

Teacher's Supplement

arts & sciences for kids

ask[®]

BOOM!

MAGAZINE ARTICLES

What a Blast!	6
Expository Nonfiction	880L
Exploding Art	11
Expository Nonfiction	1120L
The Day the Medicine Exploded	12
Cartoon	720L
Fantastic Fireworks	16
Expository Nonfiction	1060L
Alfred Nobel	17
Expository Nonfiction/Biography	730L
Pop!	22
Expository Nonfiction	1000L
Rats to the Rescue	24
Expository Nonfiction	840L



Teacher's Guide for *Ask: Boom!*

Using This Guide.	2
Common Core: Reading, Speaking & Listening, and Writing	3
Article Pages.	4
Cross-Text Connections with Multiple Articles	11
Mini-Unit	12
Printables.	15
Glossary	18
Online Resources	20



OVERVIEW

In this magazine, readers will learn about the science, history, and uses of explosions.

Ask: Boom! includes information about how buildings are demolished, why

popcorn pops, what the inside of a firework looks like and the many ways explosives make the world a better place.

ESSENTIAL QUESTION:

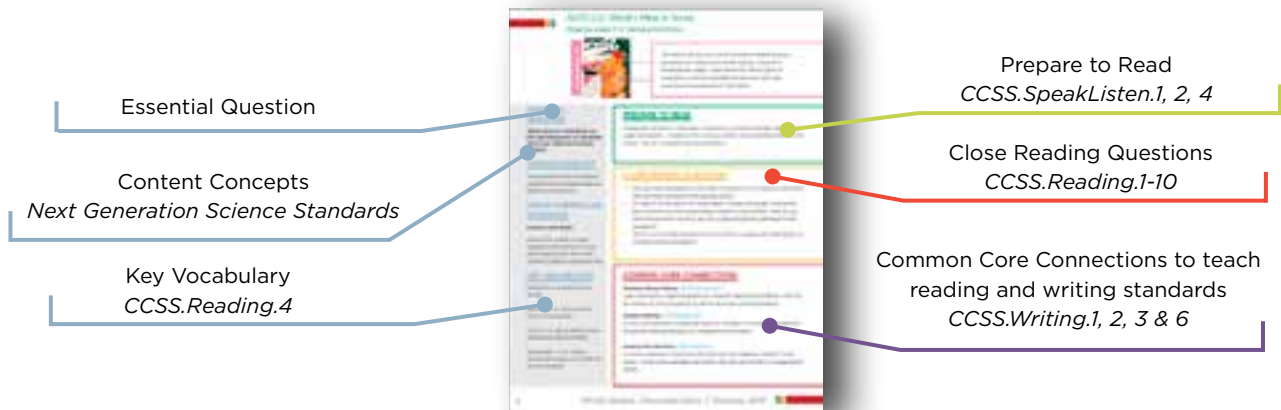
How are explosions used in positive ways to benefit people?



We invite you to use this magazine as a flexible teaching tool that is ideal for interdisciplinary learning of social studies and science content and core literacy concepts. Find practical advice for teaching individual articles or use a mini-unit that helps your students make cross-text connections as they integrate ideas and information.

READ MULTIPLE ARTICLES PAGES 4 - 10

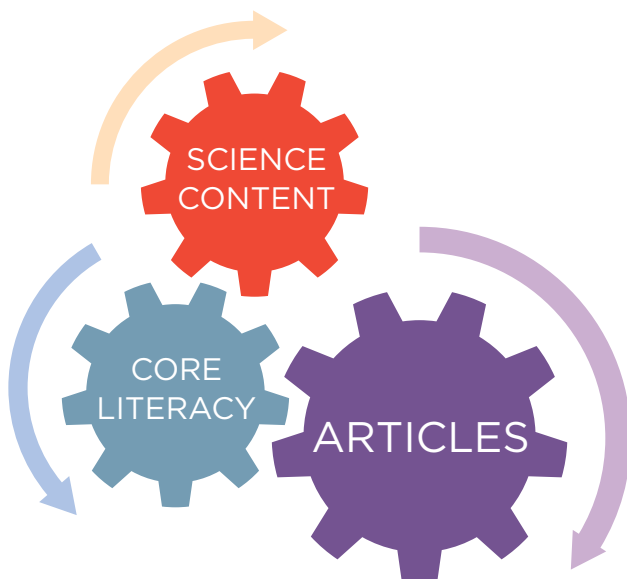
Each article in this magazine is well-suited for teaching Common Core literacy concepts and content area knowledge. For each individual article page in this guide, you'll find the following:



