

PD Leader Master

5th-Grade Guide to Torres Video Clips for Day 8

Analysis Guide F, Part 2-1, Food Webs Lesson 5—Setup for the Activity (Transcript for Video Clip 1)

- a. **Are students prompted to think or write about the focus question or goal statement?** **Yes.** The focus question is *What happens to the matter than makes up wastes and dead organisms?* The teacher introduces the strawberries activity by asking a question directly linked to this focus question: *What do you think will happen to the strawberries if we let them sit for a long time?* (00:26.0). She engages students in a whole-class discussion of this question and then asks them to write about it. In video clip 1b, she poses another question that prompts students to think about ideas related to the focus question: *Will the mass of the strawberries stay the same, go down, or go up?* (01:20.1) Students discuss this question in small groups.
- b. **Are explicit links made between science ideas and the activity?** **Yes and no.** Yes, science ideas about decomposition are discussed in relationship to the strawberries activity (00:34.8; 00:49.2; 00:55.6; 02:30.9). But no science ideas are explicitly introduced and linked to the activity in this clip. The teacher is simply eliciting students' ideas and predictions.
- c. **Does the setup help students understand why they're doing the activity (e.g., What ideas will they learn from it)?** **Yes.** Based on their two predictions (regarding what will happen to the strawberries and whether the mass of the strawberries will change), students know they'll explore ideas related to what happens when dead things are left to rot. Because ideas about decomposition came up in the discussion (see, for example, 00:34.8), students probably know they'll learn something about decomposition. The teacher could have made the purpose even clearer by saying something like this: "Bria mentioned decomposition. Today we're going to learn about what happens during decomposition."

Analysis Guide F, Part 2-2. Food Webs Lesson 5—During the Activity (Transcript for Video Clip 2)

- a. **Do students think about science ideas during the activity?** **Yes.** Students are clearly thinking about science ideas related to matter and decomposition:

00:13.8 It's bacteria.
00:14.8 That they have decomposers and, like, bacteria.
01:14.2 [There] was liquid in it [the jar], and the mold is growing onto the berry.
01:27.3 I thought at first that [the mass would] go down because [the strawberry is] decomposing and it's rotting. But then I thought, where would the matter go if it was going down?
03:09.5 It [the jar of strawberries] has the same matter still.

In addition, students are reasoning as they try to interpret (strategy 4) what is going on with the mass of the rotting strawberries:

01:08.5 [The strawberry jar] probably went up [in mass] because of [decomposition].
01:14.2 [There] was liquid in it [the jar], and the mold is growing onto the berry.

- 01:27.3 I thought at first that [the mass would] go down because [the strawberry is] decomposing and it's rotting. But then I thought, where would the matter go if it was going down?
- 01:49.3 I think ... it's going to go less 'cause the juice is draining out [of the strawberry], and it's getting skinnier 'cause there's not as much health in it.

- b. **Do students know they're expected to connect science ideas with what they're doing in the activity?** **Yes.** The teacher's questions make it clear that students are expected to think scientifically about what is happening to the strawberries:

- 00:47.1 What do you think happened to the mass of the jar?
- 00:54.6 Did the mass of the jar go down, stay the same, or go up?
- 02:28.7 So how do you explain that the mass of the strawberries stayed the same?

To strengthen the connection: The teacher could have made this connection more explicit by telling students to think about all the matter in the strawberry jar and use ideas about that matter in their reasoning.

Analysis Guide F, Part 2-3. Food Webs Lesson 5—Follow-Up to the Activity (Transcript for Video Clip 3)

- a. **Are science ideas explicitly linked to the activity in the follow-up? If so, indicate what the teacher does or what the students do to link ideas and the activity.** **Yes.** The teacher sets up the reading assignment by referring to the strawberries activity and emphasizing that students should find science ideas in the reading that help explain what happened to the strawberries.

- 00:11.3 So before you read, I want you to think about what happened to the strawberries. Why did it happen? I want you to record these in your science journal. Why did the mass of the strawberries stay the same?
- 00:34.7 As you read, I want you to underline one key sentence, one main idea, that answers analysis question 1: *What do you think happened to the strawberries, and why did it happen?*
- 00:54.3 The second question: *Why did the mass of the strawberries stay the same?* You're going to underline the sentence that helps you to find that.

As students are reading, the teacher talks with a small group and asks questions that challenge students to link the reading to the strawberries activity:

- 01:16.2 Why did the strawberries— Why did that happen?
- 01:55.0 Do you have evidence in there [the handout]?

- b. **Are students involved in making links between the science ideas and the activity?** **Yes and no.**

Yes—students make links between the science ideas (in the reading) and the strawberries activity:

- 02:47.6 The reason that mold is alive is because it wouldn't be able to eat the strawberry if it wasn't alive.
- 03:22.7; 03:29.3 Bacteria ... works like mold to soften the fruit. ... So the mold can eat.

