Unit 4 Explore the unknown

Warming up

Reference answers

1

Step 1

Explorer information card (1)	
Name of explorer	Edward Jenner
Country of birth	Britain
Year of birth	1749
Major exploration(s)	He pioneered the concept of vaccines and introduced the smallpox vaccine, the world's first-ever vaccine.
Interesting facts	Jenner is widely regarded as "the father of immunology," and his work is said to have saved more lives than the work of any other human.

Explorer information card (2)	
Name of explorer	Zheng He
Country of birth	China
Year of birth	1371
Major exploration(s)	Zheng He led seven voyages to 30 countries and regions about 600 years ago.
Interesting facts	During his long voyages, Zheng He carried out some activities in the coastal countries along the ancient Maritime Silk Road, which contributed to the cultural exchange between China and these countries.

Step 2

You may ask questions like:

1) Where was the explorer born?

2) In which year was the explorer born?

3) What major exploration(s) did the explorer make?

4) How important was the exploration?

5) What was the motive for the exploration?

6) What obstacles did the explorer encounter?

2

E: excitement

Humans have always felt an urge to explore. We are excited when we blaze new trails, map new

lands and answer profound questions about ourselves and the universe. The excitement that comes with discovering something new is part of the reason why we explore.

X: curiosity
We have an innate curiosity and an unquenchable thirst for new things. Our strong desire to seek answers to the questions about the unknown has compelled us to explore. For example, we want to figure out what is out there in space, uncover the ways people lived in the past, or explain some natural or social phenomena.

P: passion
Passion is what motivates us to explore. We want to take on the challenges of exploration because we are truly passionate about probing into the unknown. Passion also keeps us focused and optimistic when we encounter difficulties in our exploration.

L: learning
We explore because we want to learn. Exploration is a very challenging but rewarding learning experience. When we explore, we experiment with new solutions and apply new information in an attempt to discover and develop new knowledge. Scientific exploration in chemistry, for example, helps us better understand the properties and behavior of matter.

O: origins
Humans explore to solve the mysteries of the world we live in. We trace the origins of a past civilization, a local tradition, a virus, a genre of music, a heavenly body, or even of life for the purpose of understanding how the world has become what it is today.

R: resources
Exploring new places can be helpful to us because we may find more resources for our development. On the one hand, we can try to find more natural resources such as food and water to meet our basic survival needs. On the other hand, we may explore more eco-friendly ways to use the resources that we have so that we can have sustainable development.

E: environment
We sometimes explore for environmental purposes. For example, we look for new, cleaner energy sources in the deep ocean that might help protect our environment; we study the melting glaciers and ice shelves in the Antarctic in order to understand the effects of global climate change on the environment.

Listening & speaking

Conversation

Scripts

Host: I'm Oscar Davis in Washington, D.C. Martina Ceruti's explorations take her to the tops of remote mountains to study ritual sites that nobody has visited for hundreds of years.

Martina Ceruti, what came to you first, archaeology or mountaineering?

Ceruti: Archeology came to me first, as I was born and raised in a city in Argentina with no mountains. But ever since I saw the mountains, I wanted to be an archaeologist who could work on high mountains.

Host: What are the risks involved in working on high mountains?

Ceruti: On the mountains we are facing climate conditions that can be very hard, like snowstorms, extremely strong winds and low temperatures. On top of that, we are often working in an environment where there's very little oxygen available.

Host: So the body is exposed to altitude sickness?

Ceruti: Yes. And then it could lead to serious problems like brain swelling.

Host: Would you describe yourself as a thrill-seeker?

Ceruti: No, no. I think we should not confuse thrill-seeking with exploration. Most of the explorers I know are very, very good risk managers. They are aware of their own limitations and respectful of the environment they work in.

Host: In the course of climbing to one of these places to see what you could find, have you ever said "This is crazy and I'm going to go back down"?

Ceruti: Of course, we have the feeling of fear always. But on the other hand, we are so aware that the archaeological work is important, because we are helping to preserve this heritage for future generations. So we tend to leave aside our own fears and try to keep going.

2. Questions:

1. What does the woman study on the tops of high mountains?
2. What is true about the woman as an explorer?
3. What is the woman's attitude toward her archaeological work on high mountains?