TEACH A MINI-UNIT PAGES 12 - 14

Magazine articles can be easily grouped to make cross-text connections and comparisons. Our Common Core mini-unit guides students to read and discuss multiple articles and integrate ideas and information (CCSS.Reading.9).

Discussing multiple articles (CCSS.SpeakListen.1, 2, 4) prepares students to write texts to share and publish in a variety of ways (CCSS.Writing.2).



READING

Core literacy concepts, such as the ones found in the Common Core State Standards, help students access social studies and science content. Integration of both literacy thinking and content study offers students a great way to become experts in reading informational text and literature for content knowledge. This guide provides questions to cover many core literacy concepts.

Draw Inferences (CCSS.InfoText.1)

Describe Relationships (CCSS.InfoText.3)

Analyze Text Structure (CCSS.InfoText.5)

Interpret Visual Information (CCSS.InfoText.7)

Summarize (CCSS.InfoText.2)

Determine Word Meaning (CCSS.InfoText.4)

Understand Author's Point of View (CCSS.InfoText.6)

Explain Reasons and Evidence (CCSS.InfoText.8)

FOCUS STANDARD: CCSS.InfoText.9: Integrate Ideas and Information

Have students read multiple articles on the same topic from this magazine to build knowledge and make cross-text comparisons. See ideas for Cross-Text Connections on page 13 of this guide.

SPEAKING AND LISTENING

Use the articles in this magazine to spark meaningful discussions in person and online. Encourage deeper discussions where students can become topic experts (CCSS.SpeakListen.1, 2, 4).

DISCUSSION OPTIONS—IN CLASS OR ONLINE

Article Clubs: Form small reading groups of students reading the same article. Have students discuss the content, share ideas, and critically evaluate the text.

Jigsaw Clubs: Form small reading groups of students reading *different* articles. Invite students to share information and resources with each other.

Whole Class: Launch with the essential question. Encourage students to find and share evidence from different articles to build a greater understanding of the question.

Inquiry Discussions: Pose open-ended questions that engage students and prompt them to form an opinion and support it with reasons found directly in the text.

WRITING

Use the articles in this magazine to prompt **informative/explanatory writing** (CCSS.Writing.2). Have students use evidence from the texts to share information about social studies, language arts, or science content. See the **Mini-Unit** section of this guide (pgs. 12 - 14) as well as the **Article Pages** (pgs. 4 - 10) for ways to incorporate writing into your instruction.



Kaboom! Find out how explosions are used to demolish large buildings. Demolition experts say it's the safest way. Learn why!

ESSENTIAL QUESTION

How are explosions used in positive ways to benefit people?

SCIENCE CONCEPT

The patterns of an object's motion can sometimes be observed and measured.

CROSS-CURRICULAR EXTENSION

Social Studies

Find out about demolitions in your area. How are they similar to or different from the Kingdome Stadium?

KEY VOCABULARY

choreographers (p. 6) people who decide how a dancer or group of dancers will move during a performance

demolish (p. 6) to forcefully tear down or take apart a structure

implode (p. 8) to collapse inward in a very sudden and violent way

PREPARE TO READ

Ask students what they know about demolition and if they have seen buildings taken down. Explain that in this article they will learn about how huge buildings like Seattle's Kingdome Stadium are demolished. Discuss how they think this was done.

CLOSE READING QUESTIONS

- There are many forces and motions at work when a building is demolished. Underline all the words in the article that identify forces and motions.
- Highlight evidence in the article that explains what the author means by, "Using explosives to collapse a building doesn't mean blowing it up" (p. 6).
- A demolition expert needs to know about many different science topics. Cite information in the article that supports this statement.

