

Lesson 6

Why Do We Explore?

GRADE LEVEL(S)

4 – 6

LENGTH

45 minutes

MATERIALS

- Giant Destination Mars Map
- Large piece of butcher or art paper
- One set of large cut letters (E, X, P, L, O, R, E)
- Tall sentence strips or sturdy pieces of paper cut to fit the poster (one per team)
- E, X, P, L, O, R, E paragraphs (one per team)
- *The Exploration of Mars* background sheet
- Tape
- Pencils, Markers
- *Why Do We Explore* student sheet

VOCABULARY

- Exploration
- Discovery

ESSENTIAL QUESTION(S)

Why do we explore?

LESSON OBJECTIVE(S)

Students will:

- Review and understand the seven traditional reasons why people explore
- Write a summary of their thoughts on why people explore
- Illustrate their exploration summaries
- Relate the reasons for exploration to missions to Mars

ENGAGEMENT

1. Ask students to brainstorm ideas about possible reasons humans explore. Write their responses on the board and discuss.

EXPLORATION

1. Before beginning this lesson, create an “EXPLORE” poster by placing precut letters on the butcher or art paper.
2. Configure seven teams of students, one for each letter of “EXPLORE.”
3. Assign each team one of the letters of EXPLORE by giving them that letter’s explanation paragraph. Hand out pencils, markers, the background sheet, and the student sheet to each of the teams.
4. Let each team gather on different areas of the Giant Map. Have them read the prompt on their assigned letter. They should use their designated area for further inspiration about

why humans explore (e.g., “finding the right place to land a rover,” “finding evidence of water,” etc.).

EXPLANATION

1. The members should record their ideas on their student sheets and compose a few sentences summarizing their ideas, and transfer these to the giant EXPLORE poster with accompanying illustrations.
2. Have the groups present and explain their ideas and illustrations to the rest of the class in EXPLORE order.
3. Each student should copy other team’s sentences into their STEAM notebooks so that they will have a mini EXPLORE poster of their own. These posters can be used for closure, extensions, review, and/or additional lessons.

EXTENSION

1. Lead a discussion that connects the historical reasons for exploration with the desire to explore Mars using space craft, landers, robotic craft, and humans.

EVALUATION

1. During this lesson, the teacher is encouraged to use formative assessment such as questioning and examining student responses/notes throughout the lesson to elicit evidence of learning and deepen student understanding. Teachers may wish to grade worksheets and/or STEAM notebooks to formally assess student understanding.
2. Teachers are encouraged to create their own grade-level and ability-level assessment so as to best meet the needs of their students.

WHY DO WE EXPLORE?

Whether we know it or not, we are natural-born explorers. There are many reasons why we explore. From birth we learn about life and how it works by exploring. No one can be satisfied for very long without exploring. Whether you are talking to someone next to you or looking around the room, you are exploring!

Directions:

1. You and your partners are helping to finish the EXPLORE poster on the wall.
2. Each team has a paragraph indicating one of the different reasons why humans explore.
3. At the beginning of the paragraph there is a letter designated for your team. You will use this letter to start a sentence that summarizes your team's reason for exploring. What have you learned from exploring the Giant Mars Map?
4. Think of a sentence that describes the ideas from your paragraph. It has to begin with the letter listed on the top of your paragraph! Write the sentence on the sentence strip.
5. Now make an illustration to go with your sentence and put it on the sentence strip. Be colorful.
6. Each student should make a copy of your team's sentence and illustration on the paper provided.
7. Place your team's sentence and illustration on the poster and share them with the class.
8. Copy each team's sentence and illustration as they add them to the poster.

Your team has the letter “E” for the poster

People are curious about everything. We learn something new every day. If you get bored, you automatically look for something to do. That is the way we are. We like to learn new things. We also like to understand things and how they work. From the time you were born, you have been finding out how things work by exploring them. Curiosity makes us Explorers.

Your team has the letter “X” for the poster

Exploration looks ahead, not behind. We don’t want to be stuck in the past. We want to move ahead. Exploration gives us the sense that anything is possible. Exploration leads to knowledge and understanding, and that means you make the world a better place. People have always tried to leave the world a better place for future generations. Exploration is one way we can do that. It is a gift that people of the past give people of the future. (You may use X or some other letter to start your sentence.)

Your team has the letter “P” for the poster

Leaders in space are leaders in the world. The countries that join together to go Mars and beyond will find new ways of working together and sharing their successes. Working together on major projects in space will help make nations on Earth more peaceful. Anytime you have to work with someone, you learn about them and yourself. Working together with common goals helps people understand each other. It is very hard to go to war with people you understand. Working together also makes us more creative.

Your team has the letter “L” for the poster

New places can be helpful to us because they have raw materials and natural resources. If we are going to explore new worlds, it can help our economy. Space exploration creates jobs and technology that make our world better. New worlds and new planets might have raw materials that are almost used up on Earth. We could also look for new, cleaner energy sources in space that might help protect our environment. Looking at Earth from space will give us a new view of our world and how to protect it.

Your team has the letter “O” for the poster

Exploration helps us understand our place in the universe. Where does the Earth, the third planet from the Sun, fit into things? Are people alone in the universe? Could there be life out there? If there are other life forms, what can we learn from them? What will they learn from us? Finding life in the universe could be the greatest discovery of all time.

Your team has the letter “R” for the poster

Exploration opens up new lands. Our country was once called the “New World” because the people of Europe found it when they thought only an ocean existed here. Europeans moved to the “New World,” called it America, and we became our own country. We know no new lands exist on Earth to be discovered, so we look to other planets in our solar system. We might find a place to establish small colonies. Another home for humans might be made on a few bodies in our solar system, though it would take many years and a huge effort.

Your team has the letter “E” for the poster

We love adventure and when we explore new places, it is the best kind of adventure. Landing on another planet in a video game isn’t nearly as exciting as landing there in person. Americans love adventure. From the time of the first colonies in America, we have spread across this great land and have loved the fun of finding new things. We have landed on our own Moon and sent spacecraft to the far reaches of the solar system. When humans explore, we make the universe our classroom for learning.