

**Title:** Choose Your Words Wisely!

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**Subject(s):** Language Arts, Science

**Topic(s):** Communications, Exploration, Mars, Space Science

**Grade/Level:** 5-8

**Objective:**

By the end of this lesson, students will be able to navigate through a maze using few verbal directions.

**Summary of Lesson:**

A team of hikers has been investigating the Martian landscape for several hours. The hikers radio in a distress call reporting that their EGS (Electronic Guidance System) has malfunctioned, and they are disoriented. The Mars Control team is charged with returning the crew safely to Mars Base. The communication system that works as part of the EGS is malfunctioning as well, and it has been determined that approximately only 3 seconds of each transmission is coming through clearly. This development limits the Mars Control to instructions of only 3 words maximum.

**Time Allotment:** 40 minutes

**Procedures/Instructions:**

Communicating with astronauts or scientific equipment on another planet is difficult. There may be interference from cosmic phenomena or planetary atmospheric conditions as well as a time delay due to the great distance the sound must travel. This activity will simulate the difficult communication that may cause problems during human exploration of other planets in our Solar System.

Students will only be allowed to transmit messages that contain very few words. Limiting the number of words a student uses encourages them to use only critical information that applies to the situation. Students will also be challenged to think under pressure, as they will be timed; to speak clearly, as any miscommunication can be dangerous; and to work together to devise methods of communication that lead to success.



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1. Divide students into groups of 4 or larger.
2. Split group in half and separate students by placing them behind dividers or position them so that they are sitting back to back. (They should not be able to see the other team's map.)
3. Designate one group as the Hiking Team the other as Mars Control.
4. The hiking team will choose a starting point by rolling the die. The number that appears is their starting position. If the team rolls a 6 they can choose their starting location from 1-5. The hiking team should mark this position with a colored pencil or a game piece and be sure not to reveal this location to the Mars Control team.
5. Set the timer at 10 minutes and instruct the students to begin.
6. Teams should elect a spokesperson and decide what will actually be "transmitted" before a message is sent.
7. The hiking team will start by describing their location WITHOUT USING THE NUMBER.
8. The Mars Control team will need to respond with a question for clarification or instructions for moving the hiking team safely back to the base.

**IMPORTANT:** Transmissions can be in the form of questions or statements, but must never be more than three words.

9. Play continues until the team lands on a black square (30 second delay) or an energy boost (gets to use one 5 word sentence).
10. Play is completed when all teams have safely returned their hikers to the base or when 10 minutes is up.
11. If the activity is repeated. keep track of times and watch for improvement.

#### **Instructional Materials:**

- Student Directions and Maps for each team
- Colored pencils
- Dice (1 per team)
- Clock with a second hand or timer (hiking team)
- Game piece (optional)
- Clipboards (optional)
- Walkie Talkies (optional)

#### **National Science or Mathematics Standards:**

Science

Science as Inquiry

CONTENT STANDARD A:

As a result of activities in grades 5-8, all students should develop

- Abilities necessary to do scientific inquiry
- Communicate scientific procedures and explanations.

**Assessment Plan:**

Discuss with the students the outcomes of the activities and ask the following questions:

1. What were the problems you experienced trying to communicate with your partners?
2. Did you change your strategy during play?
3. How could you have improved communication?

## **Mars Control**

A team of hikers has been investigating the Martian landscape for several hours. The hikers radio in a distress call reporting that their EGS (Electronic Guidance System) has malfunctioned, and they are disoriented. The Mars Control team is charged with returning the crew safely to Mars Base. The communication system that works as part of the EGS is malfunctioning as well, and it has been determined that approximately only 3 seconds of each transmission is coming through clearly. In addition to the communications issue, the crew has approximately only 10 minutes of oxygen left!