COMMON CORE CONNECTIONS

Analyze Key Ideas and Details *CCSS Reading 1 & 3*

The demolition experts in this article explain that using explosives is really the safest way to bring a building down. What evidence do they use to support their ideas?

Interpret Visual Information *CCSS Info Text 3*

Study the photos and illustrations on pages 8 and 9. How do the images work together to help explain the demolition process? Which images were most useful in helping you understand the Kingdome explosion?

Expository Writing *CCSS Writing 3*

Use the information in the article to write the steps that must be followed in order to demolish a building. Be sure to list the steps in the correct sequence.



Fireworks use explosions to create beautiful displays. Find out how a Chinese artist takes this even further to create explosive art.

ESSENTIAL QUESTION

How are explosions used in positive ways to benefit people?

SCIENCE CONCEPT

Heating or cooling a substance may cause changes that can be observed.

CROSS-CURRICULAR EXTENSION

Art and Science

Create an explosive piece of art. Sprinkle different colors of powdered tempera paint mixed with baking soda on a piece of cardboard. Use a paintbrush dipped in vinegar to make the colors explode.

KEY VOCABULARY

fiery (p. 11) having or producing fire

scorched (p. 11) burned onto the surface of something

PREPARE TO READ

Ask students to describe what it is like to watch fireworks. Talk about what fireworks are and how explosions are used to create them. Then ask if students believe fireworks are an art form. Explain that students will be reading about a Chinese artist who uses explosions to create art.

CLOSE READING QUESTIONS

- Underline words that describe action (verbs) in this article.
- Why does Cai like to use explosives to create art? Highlight the reasons he gives in the article.
- How is Cai's firework art the same as and different from other fireworks? Support your ideas with details from the text and photos.

COMMON CORE CONNECTIONS

Analyze Text Structure *CCSS Reading 5 & 6*

In what other formats could this same information be presented? Would it be more interesting or effective in a video or a live demonstration? What parts of the article would be stronger in a different format?

Draw Inferences *CCSS Reading 1*

The artist shares that, he likes using the "destructive power of gunpowder to create art and joy instead." What do you think he means by this?

Describe Relationships *CCSS Reading 3*

What is the same about the two types of explosive art forms the artist creates? How are they different? Which one would you most like to see him create? Why?

ARTICLE: The Day the Medicine Exploded

Magazine pages 12 -15, Cartoon



Learn about the development of gunpowder and other explosives in this fun cartoon that packs a blast of learning.

ESSENTIAL QUESTION

How are explosions used in positive ways to benefit people?

SCIENCE CONCEPT

Science knowledge expands by building on the work of earlier scientists.

CROSS-CURRICULAR EXTENSION

Writing

Draw your own cartoon boxes to add other uses of explosives not shown on these pages. Include drawings and text.

KEY VOCABULARY

alchemist (p. 12) a person who studies alchemy, a science that was used in the Middle Ages with the goal of changing ordinary metals into gold

purify (p. 12) to remove dirty or harmful substances

nitroglycerin (p. 15) a liquid that is used in making explosives and in medicine

PREPARE TO READ

Invite volunteers to share titles of graphic nonfiction books they enjoy. Discuss why this format is fun to read and ask how cartoonists can help teach science. Finally, ask students what they might include in a cartoon about the history of explosions.

CLOSE READING QUESTIONS

- How does this cartoon show that trial and error played an important role in the development of explosives? Find places that show characters making unexpected discoveries.
- The cartoon shows important events and discoveries in the development of explosives. Create a timeline to summarize this information.
- How is the development of explosives linked to war, medicine, business, and cultural exchange? Cite text details to support your answer.

COMMON CORE CONNECTIONS

Describe Relationships *CCSS Reading 3*

What are the relationships between the different inventions in this cartoon? With a partner, share and explain the relationships you find.

Analyze Key Ideas and Details *CCSS Reading 1*

Why do you think this cartoon is titled “The Day the Medicine Exploded”? Find details that connect to the cartoon title. Then create a new title for the cartoon using other details.