Reference answers

Listening and understanding

1

1) strong winds
2) very little oxygen
3) limitations
4) respectful
5) important
6) leave aside

2

1. D 2. A 3. A

Thinking and speaking

Exploration and thrill-seeking

Examples of exploration activities include deep-sea diving journeys to find new marine life, exploration of Mars, expeditions to the South Pole, archeological digging, etc. Thrill-seeking adventures are activities like skydiving, bungee jumping, free solo climbing, and eating extremely hot and spicy food.

Because of the risks involved, participants in both exploration activities and thrill-seeking adventures have to get well prepared for the risks they may face. For example, astronauts have to undergo rigorous training for anything that could happen during space missions. Likewise, before doing activities like skydiving, people have to ensure that safety measures are in place to minimize the risk of injury or loss of life during the activities. On the other hand, although participants in both cases are willing to take risks and try new things, they do such things for different purposes. Explorers take risks in search of new routes, new products, new resources, and new knowledge for the sake of human development. Thrill-seekers, however, take physical, social, or financial risks to satisfy their cravings for varied, novel, and intense experiences.

Exploring safely

Some explorers take risks that are far beyond their ability to cope with and act without adequate preparation for the challenges associated with exploration. To explore safely, explorers should first know their limits. They should not overestimate their abilities. For example, before they go, they may ask themselves whether they have ever been in this type of environment before. Environmental conditions such as temperature, humidity and altitude take time to get used to, especially if explorers come from a totally different environment than the place they are visiting. Besides, planning is an important step in getting prepared for exploration. The plan has to include detailed information about where they will be going, what they plan to do, when they plan to arrive and return, and their emergency contact information. They may also need an emergency plan for what to do in case something unexpected occurs.

Passage 1

Scripts

Sir Ranulph Fiennes recalls the early days of his career in exploration, back in the late 1960s. Fiennes says the types of explorers working today differ in both intellect and character from the volunteers he worked with back then. Modern explorers, he says, are specialists with defined skill sets. He uses the example of medical students who might consider mounting expeditions to remote regions of the Amazon rainforest. They wouldn't be breaking virgin territory since all of South America has already been explored. However, armed with modern medical science and instruments, they might theoretically discover new plants and use them to develop new medicines.

Having explored this planet of ours for the last 50 years, he admits there is virtually nowhere left where an expedition might break new ground, except for the deep oceans. He feels it's inevitable that some modern-day explorers are forced to attempt ever more specific records in order to secure funding and capture the attention of the media.

During his career, Fiennes has seen enormous developments in technology. When he was young, he sometimes communicated in Morse code and navigated by the sun. As an old man, he now enjoys the benefits of GPS and satellite phones. He has lived through a technological revolution that has facilitated global exploration in so many ways. Approaching the end of his own career, he would never criticize the next generation of explorers for having it easier, however.

Reference answers

Listening and understanding

1.

1) defined skill sets
2) break new ground
3) navigated
4) technological revolution

2.

1. T 2. F 3. T 4. F 5. T

Thinking and speaking

How technology affects exploration

Today's technologies allow us to explore more safely and efficiently. Take the tools and technologies in ocean exploration as an example. Sonar helps create maps of the seafloor; human-occupied vehicles transport a small group of scientists, pilots, and electronic equipment into the depths, allowing in-person research and observation; remotely operated vehicles enable humans to explore the ocean without actually being in the ocean; better breathing systems make it possible for divers to stay underwater longer; stronger lighting improves visibility underwater. As technology advances, so does our understanding of the way that the ocean functions and supports life on Earth.

What is left to explore?

Today, we've topped the highest mountains and delved into the depths of the oceans, yet there is still much left for humans to explore. Vast bodies of knowledge have yet to be developed and many of the most basic questions about us and our place in the universe have yet to be answered. First, some places on Earth are so difficult to get to that they are still virtually unexplored. For example, about 95% of the ocean remains unexplored, so a vast underwater world is left for us to explore. Besides, underwater caves have held mysteries for humans to solve. Caves can be difficult to find and dangerous to explore. For instance, the world's deepest cave, Veryovkina Cave in Georgia, had over a kilometer of tunnels added to its map in 2018 alone. It would take much time and effort to explore these caves. Second, there is much to learn about space. The biggest mystery about space is whether mankind is alone in the universe or there are other intelligent beings somewhere in space. Finally, there are many unsolved problems in other fields. For example, what is the cure for Alzheimer's disease? What is the maximum lifespan for humans? Exactly how and when did life on Earth originate? In a word, there is a whole unknown realm on our planet and beyond, and we are just breaking ground.

