

Transcript for Video Clip 7.1

Teacher/video ID:	Amy Belcastro, 7.1_stella_FW_belcastro_L3_c1
Content area:	Food webs
STeLLA strategy:	Select content representations and models matched to the learning goal and engage students in their use (SCSL strategy D).
Context:	In the previous lesson 5th-grade students learned that carbon dioxide, soil, minerals in the soil, water, and sunlight don't provide food energy for plants. In this lesson, they learned that plants make their own food. Before this video clip, the teacher showed students a diagram illustrating how plants make food (it can be seen on the PowerPoint slide at the beginning of the clip). She also showed them a mixing-bowl model of photosynthesis that illustrates how plant make their own food out of sunlight, water, and carbon dioxide. Students put water and carbon dioxide in the green bowl ("leaf") and used a flashlight (the "Sun") to shine light on the bowl. The teacher then used a hand whisk to mix up the ingredients and produced some sugar cubes to show that the leaf made sugar out of these materials.

Video Clip 1

Time Code	Speaker	Discussion
0:00:01.9	T	So we have a diagram here. You may stand on the floor, thank you.
0:00:07.9	T	So here's a diagram that shows the process that we just made in the back of the room, but here's what I want to do to help you sink it into your mind.
0:00:16.0	T	So this is what photosynthesis means. So each and every one of you [is] a plant. We have a lovely little garden in here.
0:00:22.2	T	So I want you to start—
0:00:23.1	SN	... have leaves?
0:00:24.5	T	Yes, you will have leaves. So start by sinking your toes into the ground. Those are the roots, and you need your roots in order to get what?
0:00:32.0	T	Raise your hand if you can tell me. Please don't shout out. Show what you should be doing right now.
0:00:35.8	T	We need the roots in order to get what, Kendall?
0:00:38.9	SN	Water.
0:00:39.3	T	Water, perfect. So sink your roots into the ground. That is how your plant is going to get water.
0:00:45.9	T	And then what do we need for carbon dioxide? What do we need to grow? Andrew?
0:00:50.6	SN	Leaves.
0:00:51.2	T	So we need some leaves. So put your leaves out.
0:00:54.2	T	What I want you to imagine ... So your feet ... your roots are stuck into the ground to get your water. Your leaves are out. And we have our Sun on.
0:01:01.4	T	Right? I could turn off the Sun and turn it back on. It is daylight. The lights are the sunlight that is shining on you.

0:01:08.1	T	Can someone narrate? Can someone tell me if photosynthesis is taking place right now?
0:01:16.1	T	Can someone tell me what changes are happening inside your plant self ... to summarize how plants get their food?
0:01:25.8	SN	I'm getting bigger.
0:01:28.6	T	Raise one of your leaves up in the air. Who can summarize what is happening? What's happening based on our demonstration ... from the back?
0:01:37.6	T	Brooke, I think that's a— Is that a leaf up in the air?
0:01:39.9	SN	Mm-hm.
0:01:40.6	T	What's happening? What's happening?
0:01:42.0	SN	Changing.
0:01:43.0	T	What's changing? Good.
0:01:44.0	S	The leaves.
0:01:46.1	T	So inside the plant ...
0:01:48.7	SN	[Inaudible]
0:01:50.0	T	I'm taking in carbon dioxide. I'm taking in water from my roots. Chance, does your leaf self ... does your plant self know what's happening?
0:01:59.3	SN	Chemical change?
0:02:00.3	T	So a chemical change is happening. Can you tell me more?
0:02:02.9	S	It's in my leaf.
0:02:04.3	T	So plants ... you still need to be able to listen and learn. Believe or not, plants don't even talk. Chance?
0:02:09.0	SN	Really?
0:02:09.5	T	Tell us.
0:02:10.1	SS	[Inaudible]
0:02:10.9	T	Shh, shh, shh. What is happening inside your plant self?
0:02:14.1	SN	There's two mix— There's two things that are being combined together to make one thing. Or a different thing.
0:02:19.8	T	Good. So what are the two things that you are using inside your plant self?
0:02:25.0	S	Water and carbon dioxide.
0:02:27.7	T	Excellent. And what are you changing those and turning those into?
0:02:31.6	S	Food.
0:02:32.2	T	Into food. Now someone other than Chance. I need a different plant. In addition to carbon dioxide and water, what else do you need?
0:02:45.4	T	What else do you need? Andrew?
0:02:49.4	SN	Sunlight.
0:02:50.2	T	Sunlight. Why do ... why does the plant need sunlight?
0:02:57.5	S	Because ...

