

Using Mnemonics to Teach Minerals

Objective: To use mnemonics to teach mineral hardness levels

Setting and Materials

Setting: Learning center for learning disabled students

Materials: 5 in. x 8 in flashcards with pegwords, picture of the pegwords, and rhyming words
7 in. x 11 in. colored cards for interactive pictures (e.g., for talc = 1, students were shown a line drawing of a dog looking at a bun on its tail)

Content Taught

- Total of 17 minerals used by Mastropieri (1983)
- Hardness levels ranging from 1 (softest) to 10 (hardest) with 14 different minerals
- Rhyming pegwords for numbers 1-10 (1 is bun, 2 is shoe, 3 is tree, and so on)
- Keywords or word clues (e.g., tail for talc, cow for calcite, field for feldspar)
- Interactive pictures (e.g., talc = 1, picture of a line drawing of a dog looking at a bun on its tail)

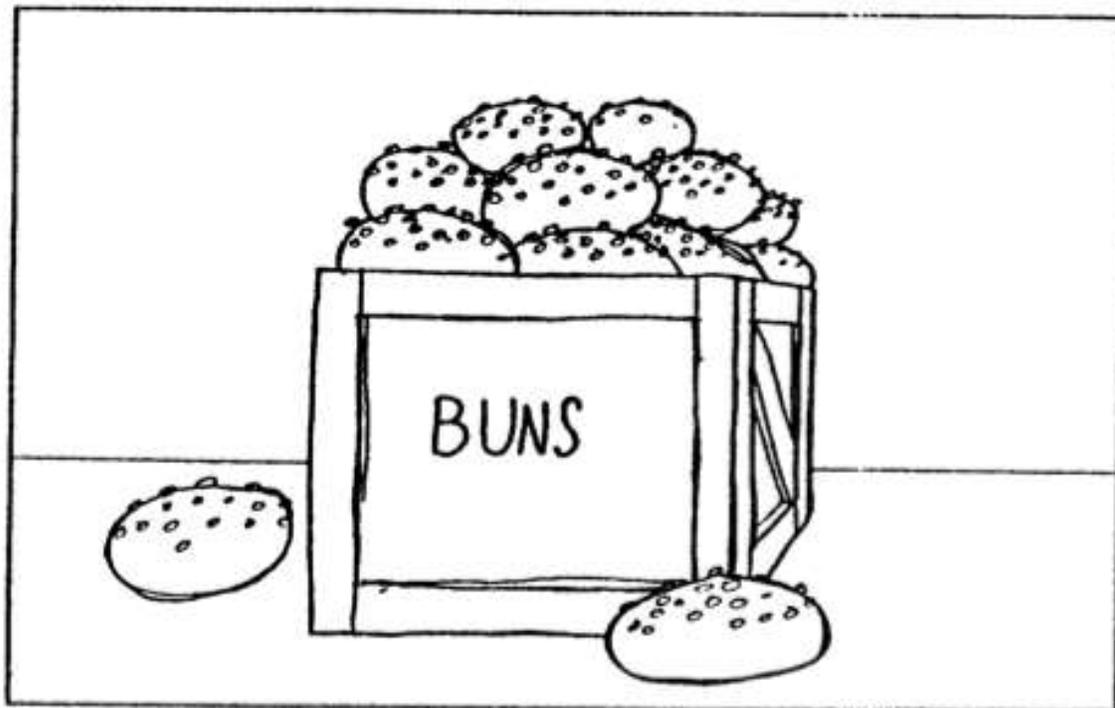


Figure 1. Mnemonic illustration for *bauxite*. Bauxite (box). Hardness level 1 (bun).

“Bauxite is number one on the hardness scale. The word clue for bauxite is box, and one is bun. Remember this picture below is full of buns.”

Teaching Procedures

1. Arrange students in small groups of 3 to 6.
2. First, teach students rhyming pegwords for the numbers 1-10 (e.g., 1 is bun, 2 is shoe, 3 is tree, and so on) using premade 5 in. x 8 in. flashcards displaying the pegword, a picture of the pegword, and its rhyming number on one side, and the corresponding pegword and picture on the other side.
3. Read through each card once (in a 1-10 order) and have students repeat.
4. Practice going through all the cards in and out of order using the side of the card containing the pegword and its picture (see above).
5. If students miss a card, provide corrective feedback by flipping the card over and repeating.
6. Next, teach students keywords (word clues) for three practice items (e.g., tail for talc, cow for calcite, and field for feldspar).
7. Allow students to practice retrieving information using mnemonic pictures (e.g., for talc = 1, students are shown a line drawing of a dog looking at a bun on its tail).
8. Once students have practiced with three examples, teach students keywords for the 14 target minerals (in a 1-10 order).
9. Present flashcards three times and on the first trial say, "Box is the word clue for bauxite. What is the word clue for bauxite?"
10. During second and third trials test by saying, "What is the word clue for bauxite?"
11. Provide immediate feedback to student responses.
12. Continue by presenting each interactive picture for 30 seconds and say, "Bauxite is number one on the hardness scale. The word clue for bauxite is box, and one is bun. Remember this picture of a box full of buns. Remember this picture of what?"
13. Remind the students to use the pictures to remember mineral names and hardness levels.
14. After all 14 minerals have been taught, have students write the appropriate hardness levels for each of the 14 minerals.

Evaluation

Count number of correct for matching minerals with hardness levels.

Lesson Plan Based on:

Mastropieri, M. A., Scruggs, T. E., & Levin, J. R. (1986). Direct vs. mnemonic instruction: Relative benefits for exceptional learners. *The Journal of Special Education*, 20, 299-308.