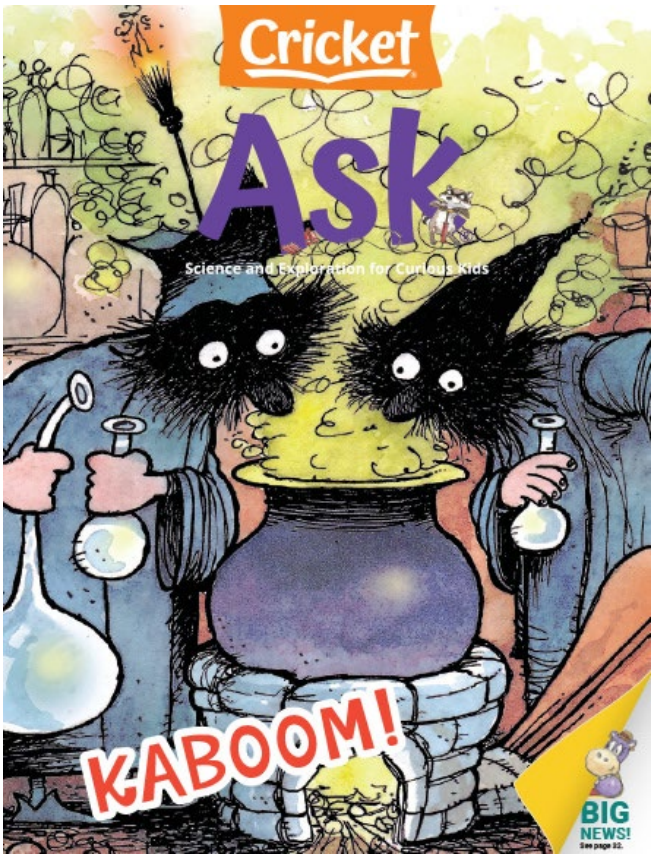
Ask® Teacher Guide: July/August 2025

Ask®



Kaboom!

This month's issue of ASK magazine studies explosive topics from structural detonation to the chemical and physical changes of a popcorn kernel. Readers will also gain an understanding of the paradoxical life of Alfred Nobel—inventor of dynamite and sponsor of the world's most renowned peace award.

CONVERSATION QUESTION

How can controlled explosions be beneficial?

TEACHING OBJECTIVES

- **Students will learn how explosives help to demolish buildings safely.**
- **Students will learn about inventor and Nobel Prize creator, Alfred Nobel.**
- **Students will learn the science and history of popcorn, the world's favorite exploding snack.**
- **Students will collect evidence from text and graphics to support a claim.**
- **Students will examine how scientific knowledge can be used for different purposes with different results.**
- **Students will analyze how events influence experiences.**
- **Students will sequence and explain a studied process.**
- **Students will participate in a small-group science experiment.**
- **Students will conduct research on a chosen Nobel Prize winner.**
- **Students will use a mathematical process to solve a theme-based word problem.**

In addition to supplemental materials focused on core STEAM skills, this flexible teaching tool offers vocabulary-building activities, questions for discussion, and cross-curricular activities.

SELECTIONS

- **What a Blast!**
Expository Nonfiction, 920L
- **Alfred Noble**
Expository Nonfiction/Biography, 770L
- **Pop!**
Expository Nonfiction, 1030L

Ask® Teacher Guide: July/August 2025

What a Blast!

pp. 6–10, Expository Nonfiction

Kaboom! This article invites readers to an actual demolition site to witness the controlled explosion of a large structure. The professionals who use these techniques and materials explain why it is the safest way to bring down a building.

Lexile: 920L


What a Bla

What do you do with a worn-out building? Call in the explosion experts.

by Peter Barile; photos by Controlled Demolition, Inc.; art by Mark Hicks

One spring day in Seattle, curious spectators gathered at a safe distance to watch the huge Kingdome stadium get demolished. Pop! Crack! Roar! In less than a minute, it was all done.

New Walls for Old

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. Knocking apart a building with bulldozers, jackhammers, and cranes takes a long time and many people. It can block traffic and fill the air with dust for months. A blast is over quickly, and cleanup can start right away.

Using explosives to demolish a building doesn't mean blowing it up. Instead, it's collapsed. Like choreographers creating a ballet, engineers plan which columns and walls to knock out, and in what order. With careful timing, they can control how fast and in what direction the building falls.

They use just a small bit of explosive to get things moving. The charges don't all go off at once in a huge blast. Instead, they detonate one after another, so each part of the building collapses in the right order. All of this is controlled by wires, timers, and a master switch.

My job is a blast!

Need to lay down my load!

Preparing for a safe blast takes a lot of careful work.

6 ask

RESOURCES

Collect Evidence: Big Blast

OBJECTIVES

- Students will learn how explosives help to demolish buildings safely.
- Students will collect evidence to support a claim.
- Students will participate in a small-group science experiment.

