Lesson 1: Explore Earth's Mysteries

UNIT: Earth Explorers

TRANSCRIPT

HOOK 1

Hi, writers. It's Margaret.

My friend Lucy likes to play outside. She has a big park in her town. It has a large lake where people take their dogs out on standing paddle boards. It also has a playground with fun swings and big open spaces to fly colorful kites.

DISCUSSION 1

Discuss: What is something you like to do outside?

HOOK 2

I don't know what you said, but I like to go hiking where I can see amazing views.

The park in Lucy's town has a visitor center where people can go to learn about activities in the park as well as the plants and animals that live in the park.

Recently, the visitor center at Lucy's Park put up a new exhibit: Earth Exploration. It features posters of curious places all over the world.

Check out this poster—it's about the Great Blue Hole. It may look like just a dark circle in the ocean, but it's actually a sinkhole that is over 400 feet deep. People can explore it

by scuba diving or taking submarines to explore the amazing creatures and caves inside.

Here's another poster about a place called Old Faithful. It may look like a small hill with steam coming out of it, but every once in a while—wow! Boiling hot water erupts out of the ground.

Lucy was so interested in the Earth Exploration exhibit—she asked one of the rangers at the visitor center about it. She learned that this exhibit is for visitors who want to investigate a mysterious place on Earth. Anyone who wants to participate can choose a place out of the Earth mystery bag. Then they can learn about that place and make a poster to add to the wall. People who make posters earn an Earth Explorer badge.

Lucy really wanted to make a poster and earn her badge, so she drew a place out of the Earth mystery bag and she pulled the sailing stones—here's what they look like.

Lucy noticed that the sailing stones look like they have moved. But wait a minute. Rocks can't move on their own.

DISCUSSION 2

Discuss: How do you think these rocks moved?

HOOK 3

Maybe you thought people pushed them, or maybe animals moved them, or maybe they were blown around by the wind. You may have thought of something else, and that's great.

Lucy doesn't know how the rocks move yet, so she found some videos and other information so she can start to learn more.

There are still more Earth mysteries in the bag. To help the visitor center finish their exhibit, you can make a poster about an amazing place on Earth. We'll pick two mysteries out of the bag. You'll learn about both of them, and then choose which one you want to make a poster about. Then you can earn your Earth Explorer badge too.

The first mystery is: Firefall.

Wow, that was incredible!

Let's see what Earth mystery comes out next. It is: Sky Mirror.

Wow! The Firefall and the Sky Mirror are incredible to see. You may have some questions about these mysterious places.

DISCUSSION 3

Discuss: What questions do you have about the Firefall and the Sky Mirror?

HOOK 4

You probably have lots of questions about both of these places, and that's great.

In order to answer your questions, you'll need to do some research to find out more.

Today, you'll watch videos and read facts to learn about both of these places. You'll take notes on what you learned so you can remember the information later on when you write your poster.

After you learn about both places, you can choose which one you want to feature in your poster for the visitor center.

I'll get you started, step by step.

STEP 1

Get your supplies.

STEP 2

In today's lesson, you'll need someone to share ideas with. This could be a partner or someone you sit near. When everyone knows who their talk partner is, move on to the next step.

STEP 3

Fold your Explorer Notes worksheet and your Explorer Facts worksheet in half, like this.

Flip both of them so the “Firefall” side of each worksheet is face up on your desk.

STEP 4

Let's learn a bit more about the Firefall.

The Firefall is amazing to see, but it doesn't look like this all the time. Most of the time, it's a huge waterfall that looks like this.

So how does it glow? Well, you may have seen a fountain like this one. Sometimes people put colored lights underneath the fountain, and it looks like this. Notice how the colored lights are making the water glow.

The Firefall is lit with one big light—the sun. During a sunset, the sun shines with orange light.

Here's a sped up video of the Firefall.

Notice how it is a big waterfall, but as the sun sets, it starts to glow orange from the light of the sunset.

In summary, first, the Firefall looks like a tall waterfall. Second, the sun sets with an orange color. Third, the sunset shines on the waterfall, making it glow orange like fire.

