**Student-Led Learning: Studying Volcanoes**

[MUSIC PLAYING]

TEACHER: OK, boys and girls. So who remembers what our essential question is for this week? Sophia, what is our essential question for this week?

STUDENT: How does a volcano change the earth?

TEACHER: Very good. Our essential question is how does a volcano change the earth? So let's really quick go over some of the vocabulary that we talked about yesterday. Let's start with the earth's crust. Let's remember what is the earth's crust? All together--

CLASS: The outer shell of the earth.

TEACHER: Very good. The outer shell of the earth is the crust. Let's do plates next. All together, please. Plates--

CLASS: Huge pieces of rock under the surface of the earth.

TEACHER: Very nice. So yesterday we came up with an synonym for explode. And Robyn, can you tell us what the synonym was for explode?

STUDENT: Erupt.

TEACHER: Erupt, very good. Turn and tell your partner what the antonym for active was.

CLASS: Inactive--

STUDENT: --or act--

STUDENT: So there's inactive or active.

STUDENT: Yep. Inactive is the antonym for active.

TEACHER: Who would like to share that with our whole group? Lily?

STUDENT: Inactive.

TEACHER: And what does that mean? When it's inactive, it's--

STUDENT: Staying together.

TEACHER: Very good. So we talked this week about ways that we're going to show our learning. And the way that we're going to show our learning at the end of the week is that we are going to be reporters. You are either going to write a newspaper article yourselves by sharing some text evidence, or you are going to work with a partner to do your own news report broadcast. So go ahead and open your books to volcanoes.

Explain the scientific reasons why volcanoes erupt. So boys and girls, can you please turn the page 324 and 325? And our question is explain the scientific reasons why volcanoes erupt. I would like you to reread pages 324 and 325 with your partners, and look for some text evidence of scientific reasons why volcanoes erupt. Go.

STUDENT: Compare to the whole earth, the earth's crust is lean. The crust is broken into pieces.

STUDENT: --the second paragraph

STUDENT: Like a cracked [INAUDIBLE] like a cracked hard boiled egg. Each piece is called a plate. Deep inside the earth, earth's core-- it is-- it-- wait.

Core is so hot, the rock around it melts. The melted rock is called magma. As magma heats up, it rises. Go ahead, Cara.

STUDENT: Below the ground and water, that earth's crust is broke into plates. Plates are on the move, but we can't feel it. The fastest plate moves just six inches each year. OK, Tristan, you can read that.

STUDENT: If the plate move hard--

STUDENT: These fastest plates move just six inches each year.

TEACHER: (SINGING) Give me your attention.

CLASS: (SINGING) Lets pay attention!

[CLAPPING]

TEACHER: Again, our question was using text evidence, explain the scientific reasons why volcanoes erupt. Cara and Pressley, what did your group come up with for why volcanoes erupt?

STUDENT: We saw on page 324, of the last paragraph, the last sentence--

CLASS: Scientists think these magma currents make the plates move.

TEACHER: So, very nice girls. I see you have several people agreeing with you. So scientists believe that magma currents are underground. So how could I do a bullet point for that? Can I just say magma currents?

CLASS: No.

TEACHER: No? So what-- do I need to add something onto that? Read me your sentence again.

CLASS: Scientists think these magma currents make the plates move.

TEACHER: Magma currents make plates move. Do you think that I would-- can I add onto that?

STUDENT: On page 325, it says at the first paragraph, if the plates move large enough apart, magma reaches the earth's surface. Magma may explode into the air. It may flow into the earth's surface.

TEACHER: OK. So I could say plates moving. So we already have magma currents, plates moving. What else could I say?

STUDENT: Magma reaches the earth's surface. Magma may explode onto the air.

TEACHER: OK. Magma reaches the earth's surface. What page was that?

STUDENT: 325.

TEACHER: 325, because we always want to have our page numbers so we can go back. I would like you to answer question number two and question number three. One, two, three, four.

CLASS: Everybody off the floor.

TEACHER: Five, six, seven, eight.

CLASS: Backs in chairs, sit up straight.

STUDENT: So right here, let's write down what we have.

[SIDE CONVERSATION]

STUDENT: Now how do-- you can't forget your punctuation.

CLASS: No.

TEACHER: When you're finished with question number one, go on to question number two.

[SIDE CONVERSATION]

How do they know it smells?

STUDENT: --volcanoes ready to erupt.

