

## Transcript for Video Clip 7.2

Teacher/video ID:	Amy Belcastro, 7.2_stella_FW_belcastro_L3_c2
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 plants use water, carbon dioxide, and sunlight to produce energy-supplying food. The focus question for this lesson is <i>How do living things grow bigger?</i>

### Video Clip 2a

Time Code	Speaker	Discussion
0:00:02.1	T	What do we know that plants can do with carbon dioxide and water?
0:00:08.2	T	Now I'm going to wait 'cause I think this is a— 21 hands can be up in the air. What do we know that a plant, such as our little, tiny tree—'cause this is starting off as a tiny, little tree—
0:00:17.1	T	do with carbon dioxide and water? I'm going to draw a name, because this is one that I know every single person in here can answer.
0:00:25.0	T	What can those plants do? Kyla?
0:00:28.6	SN	That's—
0:00:29.0	SN	The plants can ... Can't they, like, it's—
0:00:32.8	SN	No.
0:00:35.6	SN	They can ... they can... With their roots, they can suck it, the H—
0:00:44.9	T	You can just say water.
0:00:45.0	S	the H ... yeah, the water, up.
0:00:46.4	T	Mm-hm. OK, so they can suck in the water. What else?
0:00:50.6	S	I don't know. Oxygen. They also do that— They also kind of suck that up with their leaves and the ... the little holes in the leaves.
0:00:59.7	T	So not oxygen, but what?
0:01:01.3	S	The carbon dioxide.
0:01:02.1	T	Good, carbon dioxide. So they take in both of those substances. Once they are inside the plant, what does the plant do with carbon ... with carbon dioxide and water?
0:01:12.4	T	What is the plant going to do? Serena?
0:01:14.9	SN	It's going to make food or sugar.
0:01:17.5	T	Beautiful! It's going to turn those into food molecules.
0:01:20.1	T	So you are going to the same thing now. So I'll do one example for you—eyes up here—and then I want you to work with your group to do them [the food molecules].
0:01:27.7	T	So the plant can't just turn those two items right into food. What else does it need?
0:01:34.6	SN	A stem.
0:01:35.3	T	What else does it need? Thank you for raising your hand and not shouting out. What else does it need, Emmy?

0:01:39.3	SN	Sunlight.
0:01:39.7	T	It needs sunlight. This is your sunlight, boys and girls. So as a group ... now watch me first. Watch me first. Emmy.
0:01:48.3	T	You are going to take your carbon-dioxide molecule, because the plant needs energy to break these [molecules] up into its little pieces.
0:01:54.7	T	So you're going to take your carbon-dioxide molecule. You have to touch it to the Sun to get that energy and then break it apart.
0:01:59.8	SN	Just one?
0:02:00.8	SN	[Inaudible]
0:02:01.2	T	You can start with one. Now wait ... wait till I do the whole example, and you know what you're going to do.
0:02:07.3	T	You can guess what's coming next. You're going to take your food ... your water molecule [and] touch it to the Sun 'cause it takes energy to break 'em apart.
0:02:14.8	T	So—
0:02:15.4	SN	[Inaudible]
0:02:15.8	T	You may start by breaking them [the molecules] apart. But then what else does it have to do? What— I'm sorry, when I say "go," you can start. But what else is that plant going to do?
0:02:26.6	SN	Eat.
0:02:26.8	T	What else is that plant going to do? We can't just break them apart. Then we have a lot of little atoms. We have to do something else with those atoms.
0:02:36.1	SN	Collect 'em.
0:02:36.4	SN	Split 'em.
0:02:36.6	T	What else is it going to do, Blake?
0:02:38.3	SN	'Cause the plant has to suck 'em all up into a ... the ... the space.
0:02:43.4	T	Well, it already has ... it already has 'em in there because you're the plant, and you're breaking them apart.
0:02:49.1	S	Oh yeah.
0:02:50.0	T	But now I have a bunch of separate—
0:02:51.6	S	You could let 'em go.
0:02:52.9	T	No. I have a bunch of separate atoms here. What else do I have to do with them? The plant needs to make food.
0:03:01.6	SN	You need to put 'em all together.
0:03:02.0	T	So what does ... I have to ... Go ahead, what do I have to do? I have to ... Harry?
0:03:07.8	SN	Put 'em all together.
0:03:08.5	T	Put 'em all together, and so you have to go back to the Sun and get more energy. So I'm going to touch the red to it, a white to it, and a blue to it, put those together. And now—
0:03:17.1	SN	It's ... they're all food.
0:03:18.2	T	I've turned it into food. So I would like you as a group to go ahead and put ... change all of your carbon dioxide and water into food with help of the Sun, but then where