Compare Information *CCSS Reading 1, 2, 3*

Review the different inventions and uses of explosive chemicals in this cartoon. How have these explosives been used to harm people? How have they been used in positive ways to benefit people? Create a two-column chart to record your response.



Have you ever wondered how fireworks work? This article gives you information about how these spectacular shows are created.

ESSENTIAL QUESTION

How are explosions used in positive ways to benefit people?

SCIENCE CONCEPT

Chemicals can be identified by the different colors they produce when burned.

CROSS-CURRICULAR EXTENSION

Art

Create your own picture of a firework. Use any type of paint or media to capture the colors and sparkle of a firework display.

KEY VOCABULARY

charge (p. 16) the amount of an explosive material (such as dynamite) that is used in a single blast

ignites (p. 16) sets something on fire

PREPARE TO READ

Discuss with students their ideas about the science of fireworks. Ask what they think the inside of a firework looks like and what its different parts might be. Then ask students to guess what kinds of science are involved in launching a firework into the sky and in the explosion of colors.

CLOSE READING QUESTIONS

- Use information from the article to list the steps for making fireworks. How many steps did you list?
- Underline the main substances used to make a firework. Explain which substances are most dangerous and why.
- Study the diagrams in the article. What is the purpose of the fuse? Share your idea with evidence from the article.

COMMON CORE CONNECTIONS

Describe Relationships *CCSS Reading 3*

What is the relationship between science and a pyrotechnician's job? What science concepts would someone who works with fireworks need to know? Use text details to support your answer.

Interpret Visual Information *CCSS Reading 7*

The article uses illustrations to help explain how fireworks work. With a partner, write 2-3 specific questions about fireworks that can be answered using information in the illustrations. Then exchange questions with another pair.

Determine Word Meaning *CCSS Reading 4*

In this article, what does the word "charge" mean? Use clues in the text to describe the meaning of the word "charge" as it is used in this article.

ARTICLE: Alfred Nobel

Magazine pages 17 - 21, Expository Nonfiction/Biography



Alfred Nobel established the famous Nobel Prize with the dream of supporting those who work for peace. Find out why his legacy was surprising to many who lived during his lifetime.

ESSENTIAL QUESTION

How are explosions used in positive ways to benefit people?

SCIENCE CONCEPT

Science knowledge can be used for different purposes and results.

CROSS-CURRICULAR EXTENSION

Science

Research the Nobel Prize winners from a specific year. In a chart, record their names, awards, accomplishments, and the year they won the prizes. Share the chart with the class.

KEY VOCABULARY

diatomaceous (p. 20) consisting of or containing fossil remains of tiny organisms called diatoms

dynamite (p. 20) a powerful explosive that is often used in the form of a stick

PREPARE TO READ

Ask students to share what they know about the Nobel Prize. What does it mean to win this prestigious award? Explain that they will read about the man who created the award to recognize peaceful contributions to the world despite his reputation for helping to cause violence.

CLOSE READING QUESTIONS

- Underline details that explain how Alfred Nobel's childhood experiences prepared him for his future career.
- What important events in Nobel's career influenced his work and discoveries? Support your answers with details from the article.
- How did Nobel become rich when he was alive? Is this why he is famous today? Cite text details to support your view.

COMMON CORE CONNECTIONS

Describe Relationships *CCSS Reading 3*

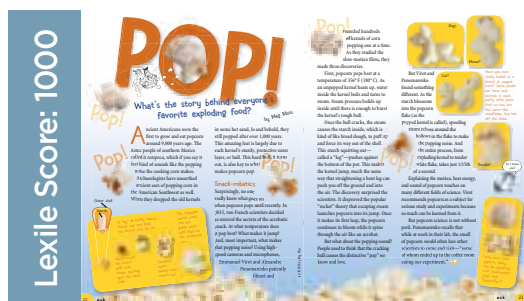
Create a deck of cause/effect cards. On one side of an index card write the word Cause and an event from the article that caused something to happen. Write the word Effect on the flip side and describe the effect. Create 5-10 cards. Lay them out with either side showing. Have classmates guess what is on the other side.

