

LEARNING CHALLENGE LESSONS

Jill Nottingham • James Nottingham
With Mark Bollom, Joanne Nugent, and Lorna Pringle

20

Lessons to
Guide Young
Learners
Through the
Learning Pit



Elementary



Thank you

FOR YOUR
INTEREST IN
CORWIN

Please enjoy this complimentary excerpt from *Learning Challenge Lessons, Elementary* by Jill and James Nottingham. Use this lesson to discuss the concept of exploration with students. Includes three activities to try with your students.

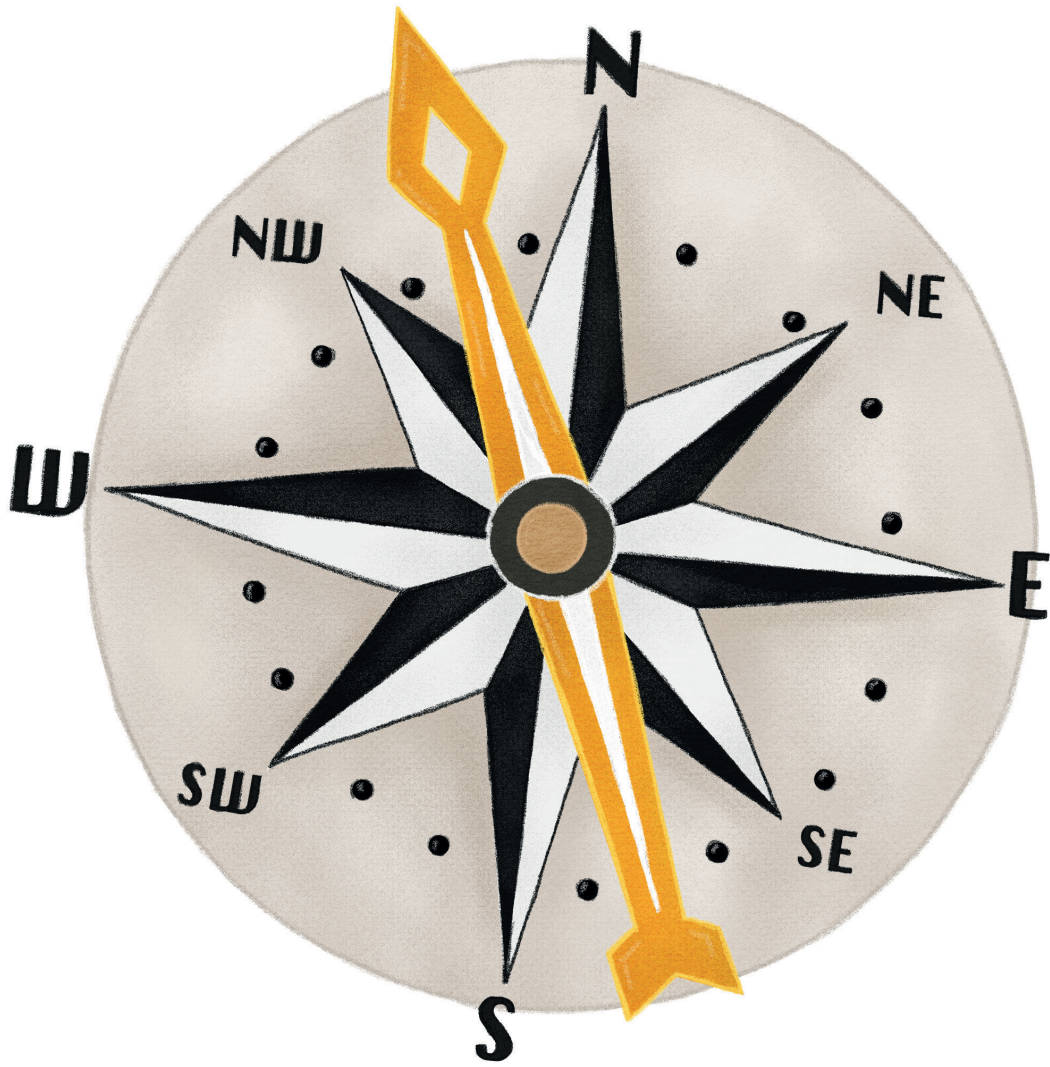
LEARN MORE about this title, including Features, Table of Contents and Reviews.