Discuss with your partner: What did you learn about the Firefall?

STEP 5

Find the "How it works" section of your notes.

Write a few words to describe what the Firefall looks like at first, what happens second, and what happens third. You can use my notes if you want or come up with your own.

STEP 6

Nice job, writers. You now have some notes about how the Firefall works.

Get your Explorer Facts worksheet. Let's read to learn even more about the Firefall. The first section says, "Firefall is located in Yosemite National Park, which is in California."

Find the line that says "Location" on your notes. Write, "Yosemite National Park, California."

STEP 7

Let's read the next part. It says, "The Firefall can only be seen in mid- to late February, during sunset.

Fill in the, "When to see it" section in your notes.

STEP 8

Let's read the last part. It says:

> "The waterfall that becomes Firefall is called Horsetail Falls.
>
> Seeing the Firefall is very rare. When it happens, it only lasts about ten minutes.
>
> Over 1,000 people travel from all over the world to try to see the Firefall every year.
>
> The Firefall is over 2,000 feet tall. That's as tall as a 200-story building."

Write any facts you learned in the "Extra Facts" section of your notes.

STEP 9

Put your notes side by side with your partner's notes. Share the notes that you took. If your partner wrote a note that you don't have, you can add it to your notes.

STEP 10

Amazing job, writers! You learned about one of the Earth mysteries and took lots of notes. Now let's learn about the other one, the Sky Mirror.

Flip both your Notes worksheet and your Facts worksheets over so the "Sky Mirror" sides are face up on your desk.

STEP 11

Let's learn a bit more about the Sky Mirror.

The Sky Mirror is amazing to see, but it doesn't look like this all the time. Most of the year, it looks like this. It's a huge flat desert, and it doesn't look like a mirror at all.

But sometimes it rains on the desert, and the desert turns into a very shallow lake. When the water is still, it creates reflections.

You may have seen reflections in water before, like in a puddle or on a lake or pond. The Sky Mirror is like a gigantic puddle. The shallow water reflects the sky and anything else around.

In summary, first, the Sky Mirror is a huge flat desert. Second, rain falls on the desert creating a shallow lake. Third, the shallow water creates amazing reflections of the sky.

Discuss with your partner: What did you learn about the Sky Mirror?

STEP 12

Find the "How it works" section of your notes.

Write a few words to describe what the Sky Mirror looks like at first, what happens second, and what happens third. If you want, you can use your Word Bank to help.

STEP 13

Get your Explorer Facts worksheet. Let's read the first two sections:

> "Sky Mirror is located in Bolivia, which is in South America.
>
> The Sky Mirror can only be seen during the rainy season, usually December through April. It can be seen any time of day."

Fill in both the "Location" and "When to see it" sections of your notes.

STEP 14

The last part says:

"The Sky Mirror is the world's largest mirror. It is 80 miles across.

The ground under the Sky Mirror is a salt flat. That means the ground is made almost entirely of salt.

The movie S*tar Wars: The Last Jedi* filmed some of the scenes at the Sky Mirror."

Many animals live at the Sky Mirror, including flamingos and vicuñas. A vicuña is similar to a llama.

Write any facts you learned in the "Extra Facts" section of your notes.

STEP 15

Put your notes side by side with your partner's notes. If they wrote something that you do not have, you can add that fact to your notes.

STEP 16

You now have notes about two amazing places in the world. They may have started as mysteries in the bag, but now you know all about them and how they work.

Now you can decide which one you want to make a poster about for the visitor center.

Unfold your Explore Notes worksheet.

Circle the name of the place you want to make a poster about.

STEP 17

The papers shown on the screen are V.I.P.s—very important papers. Your teacher will tell you where to put them so you'll have them for the next lesson.

WRAP UP

Fantastic job, writers! You researched and took notes on two amazing places on Earth. You may have decided to make a poster about the epic Firefall or the stunning Sky Mirror. Either way, your poster will help people at the visitor center learn all about amazing places on Earth.

In the next lesson, you'll use your notes to start drafting a paragraph for your poster. When your poster is all done, it will reveal all the facts about the amazing place you chose.

I'll see you next time.