

PD Leader Master Analysis Guide C: Selecting Activities Matched to the Learning Goal (Answer Key)

List the main learning goal: Plants use sunlight, water, and air from their environment to make their own food. Animals can't do this.

Part 1: Identify and analyze the science ideas in the activity. Using the table below, first list in the left column each science idea (main and supporting) that is addressed in the activity. Then indicate in the right column how closely each science idea matches the main learning goal.

All Science Ideas in the Activity	The science idea is (<i>closely, partially, weakly, not</i>) matched to the main learning goal.
How Do Plants Get Food?	
<i>In this activity, students work in small groups to examine pictures of plants and read information to find out what plants use as food. Then the teacher reads from a book about plants to summarize what plants need and how they get food.</i>	
Video Clip 6.3 (Before the Activity)	
1. "To make food, plants need light, water, and air" (segment 00:42).	Close match
2. "[Leaves] catch the sunlight" (segment 00:42).	Weak or partial match
3. "Roots soak up the rain" (segment 00:42).	Weak or partial match
4. Air goes through openings in the leaves (segment 00:42).	Weak or partial match
Video Clip 6.4 (During the Activity)	
5. Plants need water (video segment 00:47).	Partial match
6. "Rain needs to go onto the seed for it [to] grow" (segment 01:01).	Weak match or not a match
7. "The plant was growing big from the seeds" (segment 01:37).	Not a match
8. Plants need water to grow (segment 01:50).	Weak or partial match
9. Plants can get water from the sink, from the rain, or from a hose (segment 02:32–03:16).	Not a match
Video Clip 6.5 (After the Activity)	
10. Plants get water through their roots (segment 00:16–00:18).	Not a match?

11. Roots suck up water (segment 00:23–00:30)	Not a match?
12. Roots get water from the rain, a watering can, or the sink (segment 00:34–00:51).	Not a match
13. “Water will come down [as rain], soak into the soil, and then the roots will absorb the water and soak it up” (segment 01:34–01:42).	Weak or partial match
14. Plants get air “from their leaves” (segment 02:01–02:19).	Weak or partial match
15. Plants get sunlight “from outside” (segment 02:35–02:46).	Weak or partial match
Video Clip 6.6 (After the Activity)	
16. “The plant needs light so that the air and water can join to make food” (segment 00:02).	Close match
17. “[Air and water come] together ... in the leaves. ... When the light hits the green leaves, the air and water can join. Now the plant will have the food it needs” (segment 00:19–00:30).	Close match
18. “If [a green plant] does not get water, the plant can’t make food, [and] the plant will die” (segment 01:00)	Close match
19. “If [a green plant] does not get light, the plant can’t make food, [and] the plant will die” (segment 01:39)	Close match
20. “Plants ... need food” (segment 02:12)	Partial match
21. “[From] the Sun, the plant makes food ... so they can eat and ... grow tall” (segment 02:40).	Close or partial match
22. Plants also need air to make food (segment 02:56–03:02)	Partial match
23. Plants need water to make food (segment 03:02–03:13)	Partial match

Part 2: If there are weak or partial matches, suggest ways the activity could be modified to more closely match the main learning goal.

The small-group questions that focused on how plants get the water, sunlight, and air they need weren’t closely matched the main learning goal (see Video Clips 6.4 and 6.5). The question that focused on how plants get their food was much more closely matched to the learning goal (Video Clip 6.3), and the ideas from the book the teacher read matched the learning goal very closely (Video Clip 6.6).

To improve this lesson, it would be best to have all students focus on the questions from the green folder: *Do plants need food? How do they get their food?* The ideas about how plants get water, air, and sunlight distract from the main learning goal. In a different lesson, students could focus on the main learning goal, “Plants use their roots and leaves to take in the matter they need to make their own food.”