		does this go?
0:03:28.6	T	Just not off in the air. Where does my food go? Inside the ...
0:03:32.3	SN	Tree.
0:03:32.9	T	Inside the tree. Fill up your tree with your food molecules. Go ahead.
0:03:38.9	SS	[Inaudible]
0:03:40.2	T	No, I just did that one. That's food. That's food.
0:03:43.6	T	OK, do you guys know what you're using?
0:03:45.3	SN	[Inaudible]
0:03:46.6	T	What's that?
0:03:47.0	SN	Are we supposed to put 'em back in the food molecules?
0:03:48.2	T	Yeah, you're going to put 'em back in food molecules, and then those food molecules are going to fill up the tree.
0:03:51.8	SN	These don't come apart.
0:03:54.1	T	It's hard, that's why you need that energy, right?
0:03:55.1	S	Ohhh.
0:03:57.6	T	OK.
0:03:59.6	SN	I can't get this—
0:04:00.4	T	Oh, you've got to use those muscles. OK. So you're touching it here, right? You're getting that energy that you needed. Good.
0:04:06.2	T	And then when you put 'em back together, what are you going to make?
0:04:10.0	SN	Food.
0:04:10.8	T	Food. And where's the food going to go?
0:04:13.0	SN	But [inaudible] energy to go against me.
0:04:16.1	SN	It's going to grow out the tree.
0:04:17.9	T	It's going to be inside the tree. It's going to—
0:04:19.5	S	And then it's going to blossom and grow like the apple trees do.
0:04:22.5	T	Thank you. Thank you, thank you for getting that energy from the Sun. Yes?
0:04:25.6	SN	Ms. Belcastro, it's not coming apart.
0:04:29.4	T	Did you ... You know why? You didn't get your energy from the Sun, that's why. There you go.
0:04:33.4	S	Oh.
0:04:33.7	T	See? See, you have to get that energy from the Sun. You know your yellows count as whites, right?
0:04:37.5	SS	Yeah.
0:04:38.0	T	OK, good. All right, keep going. So you've got a ... you've got a lot of carbon dioxide and water to break up. Here, let me help you. OK, got to get that energy; break it apart.
0:04:44.4	SN	Ooh, geez, I forgot to put [inaudible] ...
0:04:46.3	T	All right. Then I'm going to get some water here. Break it up. Thank you, thank you.

		See, that energy helps, right?
0:04:51.0	S	Yeah.
0:04:51.3	T	I know. All right, now I might start building the food, because the bigger my plant is ... OK, I'm going to have one blue, one white, one red, and I'm going to put it all together.
0:05:03.2	T	And then where does this food go once it has it built? Once the tree creates it?
0:05:07.6	SN	Into dirt.
0:05:10.1	T	Into what?
0:05:10.8	S	Dirt. No.
0:05:13.6	T	Where's it going to go?
0:05:14.9	S	In the tree.
0:05:15.9	T	Yeah.
0:05:16.7	S	OK.
0:05:17.1	T	It goes into making the tree bigger and bigger. So as you get more and more food molecules, you're going to grow your tree out. OK?
0:05:23.9	SS	OK.
0:05:24.8	T	Good.

### Video Clip 2b

Time Code	Speaker	Discussion
0:05:29.6	T	How ... how does a squirrel get its food? How does a squirrel get its food? It is not like a plant. It cannot make its own food.
0:05:42.4	T	So what does it do? Emmy?
0:05:45.1	SN	It gathers the ... it gathers its food. Like, if—
0:05:48.2	T	And what might its food be?
0:05:50.3	S	Like nuts from a tree.
0:05:51.4	T	Like nuts from your tree. So this tree has been hard at work growing food, making its own food so it can get bigger. So it has energy.
0:06:00.5	T	Now I would like you ...
0:06:05.1	T	I would like you—
0:06:05.7	SN	We can make our own food.
0:06:06.7	SN	I see a connection.
0:06:07.2	T	To— What do you see, Kevin?
0:06:09.7	S	Tree for the squirrel, squirrel for the mountain lion.
0:06:12.3	T	Whew! You're getting ahead of us. You're getting ahead of us. I would like you to transfer some food. These are nuts on the tree now.
0:06:23.2	T	And I would like you to transfer your food from the tree to the squirrel.
0:06:28.0	E	[Inaudible]
0:06:35.4	SN	He's dead.

0:06:37.0	SN	He still gets food.
0:06:38.2	SN	He's dead.
0:06:40.4	E	[Inaudible]
0:06:46.2	T	I'm going to give you four seconds. I'm going to give you four seconds, and I need voices off. Voices off.
0:06:50.9	SN	[Inaudible]
0:06:52.4	T	That's— And you can leave some at the tree. It doesn't eat all the food.
0:06:55.2	S	Yeah, it does.
0:06:55.5	T	All right. Voices off in five, four, three ... Hands off your learning materials in two and one.
0:07:03.3	SN	Why is the cat dead?
0:07:04.4	T	Hands off your Unifix Cubes.
0:07:07.0	T	Man, some squirrels are greedy. They just save every single molecule in that tree, but that's all right.
0:07:11.1	SN	The only one I could—
0:07:11.7	T	Some trees have a little bit left. Some squirrels took it all.
0:07:16.0	SN	Some cats are dead.
0:07:16.6	T	So can a squirrel— Scotty, I'm going to come back to you. Can a squirrel make its own food?
0:07:23.0	SS	No.
0:07:24.4	SN	Yeah, but [inaudible] ...
0:07:25.0	T	Scotty, you have echoes around the room. Everybody, can a squirrel make its own food?
0:07:28.1	SS	No.
0:07:28.6	T	No.
0:07:28.8	SN	No, absolutely not.
0:07:29.6	T	Where do squirrels get their food from? Everybody?
0:07:33.7	SS	Trees.
0:07:34.3	T	Trees. Or ...?