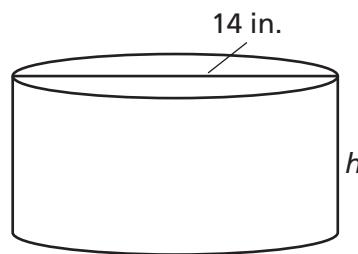


Find the height of the cylinder. Use 3.14 for π .

3. Volume = 13,564.8 mm³



4. Volume = 1,230.88 in.³

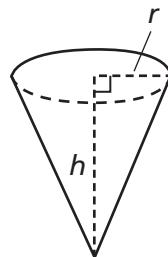


Find Volume of Cones

The volume of a cone can be found using the formula

$$V = \frac{1}{3}\pi r^2 h$$

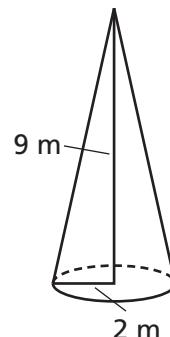
where r is the radius of the base of the cone and h is the height of the cone.



Find the volume of the cone. Use 3.14 for π .

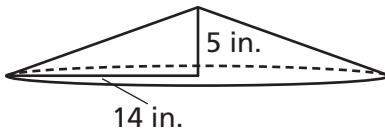
$$\begin{aligned} V &= \frac{1}{3}\pi r^2 h \\ &\approx \frac{1}{3}(3.14)(2^2)(9) \\ &= \frac{1}{3}(3.14)(4)(9) \\ &= 37.68 \end{aligned}$$

The volume of the cone is 37.68 m^3 .

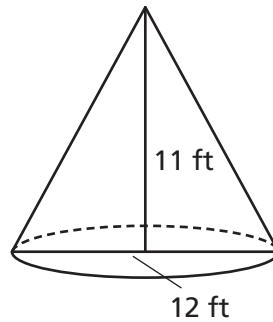


Find the volume of the cone. Use 3.14 for π . Round your answer to the nearest hundredth, if necessary.

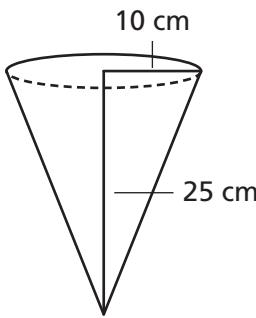
1.



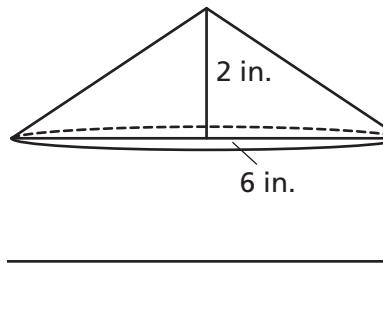
2.



3.



4.



Find Volume of Cones

1. A traffic cone has a diameter of 10 inches and a height of 27 inches.

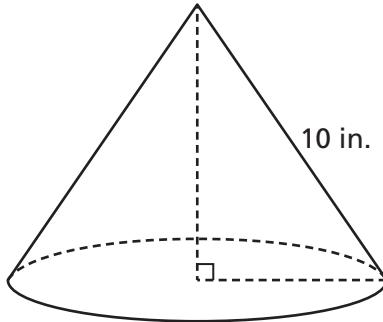
A. Find the volume of the cone. Leave your answer in terms of π .

B. A cylinder has the same radius and height as the cone. What is the volume of the cylinder in terms of π ? Explain how you know.

2. The volume of a cylinder is $2.4 \times 10^4 \text{ mm}^3$. What is the volume of a cone with the same radius and height? Write your answer using scientific notation.
-

3. The cone shown has a height of 8 inches.

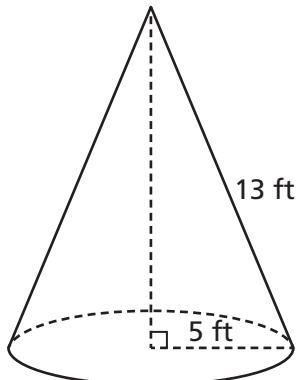
A. Explain how to find the radius of the cone.



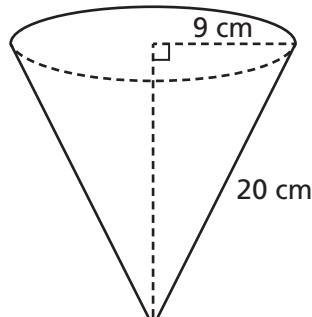
B. Find the volume of the cone. Leave your answer in terms of π .