LESSON

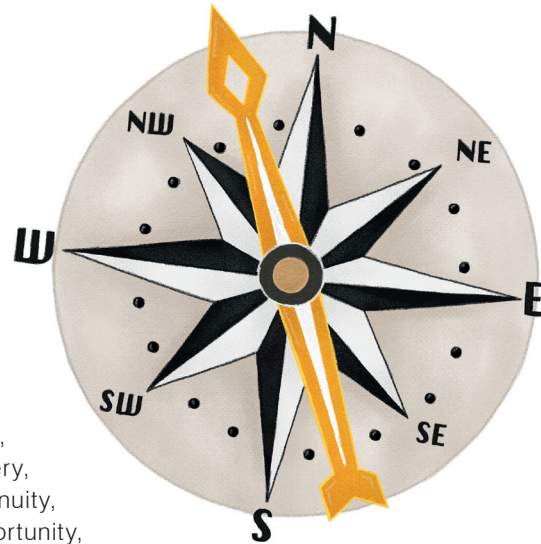
2

Why Explore?

KEY CONCEPT: Exploration



Why Explore?



KEY CONCEPT:

Exploration

KEYWORDS:

Acquisition, adventure, ambition, astronaut, beyond earth, bravery, challenge, communication, cosmonaut, cost-benefit, discovery, economics, exploration, explore, explorer, foolhardiness, ingenuity, journey, mountaineer, navigation, navigator, new frontiers, opportunity, pioneering, plunder, power, progress, prosperity, protection, resources, risk, rivalry, seafarer, space, status, survival, technology, the unknown, and voyage.

LEARNING INTENTION:

To understand the different ways in which exploration can take place and why it happens.

SUCCESS CRITERIA:

We can do the following:

- Describe what exploration is and name a variety of explorers.
- Identify the different ways people explore and appreciate the impact that exploration has upon our lives.
- Explain the reasons why people explore.
- Question whether people should explore.

STRATEGIES USED:

Odd One Out

Opinion Corners

Concept Lines

1. IDENTIFY THE CONCEPT

Some of the key areas to investigate within and around the concept of “exploration” are the following:

- A definition of *exploring* and *exploration*
- A definition of an *explorer*
- Types of exploration (wilderness, urban, space, scientific, philosophical)
- The nature of exploration
- Exploring the “impossible” (going against common belief to uncover new understanding, risk-taking, or going into uncharted territory)
- Exploring the “possible” (exploring more deeply things or places we already know about to extend our knowledge and understanding)
- People who undertake exploration
- Risk and reward
- Motivation
- Status and power
- Exploitation and damage
- Financial and human cost
- Resource implications
- Competition
- Progress
- Human instinct
- Survival
- Gender and exploration
- Benefits and impact of exploration

2. CHALLENGE STUDENTS' UNDERSTANDING OF THE CONCEPT

Here are some examples of cognitive conflict that we expect your students to experience:

Opinion	Conflicting Opinion
Space exploration is very expensive, and this money could be used to help those with no money and no homes.	You can't put a price on the knowledge that has been gained through space exploration. Exploring space has provided jobs for many people.
Exploration can be very dangerous and risky.	There are risks in everything we do. We would never go anywhere or do anything if we didn't take risks.
We don't need explorers anymore. The internet tells us everything we need to know about the world.	The world is vast, and thanks to explorers we are making new discoveries all the time. We now know that many lifesaving medicines exist in the Amazon rainforest.
Brave explorers inspire us and show us what is possible.	My family inspires me and challenges me to be the best I can be.