KEY VOCABULARY

- ***demolish* (p. 6)** to forcefully tear down or take apart a structure
- ***detonate* (p. 6)** explode or cause to explode
- ***implosion* (p. 8)** an instance of something collapsing inward from external pressure
- ***rubble* (p. 10)** broken fragments of rock resulting from the decay or the destruction of a building

ENGAGE

Conversation Question: How can controlled explosions be beneficial?

Invoke prior knowledge by asking students what they know about demolition and if they have seen buildings taken down. Introduce the article, "What a Blast!" and tell students that they will learn how huge structures such as Seattle's Kingdome Stadium are systematically collapsed. Invite students to share how they think this was done, then show them a video clip of the actual implosion from March 2000 (readily available online).

INTRODUCE VOCABULARY

Post and review the four vocabulary words. Inform students that all of these terms will be found in the article presented in the introduction. Have them use the vocabulary terms (**demolish**; **detonate**; **implosion**; **rubble**) to talk about what they saw in the Kingdome Stadium video clip. Revisit the words after the reading and challenge students to write a brief summary of the article, incorporating all four words.

READ & DISCUSS

Have students read the article independently and answer the questions in complete sentences. Discuss and share answers aloud.

1. Explain the job of a demolition expert.
2. What kind of tasks have to be done before the blasting can begin?
3. What kind of vehicles and equipment would be present at a blasting site?
4. What are some reasons that a building may need to be demolished?
5. What is released into the air when explosives are set off?

SKILL FOCUS: Collect Evidence

INSTRUCT: This article gives the reader a detailed account of the implosion techniques used for demolishing large structures, specifically Kingdome Stadium. Have students reread the article with a partner and use the graphic organizer, *Big Blast*, to record and cite the evidence that supports the given claim.

ASSESS: Review the evidence on the worksheet. Discuss how explosives can be both destructive and beneficial.

EXTEND

Science: Arrange students into small groups to complete the *Big Blast* experiment. Materials: plastic sandwich bag, water, paper towels, scissors, baking soda, vinegar, measuring cups and spoons and safety goggles. Procedure: 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 ¼ cup warm water and ½ 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. Observe and draw a conclusion.

Big Blast

Collect Evidence Gather evidence from the article to support each claim listed below. Include details and cite your findings by using page numbers.

Claim: Although breaking up buildings with explosives might sound dangerous, it is really the safest and best way to bring a building down.
Supporting evidence (p. _____)
Claim: Before the blasting can begin, experts must do a lot of planning.
Supporting evidence (p. _____)
Claim: There are many reasons a building may have to come down.
Supporting evidence (p. _____)

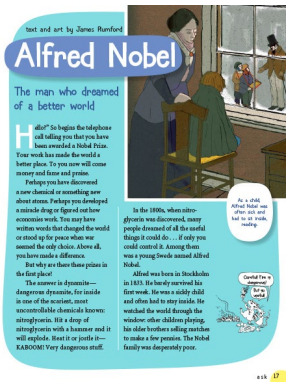
Ask® Teacher Guide: July/August 2025

Alfred Nobel

pp. 17–21, Expository Nonfiction

Alfred Nobel established the famous Nobel Prize with the dream of supporting those who work for peace. This article explains why his legacy would be surprising to many who lived in his lifetime.

Lexile: 770L



RESOURCES

Analyze Influence: Medal of Honor

OBJECTIVES

- Students will learn about inventor and Nobel Prize creator, Alfred Nobel.
- Students will examine how scientific knowledge can be used for different purposes with different results.
- Students will analyze how events influence experiences.
- Students will conduct research on a chosen Nobel Prize winner.

KEY VOCABULARY

- ***diatomaceous earth* (p. 20)** soil that consists of or contains fossilized remains of tiny organisms called diatoms (microscopic algae)
- ***modest* (p. 20)** neither bold nor self-assertive

ENGAGE

Conversation Question: How can controlled explosions be beneficial?

Discuss the age-old question: *Should you be judged by the worst thing you did in your life or the best?* Give the class a few minutes to debate the topic. Suggest to students that since people are always changing from their experiences they are rarely as good as the best thing they've done, but neither are they as bad as the worst thing they've done. Introduce the article, and tell the class that they will see how the ethical question was relevant to Alfred Nobel's life and legacy.

INTRODUCE VOCABULARY

Post the key vocabulary words and discuss the meanings of the terms. Then display the following prompts and have students discuss responses with a partner.

- What would you expect to find if you were digging in **diatomaceous soil**? Where would you be likely to find this soil?
- Tell about a time that you had **modest** expectations but were surprised by something impressive.

READ & DISCUSS

Reinforce comprehension of the concepts in this article by using the following prompts to direct discussion.

1. What are some reasons that an individual may be awarded a Nobel Prize?
2. Why was nitroglycerin one of the scariest chemicals known to man? How did Alfred remedy the problem?
3. What was Alfred Nobel's goal when he returned to Russia as a young man?
4. Describe Alfred Nobel's early life in Stockholm.
5. Why did Alfred admire the poet Percy Shelley?

