

Clip: “Fault Introduction”

[At the IslandWood fault. Matt is kneeling next to the trench wall in blue, Brian Sherrod is to Matt’s left (in the foreground on the screen) wearing an orange vest. Seven students are seated on the ground looking at the trench wall. Each student has a journal and a pencil; they are beginning a drawing of the trench wall.]

[Begin 00:00:00

[audible comments about getting situated, needing a pencil, etc. not transcribed because not relevant. Matt begins at 00:15:00.]

Matt: So, while you’re drawing, using our keen observation skills, look and think about what, what you’re looking at, and we already know that there are different types of rocks that are out there, right? So, we wanna try to identify as many different types of rocks as we can.

00:19:12

We’re gonna spend about three minutes, three to five minutes drawing. If you wanna move down that way, you can [to girl in foreground].

01:32:29

How much more time do you guys want? A couple more minutes?
[students mumble yes and nod] Okay.

02:37:06

Clip: “What is Superposition?”

Okay, you can finish your drawing, but I want to start talking for a moment. I’m gonna teach you guys a law of geology. Yesterday you reviewed the laws of nature, the ABCs, right? I’m gonna teach you a law of geology. There’s five of them, but we’re just gonna focus on one. And this is the law of superposition. Kay? So, you might wanna write this down. It’s important word, it will help you later... on our quiz, ...no I’m just kiddin’, but this is important to understand what is going on here. So, the law of superposition is that the older rock is always on the bottom and the younger rock is always on top.

Student: What’s the law of superposition? What did I say [inaudible name]?
the older bottom, the older rock is always on the bottom or the top?

Matt: older rock is always on the bottom.

Student: and the younger rock is always on top.

Matt: always on top... Unless! And that’s the key word. The older rock is always on the bottom, the younger rock is always on top, unless! what?

[inaudible comment by student]

Somebody moves the rock. What else could cause rock to move?

[inaudible comment by student]

Possibly. A glacier. But what else?

[inaudible comment by student]

An earthquake. And what would an earthquake do?

Student: shake the plates around

Matt: so that, older rock were on top of younger rock. Okay. So, the law of superposition is important because it tells us if we see something that is out of place it tells us that there was an earthquake.

01:50:06, since last time

So, now you guys have drawn a little bit. And I'd really like to see a drawing, whose drawing they think they'd like to share?

[inaudible comment by student]

Okay. So, how many types of rocks do you guys see in this wall? How many big types of rocks, two different types of rocks, or three or four different types of rocks do you see?

Brian: Well, I think I would, I would just be a little bit broader. Tell me in general, how would you just describe this wall to me. What do you, what do you see?

Student: it's diverse.

Brian: what's diverse about it?

Student: the rocks, they're different types.

Brian: well where are there different types?

Matt: you can get up and point at if you want.

Student: there's these bumpy rocks in this area, and then is area there is these smooth ones [points to area at the left screen edge].

Brian: Uh-huh.

Student: then over here there's actually some colored ones, [off screen, below the camera]

Brian: well, if you were to look down here.

Matt: down here. Did you look at the whole wall?

Brian: down here, in this area, versus that area up there, what do you see?

[inaudible comment by student]

This doesn't look as rocky as that up there, does it?

[inaudible comment by student]

Matt: what do you see?

Student: it starts up there, [inaudible comment by student]

Matt: okay. Okay.

Brian: so, you're sayin' the land surface up there is kinda flat, then it slopes right here, right. Okay? Those are all really good observations.

01:56:24, since last time

Clip: "Sedimentation"

Matt: Okay, so if we know that there was a glacier that came, would that rock be older or younger than the rock that was there before the glacier came?

It's kinda a tricky question.

Is the rock that came with the glacier older or younger than the rock that was already on the ground surface.

[inaudible comment by student]

Younger. So, it should be on top, right? Cuz, we know that the law of superposition is what?

[inaudible comment by student, explains superposition by next comments]

Kay. So which one of these rocks did you see that looks like it coulda been brought by a glacier? Anybody can get up and point.

[students get up to wall]

Student: this sorta has a smooth surface

Matt: okay, so there's those smooth rocks

Student: like that one there.

Matt: um-kay. But we're not just talking about one rock, remember a glacier is a big river of ice, it brings lots of rocks, it doesn't just bring one. It brings big, big rocks.

[inaudible comment by student]

Okay. Then when a river, a river brings rocks, what, have you guys seen the bottom of a river surface, of a stream? What's it look like? Can you describe it in as much detail as you can?

[inaudible comment by student]

Bumpy with? ...Rocks... and then beneath those rocks?