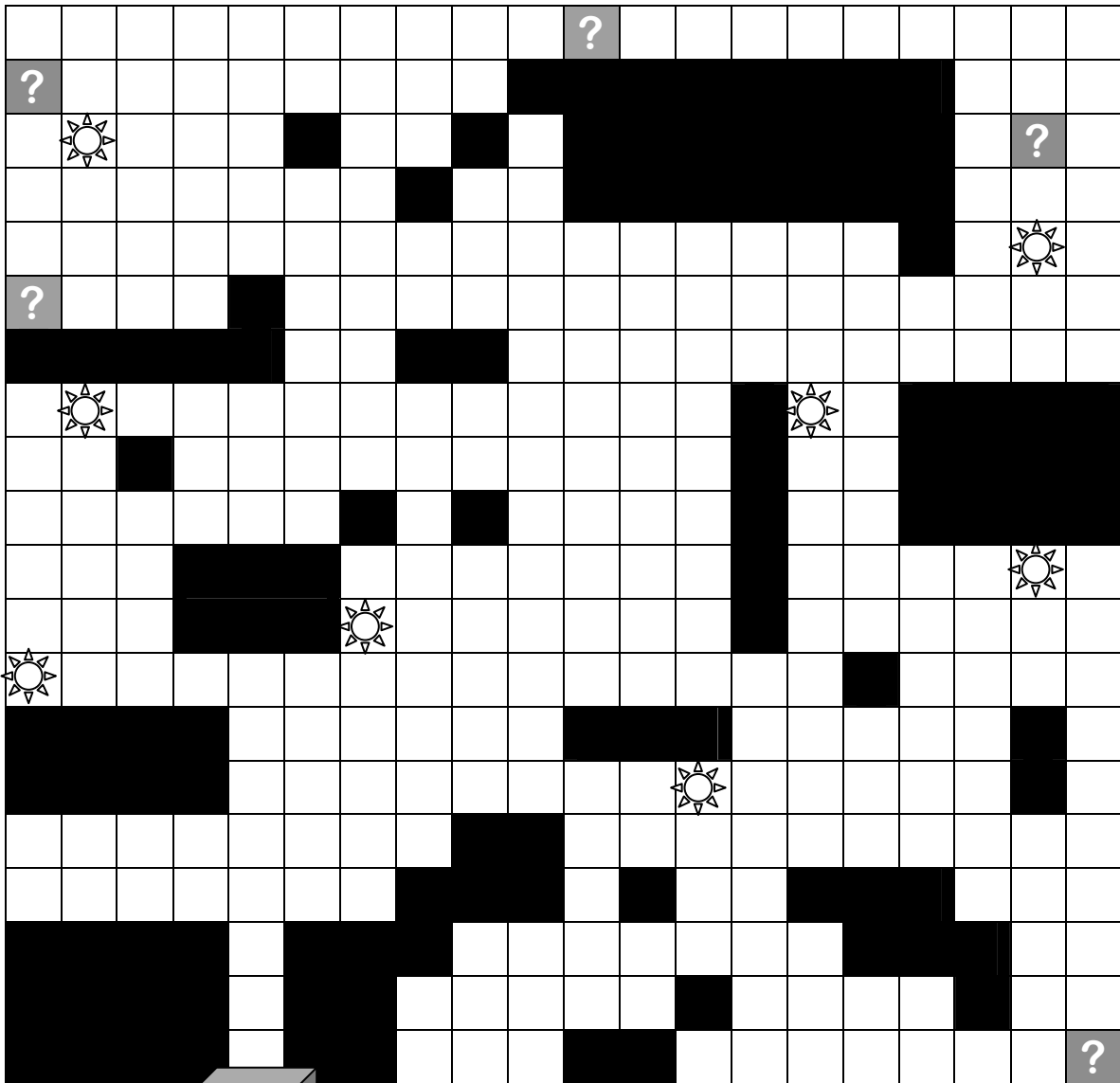
- 1. You have 10 minutes to get the hiking crew back to Mars Base safely!**
- 2. You can only send 3-word instructions or ask 3-word questions with each transmission you send. Choose your words wisely!**
- 3. You cannot send another message until your partners have responded.**
- 4. Use the colored pencils to track the progress of the hiking team.**
- 5. If your teammates say “We’re in trouble!,” you’ve directed them into a hazard. You must hold all communications for 30 seconds.**
- 6. If your teammates say “We’ve got power!”, the next message sent can contain 5 words.**

## **Mars Hiking Team**

A team of hikers has been investigating the Martian landscape for several hours. The hikers radio in a distress call reporting that their EGS (Electronic Guidance System) has malfunctioned, and they are disoriented. The Mars Control team is charged with returning the crew safely to Mars Base. The communication system that works as part of the EGS is malfunctioning as well, and it has been determined that approximately only 3 seconds of each transmission is coming through clearly. In addition to the communications issue, the crew has approximately only 10 minutes of oxygen left!

- 1. Your teammates have only 10 minutes to get you safely back to Mars Base!**
- 2. You may only send 3-word messages to your teammates. Choose your words wisely!**
- 3. You cannot send another message until your partners have responded.**
- 4. If your teammates move you into hazardous terrain, you must say: “We’re in trouble!” and stop all communication for 30 seconds.**
- 5. If your teammates move you into a power boost square, say: “We’ve got power!”, the next message can contain 5 words.**
- 6. Use your colored pencils to mark the path given to you by your teammates.**