Find the volume of each cone. Use 3.14 for π , and round the height and volume to the nearest tenth.

4.



5.



Reviewing Mitosis

Climb the Ladder: *Mitosis*

This week you will complete the activities to show what you've learned about mitosis and cell division.

1. On each day Monday thru Thursday, you will choose one item from each rung of the ladder. Check your choices. Use **Friday** as a day to either finish any uncompleted work, review your information, to perfect research, or practice presenting your findings to your teacher and classmates.
2. Keep your work and be prepared to share your most interesting work when you return to school.

| | | | |
|---|--|---|--|
| Monday <small>(select only one)</small> | <p>Understanding the Cycle Make a scrapbook that shows the three stages of the cell cycle. Include at least one illustration of each stage and describe what occurs during each stage.</p> | <p>An Ode to Mitosis Write a poem about the ways that a multicellular organism appreciates mitosis.</p> | |
| Tuesday & Wednesday | <p>Tracking Mitosis Using the Internet, find two video simulations of mitosis. Take notes about and make sketches of the process as you watch. Then compare the strengths and weaknesses of the two simulations.</p> | <p>This Just In! Present a news report about a new cell that has just formed. Explain how the cell formed, including the three stages of the cell cycle. Also, identify the cell as a unicellular organism or part of a multicellular organism.</p> | |
| Thursday <small>(select only one)</small> | <p>To Be DNA Imagine that you are the DNA in a cell that is about to go through mitosis. Present a monologue to your family in which you describe the changes you'll go through before and during mitosis.</p> | <p>Why, Oh Why? Create a video in which you describe the reasons that unicellular organisms go through cell division and the reasons that multicellular organisms go through cell division. Include examples in your video.</p> | |

What's The Message: Using Propaganda

Day 1---What's the Message

1. Read page 1 & 2
2. Highlight the questions to ask yourself after encountering or witnessing each propaganda technique.

What's the Message?

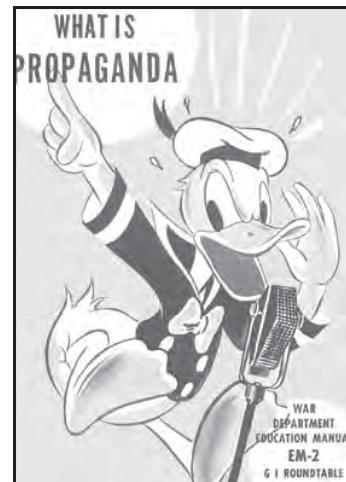
Name:

Propaganda

Did you know the average teen is exposed to over 3,000 advertisements per day? Without the skills to look critically at all these messages, it's easy to be persuaded by them without even realizing it. **Propaganda** is media that uses carefully-crafted messages to manipulate people's actions and beliefs. It has one purpose, and one purpose only: to persuade you. There are a variety of propaganda techniques. They use **biased**, or one-sided, messages and are designed to appeal to peoples' emotions instead of their judgment and reasoning. How many of the following techniques do you recognize from your own exposure to propaganda?



Oprah Winfrey and Barack Obama in 2008.



Testimonials

Testimonials usually involve celebrities or other respected people **endorsing**, or officially supporting, a product or idea. The person giving the testimonial could be famous, knowledgeable about the product (such as a doctor talking about medicine), or just an ordinary person who claims the product has worked for them. When the testimonial comes from a celebrity, the hope is that you will want to use the product or support the idea simply because they do. Other testimonials try to persuade you to use or support something because it is good for you or it worked for others. Beware, though, because people are usually paid to give endorsements (except in politics).

Ask yourself: Who is quoted in the testimonial? Is this person actually an expert about this product or idea? Does the product or idea have value without the testimony or endorsement?

Bandwagon

"Jumping on the bandwagon" describes people choosing to go along with the rest of the crowd. **Bandwagon** propaganda creates the impression that there is widespread support for a thing or idea. People tend to want to be on the winning team and try to avoid being the odd one out. These messages create a sense of peer pressure to join in.

Ask yourself: Does the message provide reasons for joining the group? Is there any evidence for or against joining in?



It must be good if billions have been served!



A 2008 political cartoon showing the presidential candidates too young or too old.

Name-Calling

Name-calling is exactly what it sounds like: using negative words and bad names to create fear and dislike for people, ideas, or institutions. Name-calling can be verbal or visual. When done visually, it shows a person or thing in an unflattering way. You can find both kinds of this technique in political cartoons, political attack ads, and on news talk shows.