Passage 2

Scripts

Stories of scientific discovery are full of lucky coincidences. It's true that good luck is often considered a key factor in making scientific innovations. For example, it is the apple hitting on

Newton's head that inspired his fantastic idea. But look closer. Even when scientists feel that they just got lucky, the steps leading to a new finding or idea often tell a different story. It takes more than being in the right place, at the right time, to make a discovery.

The people who turn lucky breaks into breakthroughs are generally those with the background knowledge and scientific ways of thinking that are both needed to make sense of the lucky observation. For example, in 1896, Henri Becquerel made a surprising observation. He found that photographic plates stored next to uranium salts were spotted, as though they'd been exposed to light rays – even though they had been kept in a dark drawer. Someone else, with a less scientific state of mind and less background knowledge about physics, might have thought it was their bad luck and thrown out the ruined plates. But Becquerel was intrigued by the observation. He recognized it as something scientifically interesting, went on to perform follow-up experiments that traced the source of the exposure to the uranium, and in the process, discovered radioactivity. The key to this story of discovery lies partly in Becquerel's initial observation, but also in his way of thinking. Along with the relevant background knowledge, Becquerel had a scientific state of mind. Sure, he made some key observations – but then he dug into them further, asking why the plates were exposed and trying to eliminate different potential causes of the exposure to get to the physical explanation behind the happy accident.

Reference answers

Listening and understanding

1

1. To illustrate that good luck is a key factor in making scientific innovations.
2. Having the relevant background knowledge and scientific ways of thinking.
3. In 1896.

2

1) spotted
2) rays
3) bad luck
4) ruined
5) interesting
6) experiments
7) source

Thinking and speaking

Think like a scientist!

You might think that scientific ways of thinking are inaccessible to you in your everyday life. In fact, many aspects of scientific thinking are just extensions of the way you probably think every day. For example, when you are washing your clothes, you may ask yourself how bleach lightens your clothes. After asking questions about what you have observed, you might want to investigate further and find out what is already known about your observation. For example, your mom might tell you that bleach washes certain chemicals out of fabric. You might also find in the chemistry book that bleach works by breaking molecular bonds that cause chemicals to appear colored. Then

you can ask some further questions. Does bleach work better on some sorts of stains than on others? Is it better to bleach clothes in hot or cold water? After this, you may test different ideas to learn more about how bleach works. Even though eventually you may not get solid answers to all these questions, you are actually using scientific ways of thinking when you are just doing a load of laundry.

What makes a good explorer?

There are many other important qualities that make a good explorer.

- Curiosity opens up new doors and leads to new paths. It is what drives humans to ask questions and explore. A curious mind is an active mind that keeps an explorer moving forward.
- Courage gives explorers the strength and determination to pursue their quests. It is what allows them to set off into the unknown and remain steadfast in the face of adversity.
- Staying focused is important for an explorer. In a world that is often filled with distractions, it is easy to lose focus. If an explorer loses track of where they are headed, their exploration is not going to get them where they want to go.
- Resilience is the ability to respond well to challenges, problems and setbacks. If an explorer wallows in their defeats, they will remain stuck. A good explorer will not be affected by difficulties for long and can quickly bounce back and recover from them.
- Optimism is about believing that everything is going to turn out fine. A good explorer knows that things may sometimes go wrong during an exploration, but they focus on the bright side. There are some tough days but a good explorer does not view them as permanent situations and believes that things will improve.

Lecture

Scripts

OK, let's get started. Great. Today I want to talk about space exploration. Exploring space is cool, but it's also pretty expensive. So why should we spend so much on space exploration? Here are the five most compelling arguments for continuing the exploration of space.

First, it will protect the Earth from a catastrophic asteroid strike. About one time every 10,000 years, an asteroid the size of a football field crashes into the Earth, causing tidal waves big enough to flood the coast. But there are bigger asteroids out there, and that is what we need to worry about. Keeping an eye out for these objects may save humanity from extinction.

Second, it will lead to more great inventions. The space program is responsible for many great things. We already know about freeze-dried food, but there are so many more examples. For instance, there's nitinol, a material that was developed for satellites. Today it's used in braces.