No—students pull many science ideas from the reading, but they rarely make explicit links to the strawberry activity:

01:37.8–02:34.7 Students bring up the following science ideas, but they aren’t explicitly linked to the strawberries activity:

- Mold is a decomposer.
- Mold is a fungus. It’s not a plant or an animal.
- Mushrooms are fungus.
- Decomposers are alive.
- Mold is alive.
- Bacteria “rotten” the food, and it’s in everything.

04:34.4 One student attempted to link a science idea to the strawberry activity, but it wasn’t accurate (although he used good logical thinking): “I did actually think it’s not alive, because if you, like, put a strawberry in the container, like we just saw, for a period of time, it has no oxygen and stuff like that.”

To strengthen the connection: In video clips 3c and 3d, the teacher could have explicitly asked students to use ideas from the reading to explain the strawberries activity. For example:

Clip 3c: Much of the small-group discussion focuses on whether mold is alive. The teacher could have linked back to the strawberries activity by asking, “What did you observe about the mold on the strawberries? What does the reading say that might help you explain your observations?”

Clip 3d: The teacher asked, “But is there something that you learned from the reading that surprise you?” (03:06.7). Questions that better link to the strawberry activity (and to the directions for the reading activity) would be “What does the reading tell us about what happened to our strawberries?” and “What does the reading tell us about why the mass of the strawberries stayed the same?”

Lesson Analysis, Strategies F, G, and H, Food Webs Lesson 5—Beginning and End (Transcript for Video Clip 4)

a. Examples of strategy F:

00:30.7–01:23.5 Chris is linking science ideas to the activity he just completed (drawing the food-chain diagram). He uses the idea that energy and matter are passed from one organism to another in a food chain, and that the bush gets energy from the Sun and matter from carbon dioxide and water. When prompted by a teacher question, he adds the idea that the bush uses this matter and the Sun’s energy to make food.

01:41.4–02:27.7 Russell is linking science ideas to the activity he just completed (drawing the food-chain diagram). He uses the following science ideas to describe his drawing: (1) The bush uses sunlight, water, and carbon dioxide to make food in the form of sugar; (2) the bush is a producer that provides food for the rabbit; (3) the rabbit uses the food for energy, wastes, and to grow; and (4) food is passed to the fox, which uses it for energy, wastes, and to grow.

03:13.6–03:17.5 This student connects ideas from the reading activity to the food-chain-diagram activity. He concludes that decomposers should be added to all the organisms in the drawing because they break down everything that dies.

b. **Ways strategy F could be strengthened:** One idea to strengthen strategy F is to engage students in video clip 4c in making the connection between their food-chain drawings and the idea of decomposers as recyclers. How could their diagrams show that decomposers help recycle matter?

c. **Examples of strategy G:**

Both Chris and Russell are connecting science ideas in their descriptions of their food-chain drawings:

00:30.7–01:23.5 Chris connects ideas about energy and matter. He says the bush gets energy from the Sun and matter from carbon dioxide and water. Then the rabbit gets matter and energy from the bush. And the fox gets matter and energy from the rabbit.

01:41.4–02:27.7 Russell connects the idea of the bush making food (from carbon dioxide, water, and sunlight) with the idea that the bush is a producer. He then connects these ideas to the rabbit and the fox as consumers that take the food the bush made and use it for energy, wastes, and to grow.

02:57.5–03:47.9 The teacher spurs a new connection by asking students, “What do you think we should add to our diagram?” And later, “Where do you think you might add that [decomposers]?” In this discussion, she helps students connect their new knowledge about decomposers to their previous knowledge about producers and consumers in food chains.

d. **Ways strategy G could be strengthened:** The teacher could highlight the connections in a number of ways. One possibility is to ask students to create a concept map or thinking map showing the relationships among these ideas: matter, energy, food chains, producers, consumers, and decomposers. Another possibility is to explicitly summarize for the class the ideas that Chris and Russell connected in their presentations (e.g., “I heard Chris connecting the idea of plants making food with ideas about what happens to matter and energy in food chains”). The teacher could then ask students to check their diagrams to see if they made similar or additional connections.

e. **Example of strategy H:**

04:12.3–05:05.1 In this conclusion to the lesson, the teacher is highlighting this big idea: Decomposers are recyclers that provide matter that can be used again and again in food webs.

f. **Ways strategy H could be strengthened:** This conclusion could have been strengthened if the teacher had asked students to summarize the big idea of the lesson. This would have provided additional highlighting. The teacher also could have returned to the lesson focus question and challenged students to use the big idea about decomposers to answer the focus question, *What happens to the matter that makes up wastes and dead organisms?*