Transcript for Video Clip 4.1

Teacher/video ID:	Potter, 4.1_stella2-04-potter4-L6_c1-c2
Content area:	Earth's changing surface
STeLLA strategy:	Engage students in using and applying new science ideas in a variety of ways and contexts (STL strategy 6).
Context:	In this clip, Mr. Potter engages students in a discussion of science ideas they've studied over the past five lessons about how Earth's surface is built up and worn down. Students are then asked to use and apply what they've learned to explain how Pikes Peak was formed.

Video Clip 1a

Time Code	Speaker	Discussion
00:00:02.8	T	So over the course of the last five lessons, we have learned about how the surface of the Earth's changed.
00:00:07.1	T	And we … these have kind of been our central focus questions.
00:00:10.2	T	Why is the surface of the Earth not always flat?
00:00:12.6	T	And what causes the Earth to build up and wear away?
00:00:16.6	T	And we've talked about a lot of concepts and ideas from … to kind of lead up to that.
00:00:21.3	T	So what we're going to do today is we're going to try and … synthesize all of those
00:00:25.2	T	and put them all together and apply those to pictures, to images of the Earth,
00:00:29.7	T	doing just these things right here.
00:00:31.6	T	OK?
00:00:33.2	T	We're going to start by reviewing all of our focus questions that we've had
00:00:36.5	T	since the very first lesson.
00:00:38.8	T	And just have a quick group discussion about those focus questions, and just to …
00:00:43.4	T	just to review and to understand the concepts.
00:00:46.5	T	And you're going to be talking in your groups. So we're going to go question by question.
00:00:49.3	T	And all of these you have in your science notebooks.
00:00:52.5	T	OK?
00:00:53.4	T	So if at any time … if you want to look back and look at your information that you summarized on the lesson,
00:00:58.4	T	do that so you can have an intelligent conversation with your groups.
00:01:02.0	T	As you're talking, try and use those terms that we talked about.
00:01:05.3	T	*Plates*, *collision*, *uplift*, *mountains*—things that we mentioned in our … in our lessons. OK?

Video Clip 1b

Time Code	Speaker	Discussion
00:39:53.1	T	So let's try and link to our idea of … of our mountains that are right here.

00:39:58.1	T	OK?
00:39:59.0	T	We have … Pikes Peak that's a 14 or … It's more than 14,000 feet tall.
00:40:05.2	T	So before we start talking about that particular picture, what do you think … what do you think happened?
00:40:10.6	T	How do you think the mountain got there?
00:40:11.9	T	How do you think Pikes Peak got there?
00:40:13.4	T	What do you think will continue …
00:40:14.8	SN	Wait, is that my—
00:40:15.7	T	… to happen to that mountain?
00:40:18.9	T	And I just want to make sure everyone is aware. Just look right here.
00:40:21.5	T	This is how we communicate in science, OK?
00:40:23.9	T	If you are unsure, there are some sentence starters for you to look at
00:40:27.7	T	and add to your ideas.
00:40:31.5	T	You can agree or disagree with someone's claim,
00:40:34.1	T	providing evidence.
00:40:35.6	T	You can add on to someone's idea.
00:40:38.6	T	You can make a new claim.
00:40:40.1	T	We're making observations from the picture.
00:40:42.1	T	We're going to start by
00:40:44.8	T	talking about our mountains that are right here.
00:40:46.5	T	What do you think is going on?
00:40:47.8	T	And what do you think is going to happen?
00:40:49.7	T	OK? I ask that you go quick, OK?
00:40:52.7	T	Anybody have any ideas about our Rockies that are right here?
00:41:03.0	T	What do you think?
00:41:04.1	SN	I think that the [inaudible] might have been made by two plates.
00:41:11.5	T	Do you think our mountains may have been made by two plates?
00:41:13.6	S	Yeah.
00:41:14.4	T	Great.
00:41:15.2	SN	[Inaudible]
00:41:15.9	T	Hold on. We're not talking about that picture yet.
00:41:17.1	T	"Two plates." What do you mean by that? Can you explain that to me?
00:41:19.8	SN	There … there might've been, like, one plate going this way
00:41:24.5	S	and another going this way. And they would've collided, and they would've, like, went up
00:41:30.6	S	and made the mountain.
00:41:31.1	T	OK. So what does somebody think about that?
00:41:33.1	T	He made the claim that there's evidence to support the fact that two plates collided.
00:41:37.8	T	What do you think?

