

ask

Oodles of Noodles

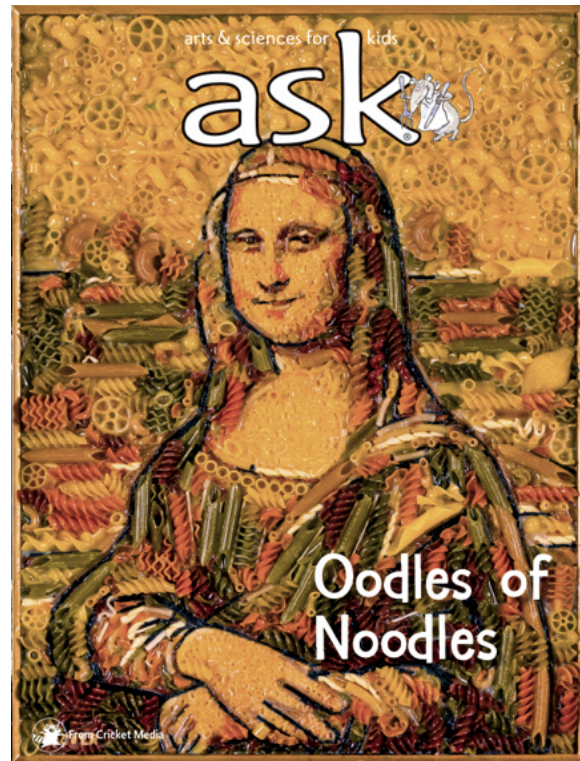
Long, flat, round, or skinny, noodles are popular around the world. Find out why by reading articles that investigate their origins, how they are made, and an inventor who made noodles a quick and tasty meal enjoyed by millions.

CONVERSATION QUESTION

What makes pasta popular around the world?

TEACHING OBJECTIVES

- Students will learn about the history and cultural significance of pasta
- Students will learn about the steps and machines used to make pasta in a factory
- Students will learn about the invention of ramen noodles
- Students will obtain and evaluate information
- Students will construct explanations
- Students will describe how inventors ask questions and define problems
- Students will construct and use maps
- Students will use design thinking to solve a problem
- Students will identify cause-and-effect relationships



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

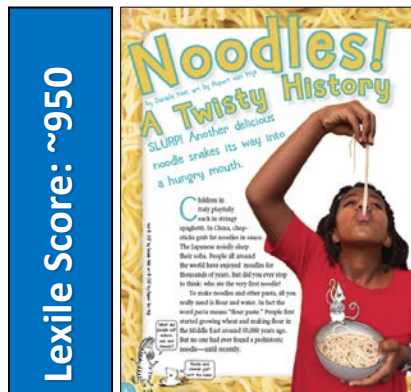
SELECTIONS

- **Noodles! A Twisty History**
Expository Nonfiction, ~950L
- **At the Pasta Factory**
Expository Nonfiction, ~550L
- **Magic Noodles**
Expository Nonfiction, ~850L

Noodles! A Twisty History

pp. 6–11, Expository Nonfiction

Use this article to teach how plants are important to culture, while providing students practice obtaining information and using topic-specific words.



RESOURCES

- Great Grains Graphic Organizer

OBJECTIVES

- Students will read and analyze a nonfiction science article
- Students will obtain and evaluate information
- Students will construct and use maps

KEY VOCABULARY

- **millet (p. 7)** a plant that grows in dry and poor soils, producing seeds used to make flour
- **vermicelli (p. 9)** pasta made in long thin strips
- **durum (p. 10)** a variety of wheat often used to make pasta
- **semolina (p. 10)** hard grains left after milling flour

ENGAGE

Conversation Question: What makes pasta popular around the world?

Mix a combination of different types of dried pasta into containers for groups of students to observe. As they sort through the different noodles, have them list science and social studies related questions about pasta.

INTRODUCE VOCABULARY

Have students highlight or underline unfamiliar words in this article. Explain that many of these words come from different cultures. Ask students to look for context clues in the article that help show the origin of pasta-related words.

READ & DISCUSS

Have students read the article with a partner, then use the following prompts in a class discussion to address the conversation question: What makes pasta popular around the world?

- What made pasta a practical food in ancient times?
- How did pasta-making move from region to region?
- Why do you think pasta is still a popular food today?

CONCEPT/SKILL FOCUS: Obtain Information

INSTRUCT: Guide students to obtain information about the plants used to make pasta. Use the *Great Grains* graphic organizer to record what they find in the article. In the second part of the graphic organizer, students are prompted to obtain the names of different types of pasta and create a word search for a partner.

ASSESS: Use the graphic organizer to assess if students recorded the different grains and their uses from the article. The word search should include names of pasta and not other vocabulary words.

EXTEND

Social Studies Provide students with a world map and have them make pasta symbols to place on the locations found in the article. They can also include labels and dates for the type of pasta and when it was first found to have been used in these areas.

Great Grains

Plants are an important part of culture and history. This article explains how many parts of the world made pasta. Look for information about the different plants that allowed people to make these delicious noodles and add information to the chart below.

| Page | Grain | Importance to Pasta |
|------|--------|--|
| 6 | Millet | The Chinese made noodles from millet as early as 2000 B.C.E. |
| | | |
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Use the grid below to create a word search for a partner. Search the article for words that name different types of pasta and place them in the grid vertically, horizontally, or diagonally. Fill in the empty spaces with random letters. Exchange your papers and try your luck at another's word search.

