

## Transcript for Video Clip 8.4

Teacher/video ID:	Anderson, 8.4_stella_SEC_anderson_c5
Content area:	The Sun's effect on climate
STeLLA strategy:	Make explicit links between science ideas and activities (SCSL strategy F). Link science ideas to other science ideas (SCSL strategy G). Highlight key science ideas and focus question throughout (SCSL strategy H).
Context:	In this lesson about the Sun's effect on climate, students are working with a model of Earth's orbit around the Sun to understand why it's summer in North America when it's winter in South America. At first they don't know about the consistent tilt of Earth's axis toward the North Star, but this idea is introduced during the activity.

### Video Clip 4

Time Code	Speaker	Discussion
0:00:02.5	T	If it's fall right there, Kaley, can you tell me what does the light look like? How is the light dispersed on the ... on the Earth at that position in the orbit?
0:00:11.5	SN	Well, I don't think it should ... I don't think it would be fall there.
0:00:14.4	T	How come?
0:00:15.3	S	Because, well, on the map ... on the orbit around the Sun ...
0:00:19.3	T	Yeah. This.
0:00:20.8	S	In position 2, the United States and the South ... and South America, well, Bra ... Brazil are facing outward, so it would ... it would mostly like be winter.
0:00:32.0	T	Oh. OK. Let's talk about that really quickly.
0:00:34.6	T	So I ... if Kaley, I'm hearing you correctly, you're saying that because on this, these continents are facing this way, it's not getting any sunlight, so it would be cold.
0:00:44.8	T	Can anybody speak to that really quickly?
0:00:50.1	T	Not hearing much from this table, not hearing much from the back of the room. OK. Make sure you listen up carefully. Micah, go ahead. You want to talk to that?
0:00:57.1	SN	'Cause that's just the rotation of the Earth turning one day. So it's just night there.
0:01:02.6	S	Then during the daytime, it would be facing the Sun, so it wouldn't ... it wouldn't change the season just because it's nighttime.
0:01:12.4	T	Would you walk over to Kaley's model, and would you show her what you mean by that on her model?
0:01:17.3	S	OK.
0:01:22.7	S	See, you're saying because it's like ...
0:01:24.1	T	Can we get ... can I pause you really quick ... correct you really quickly? Are we pointing toward the North Star right now?
0:01:30.3	S	Uh, yes.
0:01:31.4	T	No, we're not.
0:01:31.9	SN	Now we are.
0:01:32.3	T	There we go. We're getting there.

0:01:33.4	SN	There we go.
0:01:34.0	T	OK, let's get it pointed toward north.
0:01:34.7	S	They're saying because it's just like ... because it's like this. It's winter.
0:01:39.6	T	But what does "this" mean? So everybody understands.
0:01:42.0	S	Just because the North Americans ... South America aren't facing the Sun, it's winter.
0:01:48.2	T	OK.
0:01:48.7	S	But ... but this is ... is actually ... well, just because they're not facing the Sun in that picture doesn't mean it's winter there. It just means it's night in that picture at that position.
0:02:00.7	T	Oh, OK, so this would be nighttime right now. They're just showing you the orientation. OK.
0:02:05.7	T	And then just ... and I ... we covered this earlier on, but how long does it take the Earth to spin one time on its axis? Carlos?
0:02:15.5	SN	Twenty-four hours.
0:02:16.3	T	Twenty-four hours. So one day. So in half a day, where would North America and South America be, Kaley? Kaley? Micah? Mi ... Micah, let Kaley do it.
0:02:26.9	SN	Well, it's ... but that's ... is that, like, the full rotation or is that ...
0:02:31.6	T	Well. If it's ...
0:02:32.9	S	'Cause if that's yearly ... if that's ... 'cause if one rotation ...
0:02:35.3	T	Well, what part ... Kaley, what part is yearly, and what part is daily? Can you show me what yearly means on your model?
0:02:39.7	S	Yearly is it's going around.
0:02:41.0	T	OK, that's a year. Show me a day.
0:02:43.3	S	A day is going around like that.
0:02:45.6	T	OK. Good. So if it's pointing away right there ... Stop, Kaley. Stop right there. Point it ... point North America away.
0:02:52.9	T	In half a day, show me where North America and South America would be on your model.
0:02:57.6	S	OK.
0:02:58.6	T	It would be there, right? So is that pointing toward the Sun now? Is that pointing toward the Sun now, Kaley?
0:03:03.9	S	Yes. Yeah.
0:03:05.4	T	Is North America ... is the United States and South America pointing toward the Sun? OK.
0:03:10.9	T	Still a little bit confused about it? We're going to come back to it next time we talk. It'll be all right.
0:03:16.4	T	Hey, everyone, I got a group outside, and we're going to have to stop.
0:03:20.3	T	The only people that are going to be responsible for the materials getting to the round table are who? Please don't move all around. Listen.
0:03:27.6	T	Who does it? Raise your hand if you do it.

0:03:30.8	T	I have a getter here; I have a getter there; I have a getter there. Who's the getter over here? Who's the getter right here?
0:03:36.6	T	Make sure you unplug and carefully put the lightbulbs down. Group, where does this go?
0:03:44.8	SS	Science folder.
0:03:45.9	T	Science folder. Please put it away. Thank you, guys. Clean up.