[SIDE CONVERSATION]

Scientists know. Scientists know.

[SIDE CONVERSATION]

N-o-w.

[SIDE CONVERSATION]

Scientists know--

STUDENT: --make the wow. I just found it.

[SIDE CONVERSATION]

STUDENT: --make the plates--

STUDENT: -- everything up right here. I read volcanoes sometimes might move because when they are [INAUDIBLE]. I notice that they shake.

TEACHER: He's going to have to join with you guys, OK? Because what we [INAUDIBLE].

STUDENT: So scientists might lose monitors. They should scan them and--

STUDENT: No, no, no, no it says it right here. Scientists know--

STUDENT: --erupt when it swells.

[SIDE CONVERSATION]

TEACHER: Shark bait!

CLASS: [INAUDIBLE]!

[CLAP]

[FOOT STOMP]

TEACHER: Let's everyone direct your attention to the second question. How do scientists know when a volcano is ready to erupt? Kim.

STUDENT: On page 320, scientists noise volcano is getting ready to erupt when it swells to second--

TEACHER: Stop there for just a minute. Good job, Kim. Kim read scientists know a volcano is ready to erupt when it swells. That's what most of you are putting as your answer. And that is correct.

But Kim was going to read on. And boys and girls, that's what I want to point out to you. Most of you are just stopping there. I want you to keep reading.

OK? I want you to add onto your own answers. So just like we add on in our conversation, I want you to ask your partners to add on.

STUDENT: Maybe it's on the next page? [INAUDIBLE] may have different parts like the--

[INTERPOSING VOICES]

STUDENT: No, that doesn't change the earth.

STUDENT: Well, wait. What about this one? The next page. OK.

STUDENT: OK. Scientists know a volcano is getting ready.

STUDENT: Oh! This one's supposed to be this one! Oh. OK, it's fine.

STUDENT: OK. Let's just make a line under it and then [INAUDIBLE]. OK, I am.

STUDENT: Magma heats and rising. Magma cools and sinks. Second boiling point, scientists think these magma currents make the plates move. Last bullet point, scientists know when a volcano is going to erupt when it swells.

STUDENT: Earthquakes around the volcano lots of [INAUDIBLE] and other clues. Magma rises inside the volcano.

STUDENT: So it says when it swells, enough people see it getting bigger. Especially surprises inside the volcano goes up.

STUDENT: Six.

STUDENT: Magma rises through the volcano. So this is the volcano.

STUDENT: A tiny movement.

STUDENT: So this is the volcano. The pencil-- the--

STUDENT: Yeah, it rises. So the pencil's the magma, and then it goes up. See that? Like the picture. It looks like it's exploding because the magma pushed it.

And it goes up. It goes up. But it can't go fast, because if it goes fast, [INAUDIBLE] explode faster. I'm going to write down one more part of this.

TEACHER: (SINGING) Give me your attention!

CLASS: (SINGING) Let's pay attention!

[CLAPS]

[FOOT STOMPS]

TEACHER: OK. So boys and girls, I would like you to compare the cone and the shield volcanoes. But before you start, I would really like you to read the two pages.

STUDENT: If the lava is running, it spreads out on the earth surfaces before it goes and becomes slid. This kind of lava forms a very flat shield shaped volcano.

STUDENT: No, that's not a [INAUDIBLE].

STUDENT: [INAUDIBLE].

STUDENT: I know. Mauna Loa in Hawaii is the earth's largest volcano.

STUDENT: OK, now we'll read this. If lava is stuff-- stiff, it piles up on the earth's surface. It forms a cone shaped volcano with steep-- with steep sides.

STUDENT: If the lava is [INAUDIBLE] on the earth's surfaces, [INAUDIBLE] is a shield shaped volcano. It started when lava poured out of an opening on the ocean floor. And Then lava built up in layers.

[INTERPOSING VOICES]

STUDENT: --forms a flat shell shaped-- shell shaped volcano. It started when lava poured out of opening on the open floor. The lava--

STUDENT: On the ocean floor!

STUDENT: So I found the one on cone. If the lava is stiff, it piled up on the earth's surface and formed a cone shaped volcano with steep sides.

[SIDE CONVERSATION]

STUDENT: The volcano that erupt in Iceland is a cone shaped volcano. It is not very active.

TEACHER: (SINGING) Give me your attention.

STUDENT: (SINGING) Let's pay attention.