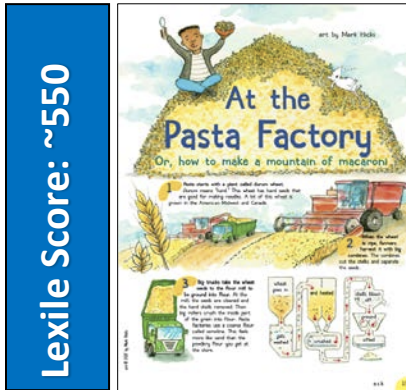
Pasta Word Search

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At the Pasta Factory

pp. 17–19, Expository Nonfiction

This article shows the steps and machines used to make pasta. Use this article to teach how technology helps solve problems by making pasta more efficiently.



RESOURCES

- Pasta Making Machines Graphic Organizer

OBJECTIVES

- Students will read and analyze a nonfiction science article
- Students will construct explanations about how machines are used to increase efficiency
- Students will use design thinking to solve a problem

KEY VOCABULARY

- **durum** (p. 17) a variety of wheat often used to make pasta
- **combine** (p. 17) a machine that cuts crops and separates the seeds of the plant from the rest of the plant
- **semolina** (p. 17) hard grains left after milling flour

ENGAGE

Conversation Question: What makes pasta popular around the world?

Explain that the main ingredients in pasta are flour, water, salt, and sometimes eggs. The dough is stretched and cut into shapes and dried. Ask students to work with a partner to draw a diagram of steps they think are needed to make pasta in a factory.

INTRODUCE VOCABULARY

Have students locate the vocabulary words in the article and explain to a partner how each word relates to pasta. Have students record any other unfamiliar words as they read the article and look for context clues that explain how these words relate to the topic.

READ & DISCUSS

Have students read the article with a partner, then compare the process for making pasta with the steps they included in their diagram during the Engage part of the lesson. Have students discuss the content of the article as they revise their diagrams, adding the most important steps they left out.

CONCEPT/SKILL FOCUS: Constructing Explanations

INSTRUCT: Have students review the article and use the *Pasta Making Machines* graphic organizer to record information about the machines used to make pasta. They will list these machines, describe their purpose, and explain what problem each machine solved to make pasta more easily. Explain that these machines were developed over time to develop more efficient ways to make pasta.

ASSESS: Use the graphic organizer to assess if students were able to list the machines and explain how each machine is used to make pasta efficiently.

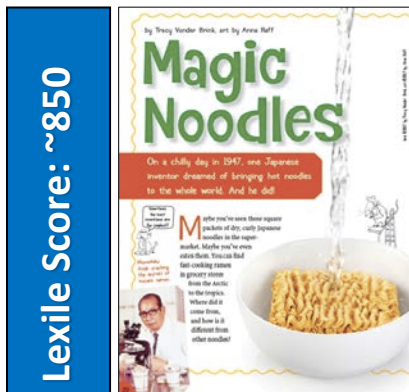
EXTEND

Engineering Design Have students look at step 5 in the pasta factory. Ask what the man standing at the top of the machine is doing (adding water). Ask if this looks like an efficient way to do this job. Then have students draw a machine that could add the water for a safer and more efficient way to complete this step.

Magic Noodles

pp. 20–23, Expository Nonfiction

Students learn about Momofuku Ando's invention of ramen noodles. Use this article to teach how inventors design solutions to a problem.



RESOURCES

- Traits of an Inventor Graphic Organizer

OBJECTIVES

- Students will read and analyze a nonfiction science article
- Students will describe how inventors ask questions and define problems
- Students will identify cause-and-effect relationships

KEY VOCABULARY

- **ramen** (p. 21) quick-cooking thin noodles
- **seasoned** (p. 22) flavored with spices

ENGAGE

Conversation Question: What makes pasta popular around the world?

Show students a package of ramen noodles and ask if anyone has eaten them at home. Invite students to explain how they are prepared for eating. Explain that they will be reading an article about the man who invented them and why these noodles are special.

INTRODUCE VOCABULARY

Have students locate the vocabulary words in the article and explain to a partner how both words relate to the topic.

READ & DISCUSS

Have students read the article with a partner, then facilitate a class discussion with the following prompts:

- What made Momofuku Ando want to invent a different type of noodle?
- What were some keys to his success?
- Why are ramen noodles so popular?

CONCEPT/SKILL FOCUS: Ask Questions and Define Problems

INSTRUCT: Explain that inventors, like scientists, need to ask questions and define problems to come up with a solution that works. Provide students with the *Traits of an Inventor* graphic organizer to find evidence of the listed traits of successful inventors. They will record the page number and describe what Momofuku Ando did as examples of each trait.

ASSESS: Use the graphic organizer to assess if students found sufficient evidence to support the traits in the graphic organizer. This chart also demonstrates their understanding of the importance of asking questions and defining problems.

EXTEND

Social Studies Have students work in groups to fill in a simple cause-and-effect chart using information in the article to show these relationships. If students are stuck, ask them questions to help them make these connections:

- What caused Momofuku Ando to want to make a new kind of noodle?
- What caused Momofuku Ando to package ramen noodles in cups?
- What effect did seeing tempura fried have on his invention?
- What is the effect of having ramen noodles to space food?

Traits of an Inventor

Momofuku Ando is an example of what it takes to be a successful inventor. Fill in the chart below with examples of how he demonstrated each trait when inventing the popular ramen noodles.

| Page | Trait | How Momofuku Ando Demonstrates These Traits |
|------|---------------------------|---|
| | Inspired to invent | |
| | Recognizes problems | |
| | Sets goals | |
| | Hard work | |
| | Does not give up | |
| | Improves on invention | |
| | Applies ideas to new uses | |