Questions for Challenge

- What is exploration?
- What or where can be explored?
- What kind of exploration have you done?
- Why would someone want to explore?
- Is it possible to explore something I already know—like this classroom?
- Can we only explore places?
- Would you be able to explore without moving?
- Does exploration always have to involve travel of some kind?
- What is the difference between traveling and moving?
- What tools can I use to help me explore, without moving (e.g. a microscope, a telescope, the internet)?
- What is an explorer?
- What explorers can you name?
- If an explorer travels, does it have to be somewhere new or just new to them?
- Should an explorer always find something?
- What is the difference between finding and discovering?
- Is exploring always a risk-taking activity?
- When is it important to take risks?
- Why do explorers want to explore?

- What might be the rewards of exploration?
- What is a reward? What reward did Neil Armstrong, the first man on the moon get? (or) What reward did Roald Amundsen get for being the first man to get to the South Pole?
- Should nations be proud of their explorers?
- How do we know if there is anything left to explore?
- If we explore something, do we always find out more about it?
- Is it possible to explore an idea?
- What have we been exploring in the pit today? Have we found or discovered anything?
- Should people explore things even if it is dangerous to do so?
- Humans are continuing to explore space. We often call this the space race. Does exploration always need to be competitive?
- Is it possible for babies to explore?
- How do we know that money spent on exploration is worthwhile?

Activity 1: Odd One Out

The Activity 1: Odd One Out cards show a range of explorers. There are two sets of cards. The orange cards are for younger students or those who may need additional support, and those that are blue are for older students or those who would benefit from the additional challenge.

Although there is information provided about each of these people, you may want to ask your students to carry out a little of their own research as a preview to working with the activity cards.

This activity works very well with students in small groups of three or four.




Give each group of students three cards. Ask them to identify which one is the Odd One Out and why. Encourage them to continue to look for alternative answers and reasons for what might be the Odd One Out.

online resources 

Download the activity cards at <http://resources.corwin.com/learningchallengelessons>

Why Explore?
The Question



A search and rescue dog

Why Explore?
The Question

A search and rescue dog

- Dogs are trained from 8 weeks old
- Obedience is a key part of their training
- Rescue dogs detect human scent and help to find missing people
- They have a great sense of smell and can track a scent for miles
- They help investigate search dangerous sites and explore mountains and areas of natural disasters

Why Explore?
The Question

Neil Armstrong

Why Explore?
The Question

Neil Armstrong

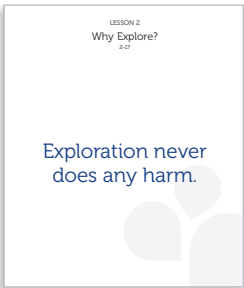
- He was a Boy Scout.
- He was a U.S. astronaut and engineer.
- He was the first person to walk on the moon.
- He received the Presidential Medal of Freedom.
- He made the impossible possible.

Image source: Nikolai Tsvetkov/ Shutterstock.com

3. CONSTRUCT UNDERSTANDING



Download the activity cards at <http://resources.corwin.com/learningchallengelessons>



Activity 2: Opinion Corners



Your students should now consider the reasons why people explore.

Challenge them to consider whether they agree, disagree, strongly agree, or strongly disagree with a range of statements that relate to the motivation behind exploring.

Use Activity 2: Opinion Corners cards for this activity. Orange cards are for younger students or those needing additional support. Blue cards are for older children or those requiring more challenge.