Compare Information *CCSS Reading 1*

What are the pros and cons of Alfred Nobel's work? Make a chart, graphic, or other presentation to show the destructive and productive effects of his work.

Journalistic Writing *CCSS Writing 1 & 3*

Write an article that might appear in a Stockholm newspaper in 1896. Share the news of the Nobel Prize and describe Alfred Nobel's life using details from the article to help you write. Decide whether you will write about him in a positive or negative way. Consider what you want readers to know about Nobel.



What creates the pop in popcorn? Learn the history and science of this explosive snack.

ESSENTIAL QUESTION

How are explosions used in positive ways to benefit people?

SCIENCE CONCEPT

Heat is energy that causes chemical and physical changes.

CROSS-CURRICULAR EXTENSION

Science

View a slow motion video of popcorn popping. See if you can observe the starch expanding and pushing the kernel into the air.

KEY VOCABULARY

acrobatic (p. 22) able to make difficult and skillful movements

ancient (p. 22) very old, having lived or existed long ago

PREPARE TO READ

Distribute a kernel of popcorn to each student to observe. Have students write what they think happens to the kernel that makes it pop. Explain that they should compare their ideas to information in the article as they read.

CLOSE READING QUESTIONS

- Underline details that describe the forces that cause popcorn to pop.
- Highlight the information in the article that appeals to the five senses. Which senses are most often appealed to?
- In what ways did Emmanuel Viot and Alexandre Ponomarenko use scientific thinking? Cite text details to support your answer.

COMMON CORE CONNECTIONS

Describe Relationships *CCSS Reading 3*

Describe how water is involved in the process of popcorn popping. What stages does water have to go through in order for the popcorn kernels to pop?

Draw Inferences *CCSS Reading 1*

The author explains that people have only recently learned what happens when popcorn pops (p. 22). Why do you think it took this long to find out?

Compare Information *CCSS Reading 1*

Revisit the ideas about popcorn that you wrote down before reading the article. What ideas do you want to add or change now that you have read the article?

ARTICLE: Rats to the Rescue

Magazine pages 24 - 27, Expository Nonfiction



What does a hero look like? In this article it happens to have whiskers and a long naked tail! Find out why rats are considered heroes in many parts of the world.

ESSENTIAL QUESTION

How are explosions used in positive ways to benefit people?

SCIENCE CONCEPT

Animals are adapted to survive through their unique behaviors and physical attributes.

CROSS-CURRICULAR EXTENSION

Social Studies

Using a world map, locate the countries mentioned in the article. Discuss reasons why these countries have a land mine problem.

KEY VOCABULARY

handler (p. 25) a person who trains or controls an animal

scurry (p. 25) to move quickly and with short steps

tuberculosis (p. 27) a serious disease that mainly affects the lungs

PREPARE TO READ

Invite students to share what they know about land mines and why they are dangerous even after a war has ended. Then ask how they feel about rats. Preview the photos in the article and suggest that students' negative opinions of rats might change as they read.

CLOSE READING QUESTIONS

- Why are land mines a problem? Cite evidence from the text to support your answer.
- Underline details that reveal the author's feelings about rats. Then summarize her feelings.
- What are the benefits of using rats to find land mines? Use article information to support your answer.

COMMON CORE CONNECTIONS

Analyze Key Ideas and Details *CCSS Reading 1 & 3*

What traits do rats have that make them especially well-suited to locating land mines? Which of these traits are physical? Which have to do with a rat's behavior?

Describe Relationships *CCSS Reading 3*

With a partner, discuss the steps involved in training a rat to locate land mines. Then work together to come up with another way rats might be helpful to humans. Explain the steps you would take to train a rat for your purpose.

Narrative Writing *CCSS Writing 3*

Write a news article about a fictitious rat hero. Use the words who, what, when, where, why, and how in your story. Be sure to add engaging facts and information based on your reading.