Third, we need raw materials from space. There's gold, silver and other stuff out there in space. For instance, the moon is a potential source of rare earth elements that you find in electronics and solar panels.

Fourth, it might tell us whether there is life beyond the Earth. So far, we have failed to find

extraterrestrial life, possibly because the Earth's atmosphere interferes with our reception. That's why researchers are eager for more orbital observatories like the James Webb Space Telescope, which will search for the chemical signs of life in the atmospheres of distant planets. I mean, it's a start, but might finally help us answer one of the biggest questions in human history: "Are we alone?"

Finally, we may need to move into space to survive. Satellites are helping us to monitor pressing problems here on the Earth, from forest fires to oil spills. But our population and pollution have seriously damaged our planet. So this has led some experts to argue that we should be preparing to move to another planet, and soon. Our survival might depend on it.

Questions:

1. Which aspect of asteroids is mentioned in the lecture?
2. What does the speaker want to say by mentioning nitinol?
3. In what way could orbital observatories help us, according to the lecture?

Reference answers

Listening and understanding

1

1) protect
2) great inventions
3) raw materials
4) life
5) survive

2

1. B 2. A 3. B

Thinking and speaking

Should we send a hello to aliens?

1

Sample 1

I think it is reasonable to send messages to extraterrestrial civilizations. In the past, we've always assumed that any alien civilization with the capacity to detect us will take the initiative to make contact, sending us signals to let us know that they are there. But there might be civilizations out there that choose not to reveal their existence unless we make it clear that we want to make contact. They might be waiting for us to make the first move by messaging them directly. Furthermore, sending them messages may do us a lot of good. Extraterrestrial civilizations which can receive and respond to our messages will very likely be more advanced than humanity. This means they will know more and be able to undertake activities which we cannot do at present. We may therefore learn new things across many disciplines and improve ourselves both socially and technologically. In short, sending messages to possible alien civilizations is a worthwhile endeavor.

Sample 2

I think making our presence known to advanced alien civilizations might be dangerous. Alerting them to our presence in the universe could make them interact with us in ways that might harm or destroy our society and our species. Some space scientists have warned us that aliens might not be as friendly as we imagine. They may even want to conquer and colonize Earth. We may look at the many examples in human history where the encounters between two different cultures with disparate technological levels often had serious consequences for the less developed culture. It is not known if any extraterrestrial civilization capable of communicating with us would be a benign one. Therefore, it would make more sense to pause and learn more before doing something that might do more harm than good to our world.

2

The following are some possible messages that we can send to aliens:

- Images of the Earth;
- Recordings of "hello" in different languages;
- Answers from the public to the question: How is the planet we live on important to us?
- A world map;
- Emoji that express basic human emotions;
- A crossword puzzle with all the words about Earth;
- Recordings of sounds on Earth, including human voices, car alarms, bird songs, etc.

China's space exploration

China has made considerable achievements in space exploration. For example, according to the China Satellite Navigation Office, China's domestically developed Beidou Navigation Satellite System had been offering services to users in more than 120 countries and regions by the end of 2019. Another example is the successful landing of the *Tianwen-1* probe on Mars on May 15, 2021, "leaving a Chinese footprint on Mars for the first time," as Xinhua put it. It was also reported by CGTN on April 16, 2022 that three taikonauts safely returned to Earth after living and working in the space station complex for 183 days, the longest stay in space by Chinese astronauts on a single mission. These efforts and achievements have improved our understanding of the universe and enhanced the development of China's space exploration.

Viewing & speaking

Scripts

In the 1950s, a group of farmers in Idaho were surprised when their sheep gave birth to some very unusual lambs. The lambs were unusual because they each had only one eye. The farmers didn't understand why this had happened, so they called in scientists from the US Department of Agriculture to investigate.

The researchers decided that the mother of the lambs had eaten poisonous plants. These plants had caused the lambs to be born with one eye. The researchers collected the local plants. They fed these plants to lab rats, but the same thing did not happen. So they decided to directly observe

the sheep. One scientist even lived in Idaho with the sheep for three summers. After a decade of watching and waiting, the scientists finally found the cause of the problem: a wild plant called corn lily. The corn lily contains an active molecule with six connected rings. The scientists named the molecule cyclopamine because of the cyclops sheep. They didn't know exactly how cyclopamine caused the lambs to have one eye. However, they told the farmers to keep their sheep away from cyclopamine.