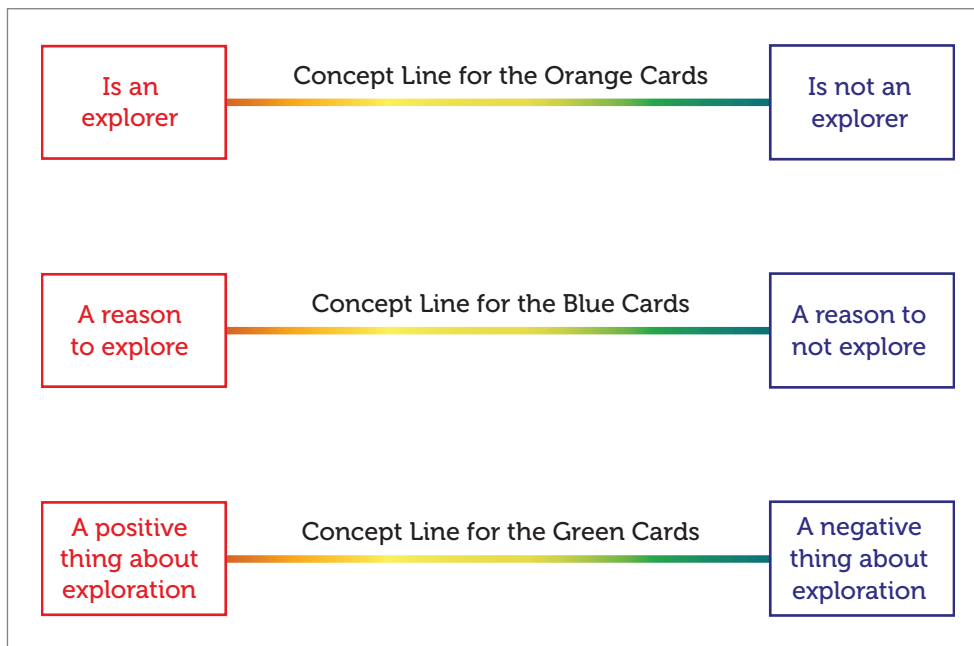
It is useful to support your students when they are sorting through the information in front of them. This can help them to interpret and handle the information more easily and reconstruct their thinking in order to reach an understanding.

Activity 3: Concept Lines

A Concept Line represents the characteristics of a concept rather than agreeing or disagreeing with a concept. Your students are now challenged to consider what constitutes an explorer as well as the positive and negative aspects of exploring.

Use Activity 3: Concept Lines cards for this activity. Select the statements you would like your students to consider. These are labeled so you know which statements to use with which Concept Line.

Ask your students to consider where the statements would fit on the following Concept Lines, and encourage them to share their thoughts and ideas to justify the position they have chosen.



Adaptation

For younger students, reduce the number of cards or resources they are categorizing at any one time.

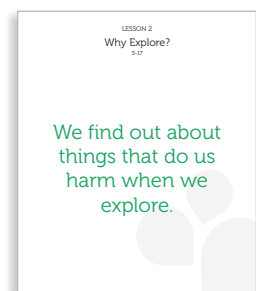
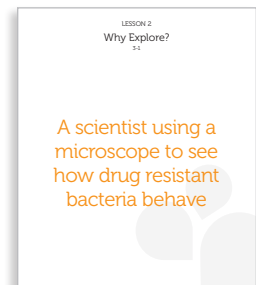
Extension

Your students could create their own cards for the Odd One Out activity and add new statements for the Concept Line activity.

You could challenge your students to identify nine characteristics that they believe explorers possess. They could then rank the most important by using a Diamond Ranking.

online resources

Download the activity cards at <http://resources.corwin.com/learningchallengelessons>



4. CONSIDER THE LEARNING JOURNEY

At the end of the activity, it is usual to encourage the students to review their learning journey and the thinking process they have engaged in throughout the session.

This can include reflection on the thinking that has taken place to this point and a summary and conclusion of the new understanding reached.

They can do this by returning to and reexamining some key questions.

- Why do people explore?
- What does exploration involve?
- Who explores?
- How has exploration helped us?
- Is exploration always risky?
- Is it always wrong to take risks?
- To what extent is exploration necessary?
- What do you think should never be explored?
- What have you explored during this lesson?
- Have you changed your views on anything during this lesson?
- What skills have you used during today's lesson?
- Which of these skills do explorers use?
- Could you use those skills in other areas of your life?

Ideas for Transfer

Your students could explore their school environment. They could collect data of what new information they have collected and communicate it through pictures and graphs.

Your students could research an explorer of their choice and produce a biography about them highlighting the contribution their explorer has made to the world.

Your students could compile and display a fact file on their chosen explorer and get their fellow students to vote for their favorite explorer.

Your students could write a newspaper article that is set in the future and report on an exploration that they believe will take place in the future.

WWW – What Worked Well ...

Empty space for notes under the WWW section.

EBI – Even Better If ...

Empty space for notes under the EBI section.