CROSS-TEXT CONNECTIONS WITH MULTIPLE ARTICLES

SYNTHESIZE: Guide students to compare articles they read. Help students find the connections between pieces of information in multiple texts. Use prompts, such as the following examples, to have students work together to **Integrate Ideas and Information** (CCSS.Reading.9).

- Combine the information in “The Day the Medicine Exploded” (p. 12) and “Alfred Nobel” (p. 17) to create a chart of facts about the development of explosives. Place the facts in chronological order to show how new ideas sprang from the research, errors, and inventions that came before.
- Compare the uses of explosives in “Rats to the Rescue” (p. 24) and “The Day the Medicine Exploded” (p. 12). What are some of the negative uses of these controlled forces? On the whole, have explosives done more good or more harm in the world?
- Using information from multiple articles, format a response to the essential question: **How are explosions used in positive ways to benefit people?**
- Use multiple articles to help you explain what is necessary to create an explosion and to compare what occurs when different objects explode.

EXPLORATORY LEARNING - FLEXIBLE MINI-UNIT DESIGN

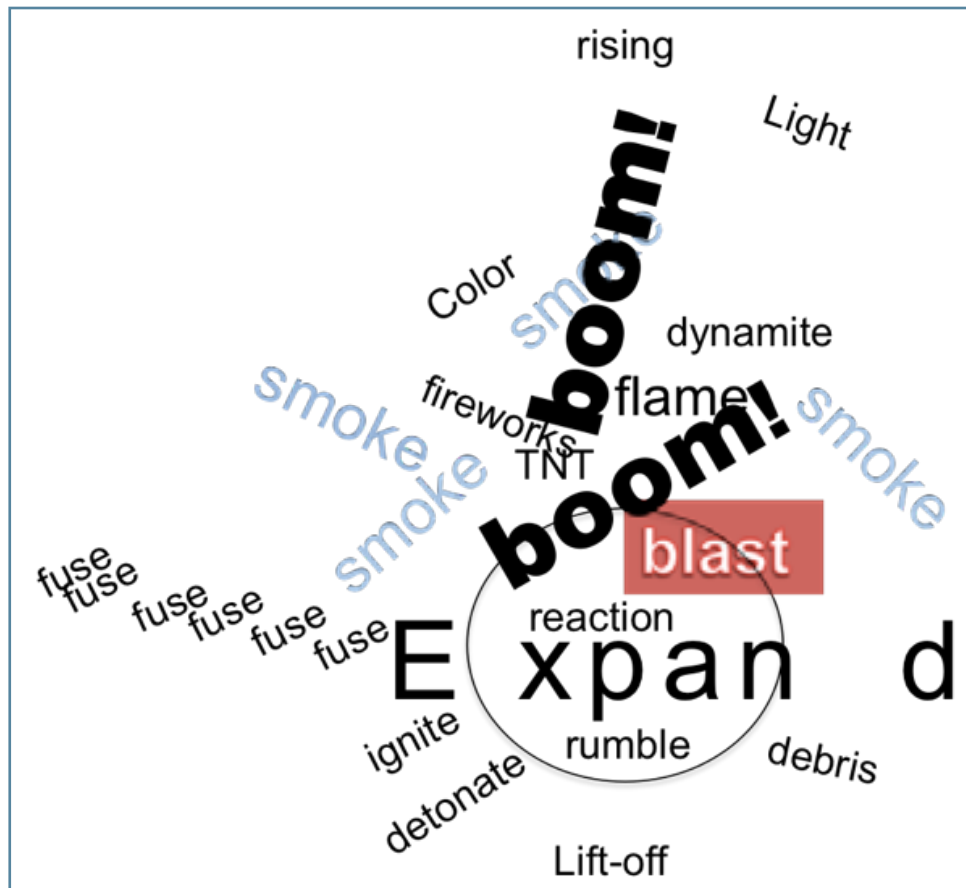
The mini unit offers three levels of activities. The Engage section helps activate prior knowledge. Compare Articles offers additional ways to use information from multiple articles and prepares students to integrate their ideas and knowledge in the Apply activity.

