



Fictional Element

CHEMISTRY: Elements & The Periodic Table

PAGES 12-13, Lexile 880

NEED A LOWER READING LEVEL?

Go to scholastic.com/scienceworld to access a version of this article with a lower reading level.

VIDEO EXTRA:
Watch a video about the discovery of different elements at scholastic.com/scienceworld.

OBJECTIVE

Gather evidence about trends on the periodic table to write an argument about where a fictional element might belong.

crosscutting concept

practice

core idea

STANDARDS

NGSS:

Practice: Engaging in Argument From Evidence

Crosscutting Concept: Patterns

Core Idea: PS1.A: Structure and Properties of Matter

COMMON CORE:

Writing: 1. Write arguments to support claims, using valid reasoning and relevant evidence.

TEKS: 6.5A, 6.6A, 7.2E, 8.5C, C.5A, C.5B, C.5C

FEATURED LESSON PLAN

1 ENGAGE

Have students open their magazines to pages 12 and 13 and read the text on page 12 silently. When everyone has finished, ask students the question under the headline: Can a made-up element featured in the movie *Black Panther* help explain how the periodic table is organized? Prompt them to discuss how the properties of an element help determine where it sits on the periodic table. Discuss what students learned in the text about the properties of vibranium. What similarities does vibranium have to real-life elements?

2 EXPLORE

Critically analyze the diagram of the periodic table on page 13 as a class. Carefully read each caption to understand the trends that occur on the periodic table. When you have finished studying the table, give the class several examples of the properties of a mystery element and ask where it would sit on the table based on its properties. (*for example, an element that can conduct electricity or a radioactive element*)

3 EXPLAIN

Separate students into groups of four or five. Have each group use index cards to create one card for each element with an atomic number from 1 to 92. The cards should include basic information about each element, such as element name, abbreviation, atomic number, and atomic mass. When all groups have finished making their cards, have everyone put away any references to the periodic table. Challenge students to use their element cards to create the periodic table with their groups. They should use only the information provided on each card and their memories of how the periodic table is constructed. Allow groups to discuss with one another if they have questions or problems.

4 EVALUATE

Print out the “Classifying Vibranium” skills sheet available in the teaching resources package at scholastic.com/scienceworld. Have students work with a partner to gather information from the article about the properties of vibranium. Each student pair will write a claim, evidence, and reasoning (CER) paragraph explaining where they think vibranium would fit on the periodic table. (*For more information about CER, refer students to the “Explain Yourself” poster included with your print issues.*) Ask for several volunteers to present their explanations. Did students make the same conclusions? Why or why not?

5 EXTEND

Challenge students to research another fictional element, such as adamantium, and use the same process to determine where that fictional element might fit on the periodic table.

Available at scholastic.com/scienceworld.

INTERDISCIPLINARY ASSESSMENT PACKAGE



CHEMISTRY

Classifying Vibranium

Students will use evidence from the article to determine where vibranium would fit on the periodic table.



ENGINEERING

Electric Element?

Students will build a conductivity tester to test whether graphite is a conductor or an insulator.



PHYSICS

Shock Absorber

Students will learn more about how the fictional element vibranium can absorb and transform energy.