[inaudible comment by student]

Um-huh. So, if you were to compact that into a rock, it would be sedimentary rock, and what would it look like?

[inaudible comment by student, possibly describes sorting]

All right. Good description. So, Now look at the rock over here and see if you think that there's a rock that looks like that.

Think bigger, don't just look at one rock, look at the whole wall.

Student: this rock here [rest inaudible].

Matt: okay,

02:04:06, since last time

Clip: "Bedrock"

Matt: so this rock here, you described a rock that had lots of pebbles, lots of rock, and dirt compacted together, right? Is that what this looks like? This whole rock right here?

Student: yeah, sorta.

Matt: sorta. Okay. That rock is bedrock. That rock came down from the rivers from all the cascades and the Olympics, starting fifteen, twenty million years ago.

Brian: an old rock.

Matt: it's an old rock, it started a long time ago, rocks piling on top of each other, just the way, ...you described, that if you were to compact the stream, they would pile on top of each other. And then a glacier came, and we already know that it rolled and, rocks, but... have you ever seen a bulldozer? What happens when the bulldozer pushes ground/

[inaudible comment by student]

The ground topples over, but what's out in front of the bulldozer?

Brian: A big a pile of dirt.

A big pile of dirt?! Seems like a dumb answer right? A big pile of dirt.

So, when the glacier came, it pushed all this dirt out in front, and that would be fine sand, kinda like the dirt that gets picked up by the bulldozer. So, which one these, where do you think you see that on this wall here? Is there a rock that looks like that? Look all the way down here.

Anybody have a guess?

Brian: I'll tell you how I like to describe what a glacier deposits and as it moves, and that's. Who likes peanut butter? Do you like crunchy or smooth? I like crunchy. Kay, and we all know what crunchy peanut butter looks like right. It's basically smooth peanut butter with a bunch of ground up peanuts, with chunks of peanuts in it. Then when you make your sandwich, you take your knife, or your bulldozer blade, and you smear that chunky peanut butter all over the bread, right? Think of the bread as the landscape, and the blade being the ice. And you're smearing that peanut butter all over the landscape with the ice and so what you get when the glacier leaves, is you get a layer of soil, or a layer of sediment, it's called soil, okay, that looks like kinda chunky peanut butter. It's kinda smooth with a bunch of huge, big rocks randomly placed all over, okay?

So, it's not like that [points to bedrock], where It's just loaded with rocks, but it's more like, he's at this down here, it's more like this down here. You see how this stuff down here... this stuff down here [pointing at the glacial till] kinda looks like it's smooth and it's got big chunks of peanuts in it, all over. But you notice how different it is from this stuff right here [bedrock]? This stuff and this stuff is just chock full of rocks, with little round rocks, right? Okay, so there's a big difference here. This [glacial till] is chunky peanut butter, and that's [bedrock] not. oKay?

End 11:57:00]

Clip: “Identify the Fault”

[At the IslandWood fault. Matt is standing next to the trench wall in blue, Brian Sherrod is to Matt’s right (left on the screen) wearing an orange vest. Seven students are seated on the ground looking at the trench wall. Each student has a journal and a pencil; they have just completed their drawing of the trench wall.]

[Begin 0:00:00].

Matt:

So, now that we know that this is the bedrock [*places hand on the wall on the bedrock*] and this is brought by glaciers [*places hand on the wall on the glacial till*], if it were perfect and we had our law of superposition where would the rocks be?

Let me rephrase that. What is superposition, again?

Student:

Older rock on the bottom, younger rock on the top

Matt:

No, you started the younger rock on the top and the older rock on the bottom. Good. Unless what happens?

Student: [*inaudible*]...

Matt:

Okay, so, the bedrock is older or younger?

Student: older.

Matt: older.

And the glacier is?

Student: younger.

Matt:

So, how come it’s on top? How come the bedrock is on top?

Student: there was an earthquake.

Matt:

Where is the earthquake? Where’s the, where does it divide between the two?

Student: there’s a fault right there.

Brian: So, you say there’s a fault right there, eh?

Matt:

Where’s the fault? Get up and point at it. Get up and point at it.

[*Student goes up to the wall and traces his hand along the fault*].

Excellent.

Brian:

Very good. But what’s the thing that jumps put in your mind when you first look at that? You guys probably saw that as soon as you walked in here. What’s the first thing that you recognize there? Just real quick what’s the first thing that you see where that fault is?

Student: a different color.

Brian:

A different color. It can be, it can be as quick as that. Look! Those things are different colors. You automatically saw that something was different there and that probably drew your mind, drew your eye that.

[End 1:35:00].