Ask yourself: Who is being called what? Is there a real connection between the names and the person/idea being attacked?

What's the Message?

Name: _____

Glittering Generalities

This technique always shows the subject of the message in a positive light, but provides little or no information. **Glittering generalities** use simple, clever slogans that appeal to people's emotions. These general statements are easy to remember but hard to verify because they offer no facts.

Ask yourself: What do these slogans or catchphrases really mean?



Slogans and posters from the 2008 presidential election.

| TAPE IS OUT. | OPTICAL IS IN |
|--|--|
| <ul style="list-style-type: none">Tape is slowNo random accessFive-year shelf life (Avg.)Too many different formatsReliable? | <ul style="list-style-type: none">Recordable CD is fastRandom accessOne hundred-year shelf lifeCD-ROM standard formatVery reliable |

Card Stacking

Card stacking uses facts and figures to show one side as positive and the other side as negative. The message shows only positive information about the person, product, or idea being promoted, and it shows only damaging information about the opposition or competition. This technique is designed to make you think you are hearing both sides. In reality, you are actually hearing only one perspective.

Ask yourself: Are facts being changed or left out? What other pieces of information do I need to make an informed decision?

Plain Folks

The **plain folks** technique is designed to send the message that a product or person is "just like you." An advertiser will show an ordinary-looking person who vouches for how well a product works. Politicians have their picture taken visiting coffee shops, riding on tractors, and doing other things that everyday people do. The goal is to gain your trust by showing that people just like you use the product or support the person.

Ask yourself: Can I trust the person who is speaking or acting? What are the person's motives for visiting this place? Is this person really just like me?



Rudy Giuliani visits a small town diner during his 2007 presidential campaign.



Transfer

The **transfer** technique uses your feelings about one thing to get you to feel the same way about something else. Transfer can use a positive image to persuade you to like something or a negative image to persuade you to dislike something. The images might be **symbolic**, such as a flag standing for patriotism. They might be cute and lovable, such as a baby penguin. The images could be repulsive, such as diseased skin in an anti-smoking campaign, or they could be hateful, such as comparing a politician to Adolf Hitler. However they are presented, the images act as wordless messages that most people can identify with.

Ask yourself: What is the image trying to get me to feel? Is there an actual connection between the image and the person or product?

What's the Message?

Name:

Station One: Name Calling

Image 1. Explain how the drawing portrays German soldiers:

| | |
|---------------------------------------|--|
| Does the soldier look human? | <input type="checkbox"/> Yes <input type="checkbox"/> No, he looks like: |
| What is on the soldier's arms? | |
| What is the soldier trying to do? | |
| Is this a positive or negative image? | <input type="checkbox"/> Positive <input type="checkbox"/> Negative |

Image 2. What name does this ad want you to connect with the politician?

- A) The ad is saying that Patty Murray is _____.
- B) The ad shows Patty Murray as
 happy unhappy.
- C) The advertiser wants people to
 like dislike this politician.

The Technique. Based on what you see in these examples, what three things can be done to make someone or something look bad?

1. _____
2. _____
3. _____

Station Two: Testimonial

Image 1. Explain the message in this magazine ad:

| | |
|--|--|
| Who is the celebrity in this ad? | |
| What product is she endorsing? | |
| What does she claim this product has done? | |
| What message are YOU supposed to take away from this ad? | |

Image 2. Analyze the testimonial in this ad:

- A) Who is endorsing whom in this ad?
_____ is endorsing _____
- B) The testimonial is being given by:
 A celebrity
 Knowledgeable group of people
 An ordinary person
- C) What is the ad trying to persuade you to do?

The Technique. Which of the following testimonials would convince YOU?

A football quarterback endorsing toothpaste.

A mom endorsing a healthy snack for kids.

Your favorite movie star endorsing broccoli.

Your favorite singer endorsing a brand of shoes.

What's the Message?

Name:

Station Three: Transfer

Image 1. Explain the message in this public service announcement:

| | | |
|--|----|----|
| What two things are pictured in this image? | 1) | 2) |
| Which one is supposed to be scary? | | |
| How does the scary image impact the other image? | | |
| What is this ad trying to tell you? | | |

Image 2. Setting the stage:

A) What are the 2 symbols of patriotism you see in this image?

1. _____
2. _____

B) What are these symbols supposed to make you believe about the candidate?

- He is from New York.
- His favorite color is red.
- He loves America.