ACTIVITY 1: ODD ONE OUT (SET A)

LESSON 2

Why Explore?

1-1 (front of card)



Nikolai Tsvetkov/Shutterstock.com

A search and rescue dog

LESSON 2

Why Explore?

1-2 (front of card)



Szeferi/Shutterstock.com

A doctor

LESSON 2

Why Explore?

1-3 (front of card)




Ostili/Shutterstock.com

A diver

A search and rescue dog

- Dogs are trained from 8 weeks old.
 - Obedience is a key part of their training.
 - Rescue dogs detect human scent and help to find missing people.
 - They have a great sense of smell and can track a scent for miles.
 - They help firefighters search dangerous sites and explore mountains and areas of natural disasters.
- 

A doctor

- You become a doctor at 29.
 - Doctors gather evidence and data.
 - Doctors explore the human body and mind.
 - Doctors explore new medicines and treatments to help people.
 - Doctors work very long hours searching for the answers to medical problems and dilemmas.
- 

A diver

- You can have diving lessons from 10 years of age.
 - Divers solve the mysteries of the ocean.
 - The ocean can be hostile to humans, so divers are brave.
 - Divers explore underwater creatures, caves, and shipwrecks.
 - Some divers rescue people from the ocean.
- 



Fer Gregory/Shutterstock.com

LESSON 2
Why Explore?
1-4 (front of card)

An astronaut



Leah-Anne Thompson/Shutterstock.com

LESSON 2
Why Explore?
1-5 (front of card)

A scientist



Faestock/Shutterstock.com

LESSON 2
Why Explore?
1-6 (front of card)

Alice in Wonderland



LESSON 2
Why Explore?
1-4 (back of card)

An astronaut

- The term *astronaut* is derived from the Greek word meaning “space sailor.”
- Most astronauts study things like engineering, mathematics, science, or computer technology.
- Astronauts have to undertake extensive training and testing before they can take part in a spaceflight.
- Some astronauts work with pilots to conduct experiments, launch satellites, and look after spacecraft and equipment.
- Astronauts risk their lives in order to explore space.

LESSON 2
Why Explore?
1-5 (back of card)

A scientist

- Scientists solve problems and make observations about the world.
- Scientists use equipment and tools to measure and study the world.
- Scientists persevere until they find answers. They never give up.
- They help us understand how things work and why things happen.
- They find solutions and cures by exploring materials and the natural world.

LESSON 2
Why Explore?
1-6 (back of card)

Alice in Wonderland

- Alice has an amazing dream about changing size and meeting lots of different creatures.
- Alice is an intelligent, curious, and trusting character who is ready to accept the impossible.
- Alice followed the white rabbit down the rabbit hole without thinking about how she was going to get out again.
- Alice becomes a guest at a “mad” tea party along with the March Hare, the Hatter, and a very tired Dormouse.
- The character of Alice is based on a real girl, called Alice Liddell, who was one of the author’s childhood friends.

LESSON 2
Why Explore?
1-7 (front of card)

Thinking



LESSON 2
Why Explore?
1-8 (front of card)

Dreaming



LESSON 2
Why Explore?
1-9 (front of card)

Remembering



LESSON 2
Why Explore?
1-7 (back of card)



LESSON 2
Why Explore?
1-8 (back of card)



LESSON 2
Why Explore?
1-9 (back of card)



ACTIVITY 1: ODD ONE OUT (SET B)

LESSON 2
Why Explore?
1-10 (front of card)

Neil Armstrong



LESSON 2
Why Explore?
1-11 (front of card)

Louis Pasteur



LESSON 2
Why Explore?
1-12 (front of card)

Christopher Columbus



LESSON 2
Why Explore?
1-10 (back of card)

Neil Armstrong

- He was a Boy Scout.
- He was a U.S. astronaut and engineer.
- He was the first person to walk on the moon.
- He received the Presidential Medal of Freedom.
- He made the impossible possible.

LESSON 2
Why Explore?
1-11 (back of card)

Louis Pasteur

- He is one of the most important scientists in history.
- He earned degrees in mathematics, physics, and chemistry.
- He proved that germs were the cause of illness.
- In 1862, he invented the pasteurization process.
- He discovered methods of protecting people against two deadly diseases: anthrax and rabies.