It took about four decades before a team of biologists, led by Professor Philip Beachy, found the answer. His lab was studying a specific gene found in many species, from mice to humans, called the hedgehog gene. Beachy and his colleagues performed genetic modifications to turn off the hedgehog genes in mice. This genetic modification resulted in severe defects in the development of the mice's brains, organs, and eyes or, rather, eye.

Then Beachy came across photos of the cyclops sheep. When he saw the photos, he realized what scientists had been trying to understand for four decades. The defect in the sheep must have something to do with the hedgehog gene. Let's take a step back. Genes contain instructions that tell cells what to do and when to do it, and they communicate what they want using proteins. The hedgehog gene itself tells cells to release a so-called hedgehog protein. Here's how it works in normal healthy development. Hedgehog protein latches onto a protein called patched. That holds patched back, allowing another protein called smoothened to freely signal the cells. Smoothened tells the cells where to go and what kind of tissues to become. Cyclopamine, in the form of a delicious corn lily, for example, interrupts this pathway by binding onto smoothened. That locks smoothened up so that it's unable to send the signals needed to shape the brain into two hemispheres, and form fingers or separate eyes. So even though the hedgehog protein is still doing its job of keeping the way clear for smoothened, cyclopamine blocks smoothened from passing along its chemical message. That settled the science behind the one-eyed sheep.

However, Beachy and his team had an idea about a more beneficial connection. They proposed using cyclopamine's smoothened binding powers as a treatment for some cancers. Unfortunately, researchers eventually found that cyclopamine causes negative side effects, and its chemical properties make it difficult to work with. But they did discover that closely related molecules are safe and effective, and two of these drugs were approved in 2012 and 2015 as skin cancer medicines. When those farmers first saw the cyclops sheep, they could have decided that it was a genetic mutation and walked away. Instead, their decision to investigate turned a mystery into medicine.

Questions:

1. What did the scientists do when they found the lab rats did not have the same defect as the cyclops lambs?
2. What did Professor Beachy and his team study before he saw the photos of the cyclops sheep?
3. What did Professor Beachy realize when he saw the photos of the cyclops sheep?
4. What can smoothened do?
5. Why is cyclopamine not used in the treatment of cancers?

Reference answers

Viewing and understanding

1

1); 5); 2); 4); 3)

2

1. B 2. C 3. A 4. D 5. A

Thinking and speaking

From cyclops sheep to cancer treatment

1

I would ask the farmers some of the following questions:

- When was the first time you found that the sheep were unusual?
- Could you describe the ways in which these sheep were unusual?
- How many sheep have been found to be unusual?
- Is there anything special about the grazing behavior of these unusual sheep?
- How old are these unusual sheep?
- Are these unusual sheep of the same breed as the other sheep?
- Have you heard about similar birth defects in animals other than sheep?
- Have you heard about similar birth defects on other farms?

2

I don't think it is enough just to know that cyclopamine is responsible for birth defects. We also need to understand the mechanism of how cyclopamine causes the defects if we want to prevent these from happening or to find a cure. Only when we seek to explore the hows and whys behind initial observations can we have a better understanding of how things work, which may ultimately result in more discoveries and inventions, like the new medicines for skin cancer in the case of cyclops sheep.

Path to scientific discovery

Any scientific research builds upon previous work. That is why scientists need to know what other people have already figured out about a particular topic before they launch a scientific investigation. This knowledge allows scientists to understand what has been done on the topic and to figure out which questions can be fruitfully tackled with available tools. In fact, the history of science shows that, to a large extent, scientific discoveries rely on the accumulated knowledge of the scientific community. For example, the development of COVID-19 vaccines would not have been possible without the prior work of Louis Pasteur, who discovered the principles of vaccination in the 1800s. Since Louis Pasteur relied heavily on microscopes for his studies of germs and vaccines, he was also building upon the technological work of Robert Hooke, who, using a microscope, was the first to visualize a microorganism.

Unit project

Reference answers

Chairperson: (*Turning to the astronauts*) Thank you for the wonderful speeches.

(*Turning to the audience*) Here comes the Q&A session, which will last for twenty minutes. Please raise your hand if you have any questions concerning the speeches.

Student 1: I am an engineering student. Basically, my question is, what inspired you to become an astronaut?