The Technique. Think about whether the transfer messages in these images are accurate:

A) Is there an actual connection between car wrecks and alcoholic beverages?

- Yes
- No
- Need more information to decide

B) Is there an actual connection between this politician and the symbols in the picture?

- Yes
- No
- Need more information to decide

Station Four: Glittering Generalities

Image 1. Explain the message in this soda ad:

| | | | | |
|--|-----------------------------------|----------------------------------|-----------------------------------|-------------------------------|
| What does this ad tell you about Coca-Cola? | | | | |
| How much information is provided in the ad? | <input type="checkbox"/> A lot | <input type="checkbox"/> Some | <input type="checkbox"/> A little | <input type="checkbox"/> None |
| How much do you already know about Coca-Cola ? | <input type="checkbox"/> A lot | <input type="checkbox"/> Some | <input type="checkbox"/> A little | <input type="checkbox"/> None |
| How is this message supposed to make you feel? | <input type="checkbox"/> Positive | <input type="checkbox"/> Neutral | <input type="checkbox"/> Negative | |

Image 2. Match each question below with the piece of campaign propaganda that it challenges.

- _____ What specific leadership qualifications does he have?
- _____ What does this future hold?
- _____ What, specifically, should Americans hope for?
- _____ What, exactly, can we do?
- _____ Why should I like him?
- _____ Can anyone really guarantee peace and prosperity?

The Technique. Describe how glittering generalities tries to persuade people. What tools does it use? Unscramble the words below.

lgsnosa _____

and

cthca esrhasp _____

that are

ispmel & revcel _____

What's the Message?

Name:

Image 1. "Plain" President?

- A) Do you think this is where the President and Vice President usually eat?
 Yes No
- B) Find one detail in this picture that makes it look like the kind of place everyday people might eat:
-

Image 3. Explain the message in this ad:

- A) The woman in the ad looks
 glamorous normal
- B) Find one detail in this picture that makes the woman look like a regular person:

Station Five: Plain Folks

Image 2. Campaigning with workers.

- A) What message is this photo trying to send?
 Perry wishes he could wear a hard hat too
 Perry wants to invest in this company
 Perry can relate to average people
- B) Find one thing in this picture that shows these workers are "plain folks":

- C) The politicians in both images still look different from everyone else because they are wearing _____.

The Technique. Mark the question that would NOT be helpful for analyzing this technique.

- Would the President eat here if there were no cameras photographing him?
 Why is Perry visiting these workers?
 Is the woman with the water a Republican?

Station Six: Bandwagon

Image 1. Explain the message in this ad for laundry detergent:

| | | |
|--|-----------------------------------|-------------------------------|
| What difference do you see between the teams? | | |
| What is Tide's slogan? | | |
| Which team are you supposed to prefer? | <input type="checkbox"/> #2 Brand | <input type="checkbox"/> Tide |
| Why are you supposed to want to be on that team? | | |

Image 2. Analyze this World War II poster:

- A) When Rosie says "we," who is she talking to?

- All Americans
 American women
 Factory workers

- B) Look at Rosie. Find one characteristic or quality Rosie has that other women might wish for:

The Technique. The bandwagon technique is most like:

- Peer pressure
 Advice
 Getting in trouble

Why? _____

What's the Message?

Name:

Station Seven: Card Stacking

Image 1. Explain the message about this cell phone provider ad:

| | |
|--|--|
| What can you learn about Verizon? | |
| What do you learn about AT&T? | |
| Can you tell whether AT&T has any benefits Verizon doesn't have? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Why can't you trust the information in this ad? | |

Image 2.

A) Which product is this ad promoting?

- Omega-9 Canola Oil
- Partially Hydrogenated Soybean Oil

B) The ad mentions reducing "Bad Fat." Is it clear what "bad fat" is?

- Yes
- No

C) Does this ad show any information about the possible benefits of soybean oil?

- Yes
- No

The Technique. Think about whether you can base a decision on these messages:

Do card stacking messages give you information?

- Yes
- No

Do they give you the benefits and drawbacks of both items being compared?

- Yes
- No

Do they give you enough information to really understand both products?