LESSON 2
Why Explore?
1-12 (back of card)

Christopher Columbus

- He was an Italian navigator and explorer.
- He completed four voyages across the Atlantic.
- He was the first European to discover America in 1492.
- He listened to the stories of sailors.
- He brought horses to America.

LESSON 2
Why Explore?
1-13 (front of card)

An adventure scout



LESSON 2
Why Explore?
1-14 (front of card)

Amelia Earhart



LESSON 2
Why Explore?
1-15 (front of card)

Steve Jobs



LESSON 2
Why Explore?
1-13 (back of card)

An adventure scout

- They work in a team to learn new skills and face new challenges.
- They show courage in the face of difficulties.
- They study survival and put this into practice in the wilderness.
- They earn badges for participating in new adventures.

LESSON 2
Why Explore?
1-14 (back of card)

Amelia Earhart

- She was the first woman to fly solo across the Atlantic.
- In 1917, she trained as a nurse and began volunteer work to help injured soldiers.
- Between 1922 and 1937, she set seven women's speed and distance aviation records.
- She was a supporter of equal rights for women and saw her role to inspire women to achieve the same things as men.
- She disappeared in 1937 during an attempt to fly around the world.

LESSON 2
Why Explore?
1-15 (back of card)

Steve Jobs

- He was the cofounder of Apple and Pixar.
- He loved to explore how electronics worked.
- He dropped out of college and traveled to India to discover who he was and what he wanted to do with his life.
- At age 21 he designed his first computer in his parent's garage.
- He loved to explore new ideas and introduced the iPod and iPhone to the world.

LESSON 2
Why Explore?
1-16 (front of card)

J. K. Rowling



LESSON 2
Why Explore?
1-17 (front of card)

Pablo Picasso



LESSON 2
Why Explore?
1-18 (front of card)

Valentina Tereshkova



LESSON 2
Why Explore?
1-16 (back of card)

J. K. Rowling

- Joanne, or J. K., Rowling is the author of the *Harry Potter* series books.
- She explores her vivid imagination to create characters for her books.
- She imagines and creates new worlds.
- She explores the use of words and presents them on paper.
- She enables people to escape the realities of their daily lives.

LESSON 2
Why Explore?
1-17 (back of card)

Pablo Picasso

- Picasso became one of the greatest and most influential artists of the 20th century.
- When Pablo was age seven, his father (who was also a painter) gave him artistic training in figure drawing and oil painting.
- Picasso was a painter, sculptor, printmaker, and poet.
- He produced around 50,000 artworks in his lifetime.
- He cofounded the cubist movement and coined several new styles of art, including constructed sculpture, collage, and the plastic arts.

LESSON 2
Why Explore?
1-18 (back of card)

Valentina Tereshkova

- Valentina is a retired Russian engineer and cosmonaut.
- She was the first woman to have flown in space.
- She was selected from over 400 applicants.
- She was the pilot of Vostok 6 and made forty-eight orbits of Earth during her three-day mission.

LESSON 2
Why Explore?
1-19 (front of card)

Debating



LESSON 2
Why Explore?
1-20 (front of card)

Arguing



LESSON 2
Why Explore?
1-21 (front of card)

Questioning



LESSON 2
Why Explore?
1-19 (back of card)



LESSON 2
Why Explore?
1-20 (back of card)



LESSON 2
Why Explore?
1-21 (back of card)



ACTIVITY 2: OPINION CORNERS (SET A)

<p>LESSON 2 Why Explore? 2-1</p> <p>There are always risks for people who explore.</p>	<p>LESSON 2 Why Explore? 2-2</p> <p>Explorers have to move or travel.</p>	<p>LESSON 2 Why Explore? 2-3</p> <p>We can only explore places.</p>
<p>LESSON 2 Why Explore? 2-4</p> <p>Only adults can explore.</p>	<p>LESSON 2 Why Explore? 2-5</p> <p>We can only explore big things.</p>	<p>LESSON 2 Why Explore? 2-6</p> <p>We can explore cyberspace.</p>
<p>LESSON 2 Why Explore? 2-7</p> <p>All explorers are brave.</p>	<p>LESSON 2 Why Explore? 2-8</p> <p>Some explorers are brave.</p>	<p>LESSON 2 Why Explore? 2-9</p> <p>No one explores unless there is some reward.</p>

LESSON 2
Why Explore?
2-10

Rewards are always things that are valuable.