ENGAGE

READ AND COMPARE

APPLY

ENGAGE: Engage students in the topic of explosions by creating a word web. The web should include any words and concepts that come to students' minds when they think about the articles and the different explosions and explosives in the magazine. You may want the students to scatter the words into an exploding form, with some words bigger than others for emphasis. (Below is an example.) Students can use a computer or magic markers and paper to create their webs.



Share the essential question:

How are explosions used in positive ways to benefit people?



READ AND COMPARE: Begin with a focus article as a base for building content knowledge and model how to work through the text.

1) READ ALOUD: Use “Alfred Nobel” (pgs. 17-21) as a focus article, or choose a different article that works well for your teaching goals. Share the article summary on page 7 of this guide. Students can read their own copies of the article and use sticky notes to mark places they find interesting or have questions about.

2) DISCUSS THE ARTICLE: After reading, guide students to talk about the article. See the Article Pages for Close Reading Questions.

3) READ NEW ARTICLES: Help students choose additional articles to read based on their inquiry questions or what they find interesting. Refer to the Article Pages for summaries of each article within *Ask: Boom!*.

4) COMPARE ARTICLES: After students have read multiple articles, guide them to make cross-text connections. Refer to page 9 to compare articles using prompts that help students integrate ideas and information.

CHOOSE A PURPOSE FOR READING

CLOSE READ *CCSS Reading 1* Mark the text, noting important details and highlighting what interests, surprises, or confuses you.

UNDERSTAND MAIN IDEAS TO DEVELOP EXPERTISE *CCSS .Reading .2* Record the main ideas in the article. Note how these main ideas build on the main ideas from the focus article. How is your topic knowledge growing?

REVIEW GRAPHIC FEATURES *CCSS Reading 7* Examine graphic features within this issue and describe how the images, charts, diagrams, and photographs enhance your understanding of the content.



APPLY: EXPLODING EXPERIMENT

Working in teams, students will use the “Exploding Experiments” lab report handout (p. 15) to guide them as they conduct one of the experiments outlined below. They will fill in the shaded section of the lab report before the experiment and the other two sections either during the experiment or after they have completed it. Each team will then demonstrate their experiment for the class and share what they learned from it.

Please Note: These experiments should be monitored. Students will need to wear safety goggles and use a covered table, sink, or outdoor area.

Team 1: Gas Launcher

Materials: Alka-Seltzer tablet, water, small plastic container with snap on lid (film canister), safety goggles

Steps:

1. Add water to fill the canister half-full.
2. Add half of the Alka-Seltzer tablet and quickly snap on the lid.
3. Immediately place the canister on a table or the ground.
4. Stand back to observe what happens.

Team 2: Big Blast!

Materials: plastic sandwich bag, water, paper towels, scissors, baking soda, vinegar, measuring cups and spoons, safety goggles

Steps:

1. Cut a paper towel into a 6-inch square.
2. Pour 2 tablespoons of baking soda in the center of the towel square and fold it into a packet.
3. Pour $\frac{1}{4}$ cup warm water and $\frac{1}{2}$ cup vinegar into the plastic bag.
4. Holding the plastic bag by the top, insert the packet, pinching it so it doesn't drop into the liquid until the bag is sealed.
5. Once sealed, shake the bag quickly so the packet goes into the liquid and drop the bag in the sink or on the ground if outdoors.
6. Stand back to observe what happens.

Team 3: Balloon Pop!

Materials: 6-inch or smaller balloons, hand air pump, marker, pin, safety goggles

Steps:

1. Blow up 5 or more balloons with different amounts of air and tie them closed.
2. Use a marker to number the balloons from lowest amount of air to highest amount.
3. Use the pin to pop each balloon.
4. Record which balloons make a sound when popped and which make the loudest sound.

NAME: _____

Exploding Experiments

Team Number:
Team Members:

Experiment:

Purpose:

Predictions: (Complete this section *before* you conduct the experiment.)