- Yes
- No

Station Eight: Challenge Image

Romney/Rock Image. Explain the message in this photo op:

| | | |
|---|--|--------------|
| Who is endorsing whom in this photograph? | <p style="text-align: right;">is endorsing →</p> | |
| What is hanging in the background? | | |
| Which group of people would most likely be persuaded by this image? (check all that apply) | <ul style="list-style-type: none"><input type="checkbox"/> Senior citizens <input type="checkbox"/> Kids under 18 <input type="checkbox"/> Rock music lovers<input type="checkbox"/> Jazz music fans <input type="checkbox"/> Voters age 18-40 <input type="checkbox"/> Men <input type="checkbox"/> Women | |
| Which <u>two</u> propaganda techniques are applied in this scene? | Technique #1 | Technique #2 |
| How do you know these techniques are being used? | | |

What's the Message?

Name: _____

Vocabulary. Match each term with its definition.

____ 1. Propaganda ____ 3. Endorse

____ 2. Bias ____ 4. Symbol

- A. Something that stands for or represents something else
- B. Officially support a product, candidate or idea
- C. Messages that are made to manipulate people's actions and beliefs
- D. Only shows one side of a debate



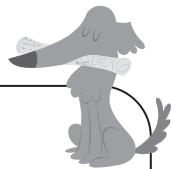
Symbols. Circle one of the symbols above and answer the questions that follow.

5. What IDEA does this symbol stand for?

6. If you put this symbol on your backpack, what message would you be sending?

7. How could this symbol be used in propaganda?

You're Biased! Read each message and decide if it is biased. Then identify which propaganda technique is used.



Cats v. Dogs

Cats...

-Bathe themselves

-Litter trained

-Purr

Dogs...

-Always getting dirty

-Has to be walked

-Barks a lot

Is this message biased? Yes No

If it is, what propaganda technique does it use?

- A. Plain Folks
- B. Card Stacking



New Video Game

"Thrill a minute!"

"The best game out there!"

"Exciting stuff!"

Is this message biased? Yes No

If it is, what propaganda technique does it use?

- A. Glittering Generalities
- B. Bandwagon



Restaurant Menu

Starters

| | |
|---------------------|------|
| House Salad | 4.50 |
| Mozzarella Sticks | 5.50 |
| Calamari | 6.00 |
| Garlic Cheese Bread | 4.50 |

Is this message biased? Yes No

If it is, what propaganda technique does it use?

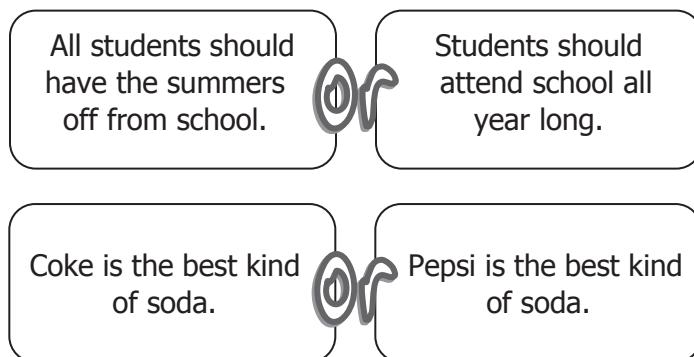
- A. Testimonial
- B. Transfer

What's the Message?

Name: _____

Cartoon Time Follow the steps to create your own piece of propaganda.

Step One: Read each side of the two debates and pick a side for your piece of propaganda.



Step Two: Select the type of propaganda technique you will use in the cartoon.

- Name Calling
- Glittering Generalities
- Transfer
- Testimonial
- Plain Folks
- Card Stacking
- Bandwagon

Step Three: Use the space below to create your propaganda cartoon. Make sure you use what you have learned in this lesson!

A large, empty rectangular box intended for students to draw their own propaganda cartoon based on the statements provided in Step One and the techniques selected in Step Two.

Day 2—Gallery Walk

1. Look at the Gallery Walk Images for stations 1-4
2. Complete activities for stations 1-4 on pages 1 & 2 (Gallery Walk)

Station One : Name Calling



Image 1: Wartime

A German soldier, as shown on an Australian poster from the World War I era (1914-1918).

Image 2: Politics

A U.S. Senator, as shown on a television ad run by her opponent during a political campaign.



Station Two: Testimonials



Image One:
Advertising

Jennifer Hudson for
Weight Watchers

Image Two: **Politics**

Democratic
Presidential hopeful,
Hillary Clinton, and a
group of school
children.



Station Three: Transfer

Image One: Public Service

A public service announcement sponsored by Mothers Against Drunk Driving (MADD).