LESSON 2
Why Explore?
2-11

Discovering something is different than finding something.

LESSON 2
Why Explore?
2-12

We can only find out new things if we explore.

LESSON 2
Why Explore?
2-13

We wouldn't have lots of different foods if people hadn't explored.

LESSON 2
Why Explore?
2-14

Explorers are curious.

LESSON 2
Why Explore?
2-15

Explorers are determined.

LESSON 2
Why Explore?
2-16

We can't be real explorers.

ACTIVITY 2: OPINION CORNERS (SET B)

<p>LESSON 2 Why Explore? 2-17</p> <p>Exploration never does any harm.</p>	<p>LESSON 2 Why Explore? 2-18</p> <p>Some explorers probably did what they did because they just wanted to be famous.</p>	<p>LESSON 2 Why Explore? 2-19</p> <p>All explorers are competitive.</p>
<p>LESSON 2 Why Explore? 2-20</p> <p>Fame and status for the explorer or the explorer's country is a form of reward.</p>	<p>LESSON 2 Why Explore? 2-21</p> <p>Exploration was more exciting in the past.</p>	<p>LESSON 2 Why Explore? 2-22</p> <p>There is nothing left to explore on our planet.</p>
<p>LESSON 2 Why Explore? 2-23</p> <p>Exploring things that are dangerous is unnecessary.</p>	<p>LESSON 2 Why Explore? 2-24</p> <p>Exploring things that are dangerous should only be done by people who understand the risks.</p>	<p>LESSON 2 Why Explore? 2-25</p> <p>Exploration is part of human nature.</p>

LESSON 2
Why Explore?
2-26

Exploration can lead
to trouble.



LESSON 2
Why Explore?
2-27

Famous explorers are
all men.



LESSON 2
Why Explore?
2-28

Explorers have to
be men.



ACTIVITY 3: CONCEPT LINES

<p>LESSON 2 Why Explore? 3-1</p> <p>A scientist using a microscope to see how drug resistant bacteria behave</p>	<p>LESSON 2 Why Explore? 3-2</p> <p>An astronaut mending the International Space Station</p>	<p>LESSON 2 Why Explore? 3-3</p> <p>The first person in space</p>
<p>LESSON 2 Why Explore? 3-4</p> <p>Christopher Columbus</p>	<p>LESSON 2 Why Explore? 3-5</p> <p>A baby in a cot reaching up to touch a mobile</p>	<p>LESSON 2 Why Explore? 3-6</p> <p>Someone looking for their lost car keys</p>
<p>LESSON 2 Why Explore? 3-7</p> <p>Wondering what's on the other side of an enormous ocean</p>	<p>LESSON 2 Why Explore? 3-8</p> <p>Wanting adventure</p>	<p>LESSON 2 Why Explore? 3-9</p> <p>Wanting to be famous</p>

LESSON 2
Why Explore?
3-10

Wanting to stay
absolutely safe

LESSON 2
Why Explore?
3-11

Not wanting a
challenge

LESSON 2
Why Explore?
3-12

Wanting to expand
human understanding
and knowledge

LESSON 2
Why Explore?
3-13

We find out about
new places.

LESSON 2
Why Explore?
3-14

We change places
when we explore
them.

LESSON 2
Why Explore?
3-15

We can understand
things when we
explore them.

LESSON 2
Why Explore?
3-16

We push the frontiers
of human knowledge
and understanding
when we explore.

LESSON 2
Why Explore?
3-17

We find out about
things that do us
harm when we
explore.

LESSON 2
Why Explore?
3-18

Sometimes exploring
can mean taking
a risk.