Astronaut 1: I first became interested in the astronaut program when I was a kid. When there was a launch, it would be shown on TV. I was greatly intrigued when I saw those astronauts up in space, going on spacewalks and performing scientific experiments. I thought that was something I'd like to do. I also read quite a lot of science fiction about space exploration. I wanted to see how much of what was described in science fiction would become real in the future.

Student 2: I am a freshman in computer science. You stated that your interest started when you were a kid. Could you tell us how you made this childhood interest become a reality?

Astronaut 1: Thank you for the question. The idea of being an astronaut fit very well with my other interests. I enjoyed math and physics in school. I knew I wanted to get into engineering. And then I was also interested in flying. Fortunately, I was able to pursue those interests all the while, gaining some knowledge and experience I needed to become an astronaut.

Student 2: What's your best memory of your time in space?

Astronaut 2: There are so many precious memories. The first time I looked out the window once I was in space, I just couldn't believe what I was looking at. Even though I had seen many pictures of the Earth taken from space, when I saw it with my own eyes, I just gasped. There, right against the blackness of space, there was this beautiful blue Earth and the thin layer of atmosphere that was protecting us. It was incredibly amazing.

Student 3: I am a big fan of science fiction. I wonder what's it like coming back to Earth after spending months in space?

Astronaut 2: If I've understood your question correctly, you are asking how I adjusted to my life back on Earth.

Student 3: Yes.

Astronaut 2: Adjusting to life back on Earth can be challenging. After months of living and working in space, we need to get used to living on the Earth's surface again. For example, the first thing I noticed when I came back was that everything seemed really heavy here. I could even feel the weight of my lips and tongue and I had to change the way I talked. Besides, I needed to adapt to the many changes that had taken place on this planet while I was away. But I have to say that it's really nice to come back. It's wonderful to be able to have human contacts, go to concerts, enjoy good food, and go for a picnic.

Student 4: I am a second-year medical student. My question is, would you like to go into space again?

Astronaut 1: I would love to go again if I have a chance. But you know, the opportunities to go into space are very limited. I have been so lucky to realize a dream I've had since I was a kid, and I'm very grateful for that.

Student 4: What will space exploration be like in the future?

Astronaut 2: I believe there will be rapid advances in space science and technology. And I think the collaboration between different nations and organizations is the key to the future of space exploration. Creating close partnerships that bring our technical strengths, resources, and capabilities together will tremendously increase the probability of mission success. We need to work together for our shared future of space exploration.

Chairperson: Thank you for the questions and answers. That is the end of the Q&A session, and this concludes our event for today. Thank you for having joined us.

Further listening

Conversation

Scripts

Interviewer: Polar oceans are more foreign to scientists than the Moon or Mars. But we are getting closer to discovering more about these vital environments with the advanced robotic technology. Today with us is Dr. Alex Forrest whose robots are built to access underneath ice shelves and to gather data for large-scale maps and models. Dr. Forrest, could you share with us what you've been doing recently?

Interviewee: We've been working on the Nansen Ice Shelf in the Antarctic. This ice shelf has been an area of interest because it's breaking up. We try to obtain important data to create a comprehensive model of this ecosystem.

Interviewer: So these data will help answer questions like how fast the ice shelf is melting?

Interviewee: Hopefully, but this isn't an easy job. Exploring these icy worlds is a balancing act of keeping people and equipment safe in extreme weather and ocean conditions, bringing back accurate data, and preserving the very delicate ecosystem we want to study.

Interviewer: What are the biggest challenges in exploring beneath polar ice caps?

Interviewee: One of the biggest challenges underwater is that we don't have positioning, we don't have Wi-Fi, we can't get radio signals through, and we don't have GPS, all these tools that we use in regular mapping. We're basically guessing where we are underwater.

Interviewer: In what ways do you think these data are important for us?

Interviewee: The polar regions are changing faster than anybody ever predicted. It's not just a matter of large pieces of ice shelves breaking off. What I find more worrying is that our sea ice volume is at some of the lowest it's ever been. So we need to know the baseline conditions of today if we're to predict how they're gonna change and evolve in the future.

Questions:

1. Why are researchers interested in the Nansen Ice Shelf?
2. What does the man imply about exploration beneath polar ice caps?
3. What is the man worried about?

Reference answers

1. C 2. D 3. B

Passage 1

Scripts

Adventure stories are one of the earliest forms of written fiction. Many medieval stories and romances, such as the tales of King Arthur, consist of a series of adventures.