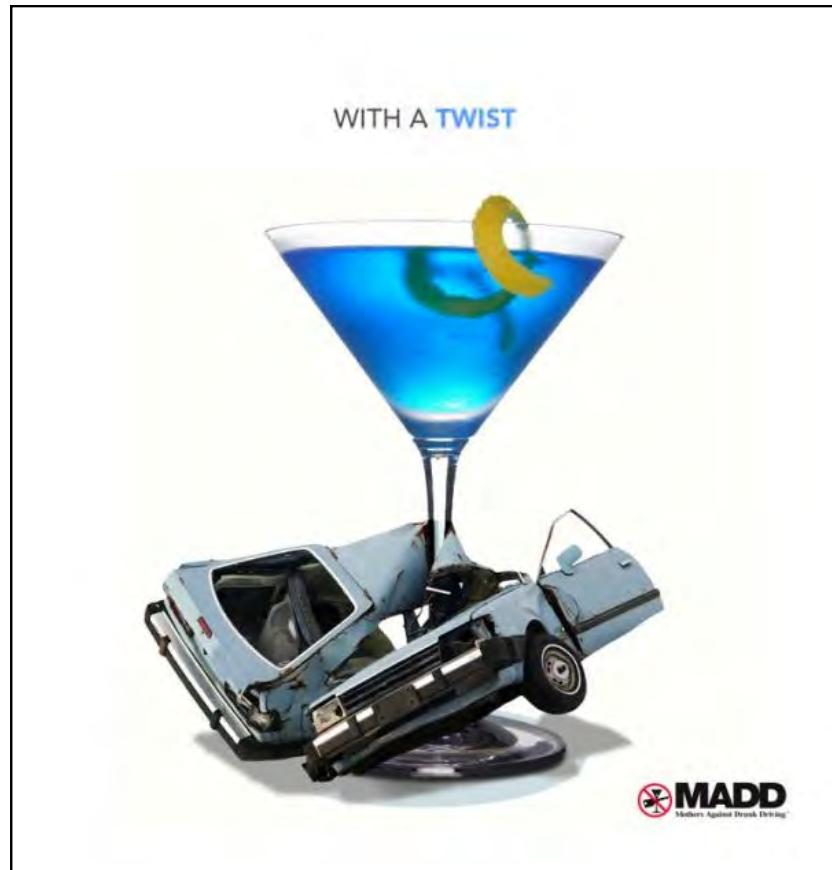


Image Two: Politics

Republican John Huntsman speaking to a crowd during his presidential campaign.

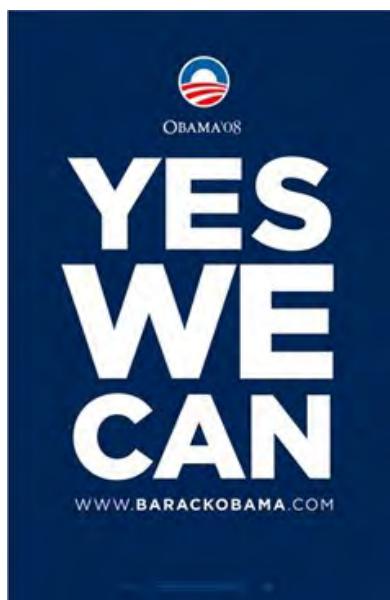
Station Four: Glittering Generalities

Image One: Advertising



Image Two: Politics

A.



C.



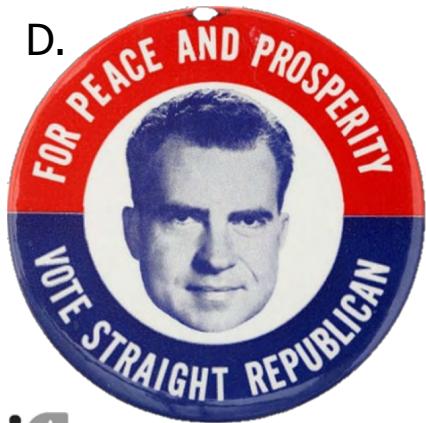
B.



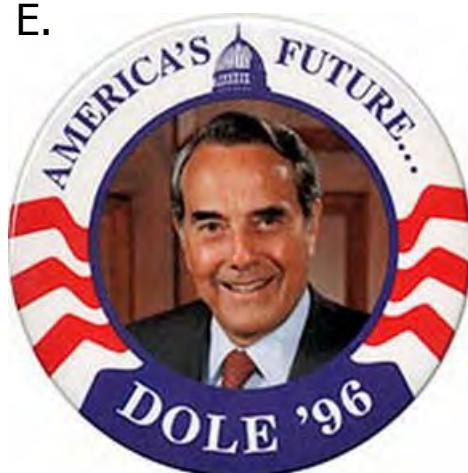
F.