[CLAPS]

[FOOT STOMPS]

TEACHER: Now that you have re-read those pages, make sure that you know what information, what text information, what text evidence, Ricky, that you are looking for on here. So this site is for the cone volcano. This site is for the shield.

So you're going to need to know how do they form, the description of them. So that's what they look like, their physical features, what they look like. Just kind of like we did with animals.

You're going to sketch them, a quick drawing. And then any other important text evidence that the author thinks you need to know about those kind of volcanoes. Think about things that you might want to put in your news report.

[SIDE CONVERSATION]

TEACHER: This kind of lava forms a flat shield shaped volcano. So what was the lava?

STUDENT: A flat shield shape.

TEACHER: Yeah, but what was the lava? What did it say about the lava?

STUDENT: When it's runny, it spreads out and turns into a shield.

TEACHER: You got it. So could you write that down?

STUDENT: Yeah, I'll erase this. It piles up.

TEACHER: Yup, because it's runny. See?

[SIDE CONVERSATION]

STUDENT: We're not going to have time.

[SIDE CONVERSATION]

STUDENT: Really? You see that? I should see something.

[SIDE CONVERSATION]

STUDENT: --volcano.

[SIDE CONVERSATION]

TEACHER: What about it?

STUDENT: Like, it doesn't shape as a cone?

TEACHER: Because this is shield?

STUDENT: Yeah.

TEACHER: So which one is shield? Yeah. So this is shield and this one is cone. You're right. We're not in the same order. What does the lava do?

STUDENT: It--

[INTERPOSING VOICES]

TEACHER: What kind of lava, buddy? What is the kind of lava?

STUDENT: Solid.

TEACHER: Well, it becomes a solid. What is it before it's a solid? Read that.

STUDENT: Lava is a flat shield shaped volcano. It becomes a-- lava shape.

TEACHER: So what kind of lava forms the flat shield shaped volcano?

STUDENT: A [INAUDIBLE]?

TEACHER: Well that's what happens before it cools?

STUDENT: It--

TEACHER: Read back. Go back and read.

STUDENT: [INAUDIBLE] runny? [INAUDIBLE].

TEACHER: So what kind of lava is it?

[SIDE CONVERSATION]

STUDENT: Runny lava?

TEACHER: [INAUDIBLE]

(SINGING) Give me your attention!

CLASS: (SINGING) Let's pay attention!

TEACHER: OK. So now we're going to do inside outside circle. You're going to leave your pencils and your books. And please take your papers. If you are the ham, I would like you on the outside circle.

Please remember to push your chairs in. And I'll be an outside circle. If you are the cheese, please go quickly to a ham.

Quickly, in 3, 2. And what you are going answers with your partners. You are going to share text evidence. I know that we all did not get finished.

[SIDE CONVERSATION]

TEACHER: OK, begin!

[SIDE CONVERSATION]

STUDENT: --it piles up on the earth's surface and forms a cone shape.

[SIDE CONVERSATION]

STUDENT: It piles up on the earth's surface.

STUDENT: OK, now shield. Shield forms a flat-- lava forms a flat shield shape.

TEACHER: All right. Go ahead a wrap it up. Eyes on me.

CLASS: Eyes on you!

[CLAPS]

[FOOT STOMPS]

TEACHER: Rotate!

[SIDE CONVERSATION]

STUDENT: I said, if the lava stiff, it piles up on the earth's surface and forms a cone shape, lava forms a flat shield shape. And on this [INAUDIBLE] I said it looks like a curved shape on a mountain.

STUDENT: These are my little [INAUDIBLE].

[SIDE CONVERSATION]

TEACHER: All right! Wrap it up! And switch one more time!

[SIDE CONVERSATION]

STUDENT: You go first.

STUDENT: On the back on cone, if the lava is stiff, it places up on the earth's surface.

STUDENT: The magma flows out and flows out.

STUDENT: So what I got-- I'm thinking this out of my head, [INAUDIBLE]. So I thought if I-- so volcanoes erupt because the magma goes through little currents. And then it flows out of the top. And then it makes a volcano.

STUDENT: I'm pretty sure we're both right, because you're just-- I'm just explaining your in a different way. And you're just explaining mine in a different ways.

TEACHER: Shark bait!

CLASS: Ho ha ha!

[CLAPS]

[FOOT STOMPS]

TEACHER: All right. You guys did an amazing job. And I think I can see your brains growing. Good job. You may go back to your seats.