00:41:38.9	SN	I agree with him.
00:41:40.7	S	And then I agree with him because that … if it was a big mountain,
00:41:46.4	S	then the plates … the plates would've collided together to make mountains because we learned that,
00:41:53.6	S	with the map that had the arrows,
00:41:55.6	S	we learned that some mountains collide together [inaudible].
00:42:00.4	T	OK.
00:42:01.4	T	What do you think about that? That we have evidence that our mountains are … are a result of two plates colliding together?
00:42:07.2	T	Stephanie, go for it.
00:42:09.7	SN	I-I … I agree with … Mari … Marissa,
00:42:16.5	S	but that's not the … that's not the only thing that makes it go up.
00:42:22.0	S	That's what starts it, but there's more things, like …
00:42:24.7	T	Like what?
00:42:25.7	S	Like wind can blow the dirt over, and then when it rains, it can turn into mud, and turn into adobe.
00:42:31.3	T	What do you think about that? She just made a new … a new claim
00:42:34.4	T	that also wind and rain can build up a mountain.
00:42:38.6	T	What do you think?
00:42:39.4	SN	I agree with her because
00:42:43.5	S	when you see Pikes Peak …
00:42:45.8	T	Mm-hmm?
00:42:46.9	S	and it rains, you kind of see it going down a little bit
00:42:51.4	S	because there's mud
00:42:53.0	S	and there's, like, the rocks are falling,
00:42:57.3	S	and they're making mud.
00:42:59.5	T	OK, so would you agree because she made the claim that
00:43:02.0	T	that's building up the mountains, making it taller.
00:43:04.7	T	So would you agree with that?
00:43:07.5	S	Not really. I … I would have to disagree with that
00:43:12.4	S	because I think that it's probably that when the rocks fall from the mountains,
00:43:22.1	S	the mountain gets much smaller.
00:43:24.8	T	OK. So now we have a disagreement here. We have two separate claims.
00:43:28.8	T	We have someone that's saying that rain and … What was the other thing?
00:43:33.2	T	Rain and wind can make the mountain bigger
00:43:36.1	T	along with plates colliding.
00:43:37.3	T	And you have someone disagreeing with that,
00:43:39.0	T	providing evidence that
00:43:41.6	T	maybe the … that doesn't necessarily happen.

00:43:44.0	T	It's the other way around.
00:43:45.2	T	What do we think about that?
00:43:48.5	T	What do you think?
00:43:49.4	SN	That when plates are separated, like, the mountains stay the same.
00:43:54.3	T	OK. So [when] the plates are separated, no mountains form?
00:43:56.9	S	Mm-hmm.
00:43:57.3	T	OK.
00:43:58.6	T	It's a new claim.
00:44:01.8	T	What?
00:44:02.4	SN	I agree with Stephanie because it's just not the plates that makes the mountain form.
00:44:08.9	T	OK. What else makes the mountain form?
00:44:10.9	SN	Rain and wind.
00:44:12.4	T	So you disagree with Erin that rain and wind would make … bring a mountain down?
00:44:17.2	S	Yes, I disagree.
00:44:18.3	T	All right, so what … what is your evidence to support the fact that rain makes a mountain get bigger?
00:44:23.6	S	I agree … I disa …
00:44:27.5	S	I disagree with Erin because a mountain can make … I mean rain can make a mountain
00:44:35.1	S	form because as the plates … as the plates come up,
00:44:40.7	S	the mountain … if it rains, the mountain doesn't go down.
00:44:45.6	T	OK. So now we have a claim that rain doesn't make a mountain go down.
00:44:50.3	T	Can somebody link that directly to an experiment that we did?
00:44:53.0	T	To an investigation that we did
00:44:54.9	T	with water and—
00:44:57.3	SN	Oh yeah.
00:44:59.2	S	Well, because we put dirt in the … in a little box.
00:45:03.8	S	And then we let the water run through it and
00:45:08.0	S	and see what it did, because it took away the dirt.
00:45:09.8	T	So when your group did that, it took the dirt and moved it.
00:45:13.3	T	It eroded the dirt … Erosion occurred … deposition happened.
00:45:15.8	T	Did a mountain form somewhere else?
00:45:18.1	S	Yeah, because it kind of formed on at the bottom,
00:45:21.3	S	because that's where all the sand went.
00:45:23.1	T	It formed a mountain?
00:45:25.0	T	Kind of like you started with?
00:45:26.4	T	What do we think about that?
00:45:29.1	T	Did yours form a mountain?
00:45:31.0	SN	Mine? No.

00:45:32.8	T	No? What happened to that dirt?
00:45:34.5	S	The water took the dirt, like … It took it with the water.
00:45:38.6	S	While the water was pouring, the water took the dirt with it.
00:45:41.6	T	Mm-hmm.
00:45:42.8	S	And then, like, and there was, like, [inaudible] still in there.
00:45:47.4	S	Like, there was puddles of dirt.
00:45:48.9	T	OK.
00:45:49.9	S	And some of it was … Half of it was pretty gone,
00:45:52.6	S	and some of it was still there.
00:45:54.6	T	So the dirt that went away, did it move somewhere else and form another mountain?
00:45:58.6	T	Would you say it formed another mountain? No?
00:46:01.1	T	So what do you think about that? Because he's … he's disagreeing with you.