D.



E.



Station Five: Plain Folks

Image One: Politics



Vice President Biden and President Obama visit a popular burger joint for lunch.

Image Two: Politics



Presidential candidate Rick Perry meets with workers while campaigning.

Image Three: Advertising

An ad for Propel water.



Station Six: Bandwagon

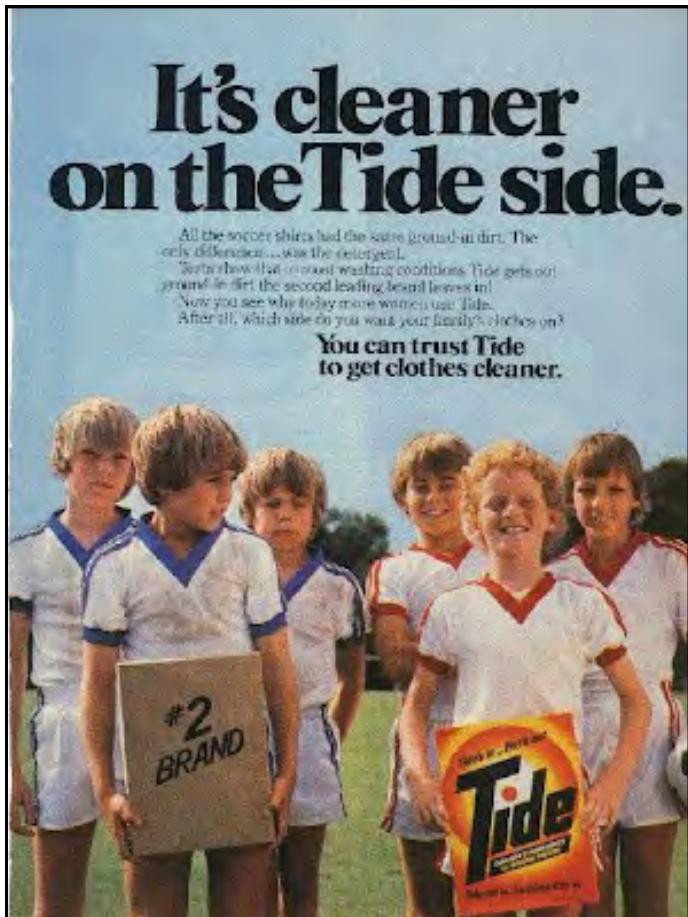


Image One: Advertising

An ad for Tide laundry detergent.