Adventure tales describe a remarkable or unexpected journey, quest, experience, or event that a person participates in, often as a result of chance. Adventures can include risky situations, physical danger, narrow escapes, brave deeds, exotic people and places, and problems that characters will have to solve through intelligence, imagination, and skill.

A good adventure story has the ability to draw us into a world we might otherwise never explore. We come to care about the characters and the things that are important to them. We visit places we would normally never choose to go to and sometimes glimpse a little spark of adventure inside us we didn't know was there. We start to feel like we're along for the ride too, and we find that we can't wait to see what's just around the next corner.

We're caught up in the story, learning as we go, even if we weren't intending to. Maybe we learn the sounds of a storm or what it might feel like to wake up under the stars on a wide, rolling ocean. And perhaps when we put the book down, we walk out into our own backyard and see it with a little more wonder.

While many people think adventure stories are mostly for kids, there are a lot of books and movies in this genre that will satisfy adult tastes as well.

Questions:

1. Which aspect of adventure stories is mentioned in the passage?
2. Why do adventure stories appeal to readers?
3. Why does the speaker mention the sounds of a storm?

Reference answers

1. D 2. B 3. C

Passage 2

Scripts

Most people don't recognize the name of explorer Bjarni Herjólfsson. In the year 986, when Bjarni and his crew sailed from Norway to Greenland in a trip to visit his father, storms blew them far off course. When the weather cleared, they were relieved to find land. But instead of the familiar mountains and glaciers of Greenland, they saw forests. His crew begged him to land and explore this new area. But anxious to reach his intended destination, Bjarni turned the boat around and headed back out to sea, making it to Greenland a week later.

Years later, he told his story to a friend, who decided to buy Bjarni's ship and follow his route. His

friend was Leif Erikson. And that strange land Bjarni had seen was Canada.

Today, thanks to his curiosity, Leif Erikson goes down in history as the first European to set foot on the North American continent.

People often fail to recognize curiosity as a critical skill. In fact, many of our early stories of curiosity are warnings against its evils. Icarus is punished for flying too close to the sun. And Pandora releases evil into the world.

Curiosity challenges authority. Curious people are not content to merely do as they are told. And they're unwilling to comply with a world that sees changing your mind as a weakness. So it's easy to see how curiosity becomes a distraction that pulls us from the focus needed to carry out our daily tasks.

Yet, as Leif Erikson and countless others have found out, curiosity – and a willingness to embrace the unknown – is what inspires true accomplishments. It's the difference between choosing safety and venturing out into the unknown.

Questions:

1. What is true about Bjarni's trip?
2. What do we learn about Leif Erikson?
3. What does the story of Bjarni Herjólfsson and Leif Erikson tell us?

Reference answers

1. C 2. B 3. A

Lecture

Scripts

Today I'd like to continue with the topic of introduction to archeology and I will focus on the concept of archaeological surveying, that is, the process of looking for sites.

First of all, let's define what we mean by a site. A site can be simply defined as a place where traces of past human activity can be found. Some sites are pretty obvious. For example, when you look at the Athenian Acropolis, you know that you're looking at an ancient site. But others can be very tiny and almost difficult to see.

There are two basic ways to find sites: doing surveys on the ground and doing surveys from the air or even from space these days. Ground surveys first began to be popular in the 1960s and 1970s and then they gained speed in the 1980s. In part, that's because they're usually a much cheaper alternative to digging and they can cover a lot more ground. They also allow you to ask and to answer different types of questions than you can when you're digging a single site. So for instance, you might want to investigate how intensively a specific area in Greece was occupied during the

Bronze Age. Did that settlement pattern change over time? Ground surveys can help you answer these kinds of questions. By doing surveys and identifying the various sites from different periods in the area, you can actually construct a history of the region without ever digging at a single site.

These days, instead of leading with a ground survey, it actually makes more sense to start with aerial surveys, if you can afford them. This could be as simple as buying aerial photographs or satellite images from specific companies or as complicated and expensive as arranging for overhead flights using lidar to survey your area. After conducting the survey, you would probably be able to decide whether or not to carry out an excavation.

Questions:

1. What is the lecture mainly about?
2. Why does the speaker mention the Athenian Acropolis?
3. What do we learn about ground surveys?
4. What does the speaker say about aerial surveys?

Reference answers

1. A 2. B 3. C 4. D