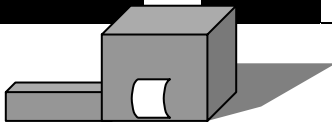
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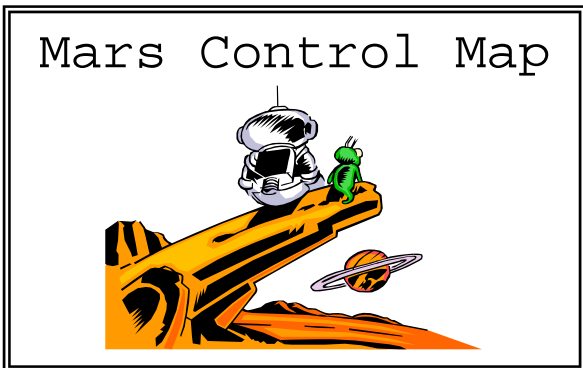
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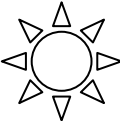
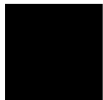
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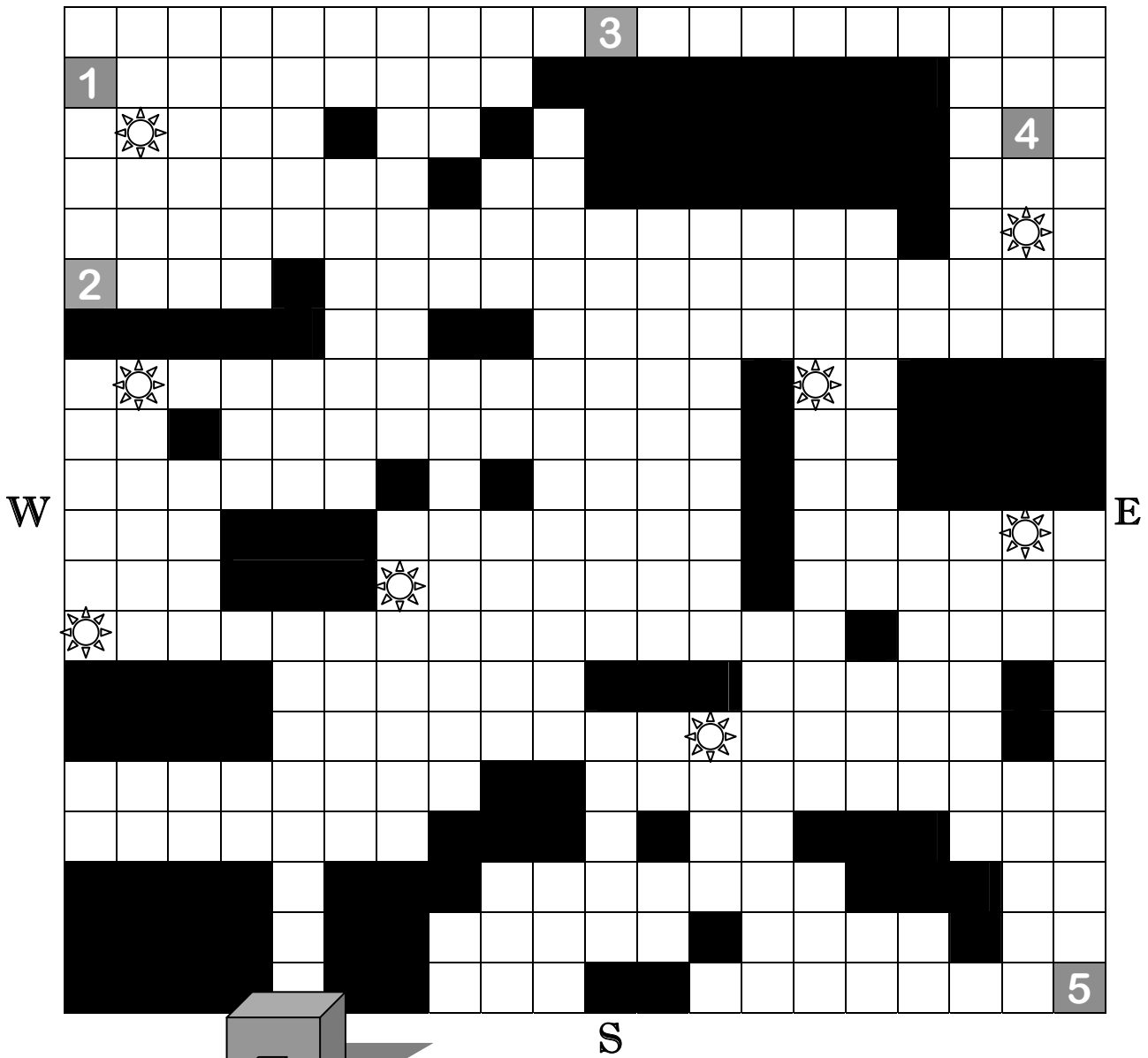


Mars Base



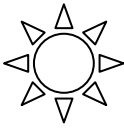
	<b>Energy Boost</b> one 5-word sentence
	<b>Hazardous Terrain</b> 30-second communication delay


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Mars Base

Hiking Team Map

 **Energy Boost**  
one 5-word sentence

 **Hazardous Terrain**  
30-second communication delay