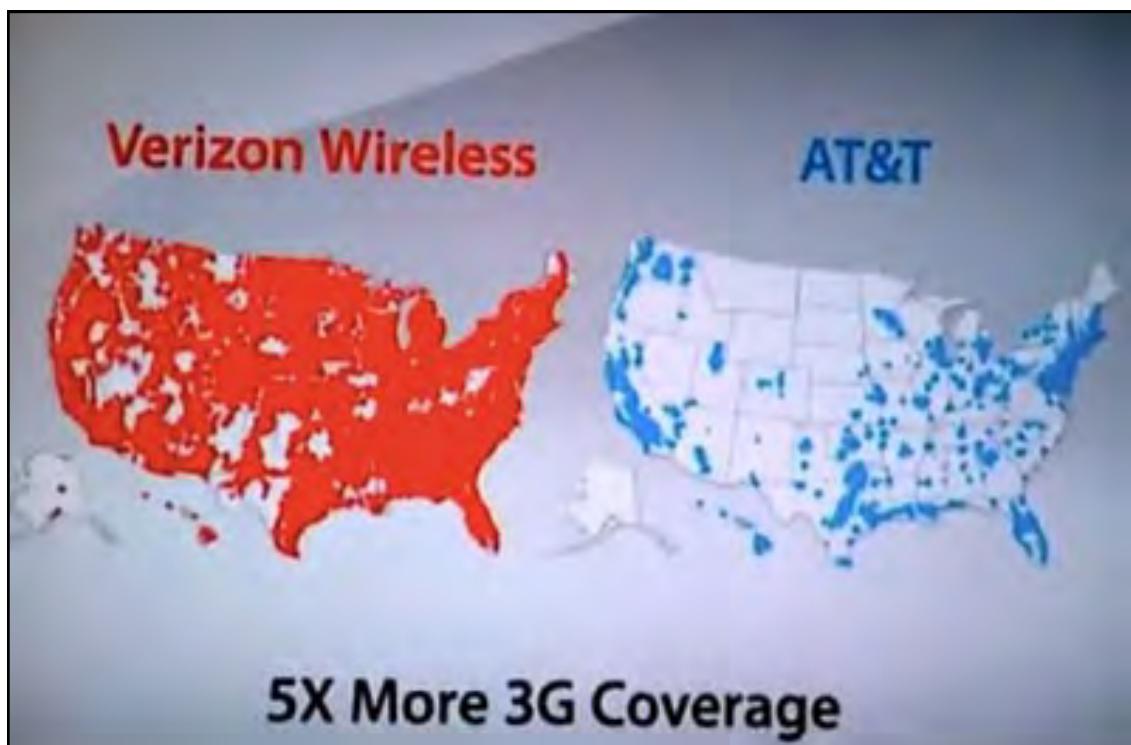
Image Two: Wartime

In this famous American poster from World War II, "Rosie the Riveter" urges women to go to work in factories to help the war effort.



Station Seven: Card Stacking

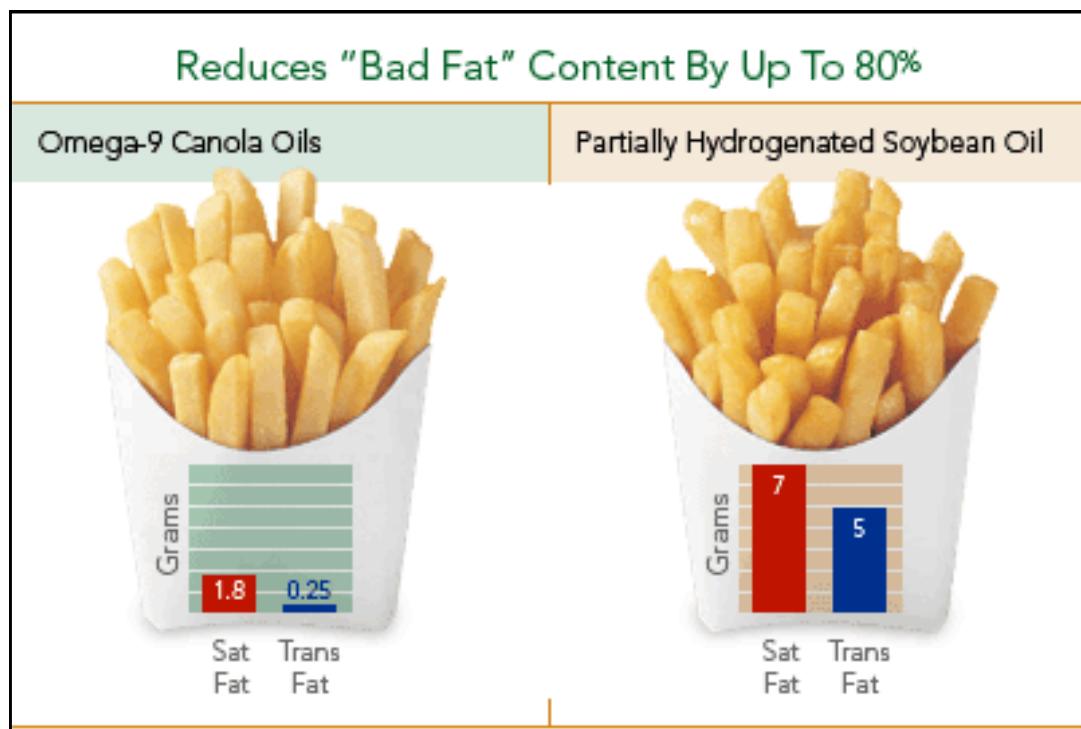
Image One: Advertising



Verizon Wireless advertises its cell phone service.

Image Two: Promoting an Industry

An agricultural researcher advertises the benefits of canola oil.



Station 8 Challenge

There are at least two different propaganda techniques used in this image. Can you identify them?



Republican presidential candidate Mitt Romney and musician Kid Rock.

Day 3—Gallery Walk

1. Look at the Gallery Walk Images for stations 5-8
2. Complete the activities for stations 5-8 on pages 3 & 4 (Gallery Walk)

Day 4 --What's The Message?

Complete Activity Pages 1 & 2 to find out how much you have learned about propaganda.

Day 5—Write

You desperately want a new game but your parent/grandparent said, “no”. You are reminded that you just got two new games last month. But this game is new and you must be the first of your friends to get it. What message or propaganda technique would you use to persuade your loved one to purchase the new game for you?