0:03:01.7	T	Do you want to call on a friend for support?
0:03:03.2	S	Well, I have a guess.
0:03:04.4	T	Great.
0:03:06.3	S	Does it give the— Would it give the ... what I'm making the energy?
0:03:13.2	T	Exactly.
0:03:14.0	S	OK.
0:03:14.4	T	Exactly. Because remember yesterday? Carbon dioxide does not have energy. Water does not have energy. We need to get the energy from the Sun. All right.
0:03:23.9	SN	Comment.
0:03:24.7	T	Comment. Kyle.
0:03:27.1	S	I think it would suck to be a plant. All you get to do is just sit there and, like—
0:03:32.4	SN	You don't even get to talk!
0:03:34.0	E	[Inaudible]
0:03:36.2	SN	Like, what if you have arthritis?
0:03:38.4	SN	What if you have an arthritis, and they—
0:03:40.7	E	[Inaudible]
0:03:44.1	T	I so appreciate how much empathy you're showing for plants. Everybody sit down. Everybody sit down.
0:03:49.0	T	Kyle, aren't you so thankful that you're an animal instead of a plant?
0:03:51.5	SN	I ... Hey!
0:03:54.4	T	A person's a kind of animal. All right.
0:03:57.3	T	Thank you for having a seat. Blake, thank you for being ready to move on. So that was the big idea from yesterday.
0:04:03.2	T	Now we're going to talk about matter.
0:04:08.1	T	So I have a couple videos for you, and I want you to think about what you're seeing in the video[s] that's going to help you answer today's questions.
0:04:17.3	T	You have it written on your paper in front of you. There are two of them; they're pretty quick. But I want you to think about how it answers today's question, OK?
0:04:26.0	SN	Why can't we—
0:04:26.6	SN	Do we have to write something down?
0:04:28.4	T	You do not. We'll talk about it.
0:04:33.0	T	OK.
0:04:33.0	SN	Ooh, tomatoes.
0:04:33.8	SN	Videos.
0:04:41.8	SN	I can't see it.
0:04:43.4	SN	That's because none of us can see it. [Inaudible]
0:04:48.7	SN	Fast-forward.

0:04:50.2	T	Mm-hm, so you can see the time line down on the bottom. It started on day 6, and now we're on day 9.
0:05:07.7	E	[Inaudible]
0:05:18.9	T	Blake, do you have something that answers the question, or is it a different idea?
0:05:22.2	SN	No, but it's kind of like a ... a question.
0:05:29.5	T	What question are you asking?
0:05:31.8	S	So when we were plants, we only had, like, one hand in the middle and then two leaves.
0:05:40.1	S	But when you notice these plants, it's like, there's, like, leaves that start coming out in the middle, and then they start making more leaves and more leaves and more leaves.
0:05:49.7	S	It'd be like our head making more hairs and more hairs and more hairs.
0:05:53.5	T	So you know what I like about your analogy? Or here's what you're thinking about, Blake. When we do examples in class, when we make models in class ...
0:06:01.2	S	Yes?
0:06:01.8	T	... are they going to be a perfect fit for the science ideas?
0:06:03.5	S	No.
0:06:04.7	T	They're not going to be a perfect fit. So you have to think about what works, and then like that— Well, plants don't just have two leaves, right?
0:06:11.1	T	So that's— I'm glad you're thinking about that. So that was video number one.