Observations and Measurements:

Questions About Results:

Further Tests and Outcomes:

Summary:

Unanswered Questions:

NAME: _____

ANALYZE GRAPHIC FEATURES

GRAPHIC FEATURE	PAGE LOCATION	HOW THIS FEATURE HELPED YOUR UNDERSTANDING

NAME: _____

CONCEPT CHART

Show how reading multiple articles developed your understanding of the essential question or your own inquiry question.

ESSENTIAL QUESTION OR INQUIRY QUESTION:

ARTICLE 1:

ARTICLE 2:

ARTICLE 3:



acrobatic able to make difficult and skillful movements

*In 2015, two French scientists decided to unravel the secrets of the **acrobatic** snack. (p. 22)*

alchemist a person who studies alchemy, a science that was used in the Middle Ages with the goal of changing ordinary metals into gold

*Long ago in ancient China, **alchemists** spent a lot of time looking for a magic potion that would make them live forever. (p. 12)*

ancient very old, having lived or existed long ago

***Ancient** Americans were the first to grow and eat popcorn around 9,000 years ago. (p. 22)*

charge the amount of an explosive material (such as dynamite) that is used in a single blast

*A central **charge** of black powder sets off the stars. (p. 16)*

choreographers people who decide how a dancer or group of dancers will move during a performance

*Like **choreographers** creating a ballet, engineers plan which columns and walls to knock out, and in what order. (p. 6)*

demolish to forcefully tear down or take apart a structure

*Although breaking up buildings with explosives might sound dangerous, "it's really the safest and best way to bring a building down," says Jamie Makin, a **demolition** expert. (p. 6)*

diatomaceous consisting of or containing the fossil remains of tiny organisms called diatoms

*The soil near the German factory was special, filled with tiny fossils—a kind of soil called **diatomaceous** earth. (p. 20)*

dynamite a powerful explosive that is often used in the form of a stick

*Without the blasting cap (added at the last minute), the nitroglycerin dough would not explode. Nobel called his new, safe explosive "**dynamite**." (p. 20)*

fiery having or producing fire

*He also makes **fiery** paintings by laying thin trails of gunpowder in a stencil cutout, then lighting the trail under a protective cover. (p. 11)*

handler a person who trains or controls an animal

*The rats' human **handlers** carefully stretch a long rope across the mine-filled area. (p. 25)*

ignites sets something on fire

*When a spark **ignites** black powder, it burns very rapidly, releasing a lot of gas very quickly, which makes an explosion. (p. 16)*

implode to collapse inward in a very sudden and violent way

*When the building's skeleton breaks, it collapses, or **implodes**, under its own weight. (p. 8)*

nitroglycerin a liquid that is used in making explosives and in medicine

*So they kept experimenting. In 1847, Italian chemist Ascanio Sobrero invented **nitroglycerin**, a thick oil that exploded violently with no smoke. (p. 15)*

purify to remove dirty or harmful substances

*They used potassium nitrate, or saltpeter, to **purify** metals and make spooky white fires. (p. 12)*

scorched burned onto the surface of something

*As the powder burns, it leaves a **scorched** picture behind. (p. 11)*

scurry to move quickly and with short steps

*Attached to the rope by a long leash, one specially trained rat **scurries** back and forth across the field, sniffing. (p. 25)*

tuberculosis a serious disease that mainly affects the lungs

*In fact, the Hero Rats have proven so good at smelling trouble that now they have a new job—sniffing blood samples to detect **tuberculosis** and other diseases. (p. 27)*



“What a Blast!”

- <https://youtu.be/oiftDBtCFt8>

Watch a video of the demolition of the Seattle Kingdome Stadium!

“Exploding Art”

- <https://youtu.be/MrTrKJQnwJs>

Watch Cai Guo Qiang creating his exploding art and hear him describe why he chooses to use this unusual method.

“Alfred Nobel”

- http://inventors.about.com/od/dstartinventions/a/Alfred_Nobel.htm

Learn more about Alfred Nobel and the history of dynamite through text and video.

- <http://www.nobelprize.org/>

Learn about Nobel Prize winners and the history of the prizes on this official site.

“Pop!”

- <https://youtu.be/3cqijNn5oJo>

Observe rats and trainers in action in this informative and fascinating video.