SKILL FOCUS: Analyze Influence

INSTRUCT: This article supplies the reader with many situational details about Alfred Nobel's life. Certain experiences and events brought him great riches, but also great strife. Present the graphic organizer, *Medal of Honor*, and tell students that they will be examining the circumstances and events that shaped Alfred's life work.

ASSESS: Collect worksheets to assess students' understanding.

EXTEND

ELA Research: Page 21 of the article states, "Nobel Prizes for chemistry, physics, medicine, literature, economics, and peace are awarded every year. Each winner receives around a million dollars, a diploma, and a solid gold medal…" Among the famous winners are Albert Einstein, Marie Curie, Barack Obama, and Malala Yousafzai. As of this printing, there have been 976 Nobel Prizes awarded. Have each student choose a winner and conduct research that includes: early life and background information, the field the prize was awarded in, the specific work that lead to the recognition, and its impact on the world.

Medal of Honor

Analyze Influence Use the spaces below to provide detailed answers to the questions posed. Once completed, this series of answers should provide great insight into Alfred Nobel's life and work.

Questions: *Life and Events*	Answers: *Details*
How did Alfred Nobel's childhood experience prepare him for his future career?	
What important events in Alfred Nobel's career influenced his work and discoveries?	
How did Alfred Nobel become rich when he was alive?	
What is the legacy of Alfred Nobel?	

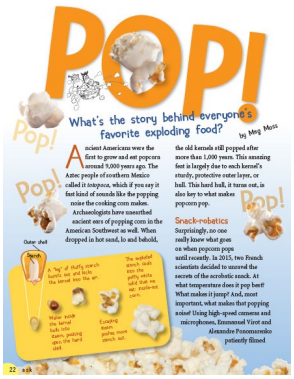
Ask® Teacher Guide: July/August 2025

Pop!

pp. 22–23, Expository Nonfiction

The United States is the largest consumer of popcorn globally, eating almost 17 billion quarts of popcorn per year. Students will learn the science and history of this explosive snack.

Lexile: 1030L



RESOURCES

Sequence a Process: Pop Process

OBJECTIVES

- Students will learn the science and history of popcorn, the world's favorite exploding snack.
- Students will sequence and explain a studied process.
- Students will use a mathematical process to solve a theme-based word problem.

KEY VOCABULARY

- ***acrobatic* (p. 22)** able to make difficult and skillful movements
- ***feat* (p. 22)** an achievement that requires great courage, skill, or strength
- ***peril* (p. 23)** serious and immediate danger

ENGAGE

Conversation Question: How can controlled explosions be beneficial?

Tell the class that the word, *pareidolia*, refers to the perception of a familiar object, face, or pattern in a random visual stimulus. (Example: seeing a T-rex in the clouds.) Distribute a few popped pieces of popcorn to each student and have them discuss what they see. Allow students to switch desks to view other pieces of popcorn. When previewing the article, have students notice the examples of pareidolia on page 23. After reading the article, students can classify their pieces as mushroom or butterfly blossoms according to the criteria in the final text box.

INTRODUCE VOCABULARY

Post and review the three vocabulary words. Inform students that all of these terms will be found in the article, "Pop!" Have them use the vocabulary terms (**acrobatic; feat; peril**) to accurately complete the following cloze sentence: *Performing the _____ high wire routine without a net was a dangerous _____ that put the circus performer in great _____*. Challenge students to create their own super sentence using all three words. Emphasize the words in the reading.

READ & DISCUSS

Pose the following questions to facilitate meaningful discussion.

1. According to experts, who were the first people to grow and eat popcorn? When?
2. What is the key to what makes popcorn pop?
3. How did Virot and Ponomarenko unravel the secrets of popcorn?
4. How was the popular "rocket theory" of popcorn discovered?
5. What fields of science have been employed in the quest to find out more about popcorn?

SKILL FOCUS: Sequence and Explain Process

INSTRUCT: Review the article and guide students to notice that there is a specific process that a corn kernel undergoes before it pops. Distribute the *Pop Process* graphic organizer and instruct students to condense the process into four important steps that unravel the mystery of how popcorn pops.

ASSESS: Circulate as students are working and have them retell the process in their own words. Collect and evaluate charts for accuracy.

EXTEND

Mathematics: Have students consider how dramatically popcorn kernels expand when they are popped (40-50 times their original volume!). Have students use the RWD (Read-Write-Draw) process to solve the following questions: ***When ¼ cup of popcorn kernels are popped, they create 8 cups of popcorn.*** A) *How many cups of popcorn would 1 cup of kernels produce? B) What fraction of a cup of kernels are needed to yield one quart of popcorn?* Students may need the following conversion: 4 cups = 1 quart. (**Answers:** A) 32 cups; B) 1/8 cup)

Pop Process

Explain and Sequence Process Review the article. Explain the process of how popcorn pops in four detailed steps.