



ELL Adaptation For **BLAST IT: Learning About Copper!**

Students learn about the copper industry and practice vocabulary skills too.

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Grade Level	6-8
Duration	1-2 class periods

ELL Adaptation by	Patty Sepp
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SIOP Elements

Preparation Adapting content Linking to background Linking to past learning Strategies used	Scaffolding Modeling Guided practice Independent practice Comprehensible input	Grouping Option Whole class Small groups Partners Independent
Integrating Processes Reading Writing Speaking Listening	Application Hands on Meaningful Linked to objectives Promotes engagement	Assessment Individual Group Written Oral

TESOL Standard(s)

ESL: English For Content
Through The Use Of ESL Methodologies, The Student Will:
EFC-A. Create, read and interpret visual information relating to science, social studies and math.
 A5. Create visuals to present information.
EFC-C. Compose in a variety of forms.
 C1. Use Math, Social Studies, and Science target vocabulary.
 C5. Write reports using Math, Science, and Social studies target vocabulary.

Arizona ELP Standards

Stage IV
Basic
Reading
Standard 4: The student will analyze text for expression, enjoyment, and response to other related content areas. The student will demonstrate knowledge of reading comprehension by:
 B-8: summarizing the main idea and supporting details from text.
 B-21: applying understanding of content area vocabulary within math, science and social

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studies texts.

B-28: interpreting information in functional documents (e.g., maps, schedules, letters, graphic organizers) for a specific purpose.

Stage IV

Basic

Writing

Standard 5: The student will demonstrate research skills by using a variety of reference materials to complete a variety of writing tasks.

The student will demonstrate research skills by using a variety of reference materials to complete a variety of writing tasks as evidenced by the following:

B-1: summarizing events using topic sentences, main ideas, relevant facts, details, and concluding statements.

Overview

Of all the 50 states, Arizona is the leading state in copper production and is known as the “Copper State.” The copper industry is important to Arizona’s economy, employing thousands of people and bringing in billions of dollars. What has created such vast amounts of this mineral deposit in Arizona and how is it discovered are the topics of this lesson.

Key Vocabulary/Phrases

Volcanoes - Openings in the earth’s crust in which the magma can pass to the surface

Copper A reddish-brown metallic element that is an excellent conductor of electricity (end product) (Note: some copper rocks are a blue/green or gold color before being chemically processed into the reddish/brown copper)

Terraces - the various levels at an open pit mine (also called “benches”)

Shaft - vertical opening of an underground mine

Crust - inside of the earth 3-32 miles thick

Open pit mine - Large hole dug and developed for the removal of copper ore near the Earth’s surface (also called surface mining)

Underground mine - to dig beneath the Earth’s surface to remove copper

Additional Materials Needed for ELL

- ELL Map Activity Worksheet and Answer key
- Blast It Mural
- ELL Reading -Blast It: Learning About Copper
- Vocabulary cards with definitions cut off from the pictures

- Vocabulary cards without pictures

Procedures

Prerequisite Knowledge: Student should be familiar with cardinal directions: North, South, East, West prior to the mapping activity.

SESSION ONE

1. Exhibit a variety of items in front of the classroom. (See Materials section of regular lesson for some examples) Ask students if they know what *these items have in common*. After a brief discussion, explain that the items all contain copper. Without copper, we would not be able to use these items. How would they feel if they did not have these items? (**Grouping: Whole Class**)

2. Ask the students if they know anything about copper. List their answers on the board. Explain that they will learn more about exploration and discovery of copper in this lesson. (**Preparation: Linking to background**)(**Grouping: Whole Class**)

3. Most copper produced in the U.S.A. is from Arizona. Where are the copper mines located in Arizona? Using the “Copper Mines in Arizona Map”, students will locate major Arizona copper mines practicing cardinal directions. Do the ELL Map Activity Worksheet (**Application: Hands-on, Linked to Objectives, Promotes Engagement; Grouping: Partners, Individual**)

4. Show Mural on an overhead. Read “Blast It: Learning about Copper” as you point out the process of getting copper from the earth to its use in our final products. (You will begin in the left-hand corner where the CD, battery, etc. are and continue clockwise around the mural.) (**Grouping: Whole Class; Scaffolding: Guided Practice; Application: Promotes engagement**)

5. Distribute vocabulary cards that have the definitions separated from the pictures. Match the 7 definitions to the correct pictures. (Teacher may have students work as a team or individually.) (**Grouping: Partners, Independent; Scaffolding:**

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Comprehensible Input; Application: Hands-on, Promotes Engagement, Links to objectives)

Distribute the vocabulary cards with definitions attached so students can check their answers.

If students need more practice: Have students draw pictures and make their own vocabulary cards using the set of cards without pictures.

6. Students can work individually or together in teams and develop creative sentences using as many vocabulary words as possible. **(Preparation: Linking to Past Learning)** For example: Copper is found in the crust of the earth.

(Grouping Option: Independent or Partners; Application: Promotes engagement, Hands on, linked to objectives)

SESSION TWO

1. Repeat the Mural activity to review copper information and re-read “Blast It: Learning About Copper.” **(Grouping: Whole Class; Scaffolding: Guided Practice, Comprehensible Input; Application: promotes engagement)**

2. After this Mural/Reading activity, students should write a short summary paragraph using the vocabulary words. **(Assessment: Individual; Integrating Processes: Reading, Writing, Listening)**

Assessment

Students should be able to write a short paragraph summary using the copper vocabulary words. It should include how copper was formed in Arizona, one type of copper mine, and at least two products that use copper. **(Assessment: Individual; Integrating Processes: Reading, Writing, Listening)**

An optional assessment could be to draw pictures of the copper process and describe how copper is formed in Arizona, one type of copper mine, and at least two products that use copper.

(Assessment: Individual; Integrating Processes: Reading, Writing, Listening)