

Lesson #2: We All Have Needs!

Using LAWNS to Explain Plant Needs

Big Idea



Just like humans and animals, plants have needs that must be met for them to stay healthy and grow. In this lesson, we'll explore 5 important plant needs using the acronym **LAWNS**, which stands for (L)ight, (A)ir temperature and movement, (W)ater, (N)utrients, and (S)pace to grow, such as in the soil.



Suggested Steps:

1. We recommend starting with the first activity to chart plant and human needs.
2. Afterwards, watch the video and review your diagram to see if anything new was discovered.
3. Finally, if time allows, try out Activity 2.
4. Close the lesson with a journal reflection prompt or My Climate Story handout.

Guiding Questions:

- What do plants need to grow?
- What needs do we have in common with plants?
- How can we help a plant to meet its needs?

Learning Objectives

I know (knowledge), I can (skills), I understand (conceptual understanding)



I KNOW

- ↳ Most plants have the same basic five needs (represented by **LAWNS**).
- ↳ Plant needs vary depending on the plant.



I CAN

- ↳ Compare and contrast the needs of plants to the needs of other living things, like humans.
- ↳ Identify when needs of plants are not being met and how I can help them.



I UNDERSTAND

- ↳ How the needs of plants can differ based on habitat or ecosystem.
- ↳ My role in supporting plant needs when they are not met by nature.

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Activity 1: Plant Needs & Human Needs

Time: 20 mins

Process: 10 steps



Materials Needed:

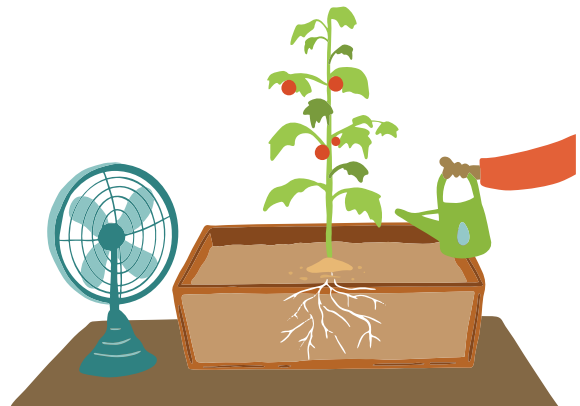
- Flip Chart paper or whiteboard and markers

- “Plant & Human Needs Venn Diagram” student hand-out.

Process

1. Draw out your graphic organizer, either a two column chart and a Venn Diagram, or just a Venn Diagram.
2. Note: It might be easier to start with two columns -plant and human needs- and turn this into a Venn Diagram after.
3. Ask the class to think about what they need to survive. Jot down their answers. You may want the students to discuss in partners and report back, or do this all together.
4. You may want some questions to help the conversation.
 - a. What is the difference between a need and a want?
 - b. Do I need video games to survive? Dessert? Can we put that suggestion into a larger category or group of things to discover the larger need?
 - c. For me to stay alive and healthy, what do I need?
5. After you have your human needs column completed, move on to plants.
6. Now ask the same question about plants. To help prompt your students, have them think about what makes plants healthy, and what makes them look sick. What might that plant need to feel better?
7. Populate the plant needs column or circle as appropriate. Determine together what are shared needs that can go in the middle.
8. After you've run out of suggestions, review the Venn Diagram again. You may want students to follow along and copy the words together, or do this activity in pairs.

9. As a closing activity, write down the acronym **LAWNS** on the board. Tell your students that each letter is the start of a word of something a plant needs. Can they guess what each word might be?
10. Leave space to write down their different ideas of the words, and revisit after watching the video on **LAWNS**.



Accommodations or Extensions

- ↳ With older students, consider connecting to Maslow's hierarchy of needs. Ask the class to brainstorm more complex and simpler needs humans have. Then, reveal the hierarchy to help discuss the different needs of humans vs. plants, but the important role plants play in helping us meet our basic needs for survival.

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Activity 2: Plant Doctor (Using LAWNS)

Time: 30 mins

Process: 12 steps



Materials Needed:

- At least 5-7 plants to study (either indoors or outdoors)
- “Plant Health Chart” student checklist handout (1 per student)
- Pencil and eraser
- Doctor’s costumes or white painting smocks (Optional)

Process

1. The location of your plants will determine whether to do this activity inside or outside.
2. Explain to your students that today they will be looking at plants to see how healthy they are. They will be playing the role of plant doctors.
3. Brainstorm together how doctors act with their patients. What is their role in society? How can we be caring plant doctors?
4. Remind students to be gentle when touching or moving the plants: you don’t want to startle your patient or bend them or break off any of their appendages.
5. Choose your first plant patient to inspect together and ask students some prompts along the way using the checklist to help the diagnosis.
6. Light: Check the leaves for healthy and consistent colour. Are any leaves shrivelled up, dry, or cracking? Are they spotty?
7. Air: Check the temperature of the air around the plant. Is it too close or far away from heat? Do you think it might be getting too much or too little? Moisten your thumb and stick it in the air next to the plant. Any wind or air circulation? Too much?
8. Water: Is the soil in the pot moist? Or too dry?
9. Nutrients: while hard to tell, check the leaves again and the stem. Does it seem healthy? Are there any pests, interesting spots, bugs, etc.? Is there anything around it -like fertilizer- that we could look at to see what nutrient supports it is getting?
10. Space: How confined does the plant look? How would you compare the plant to its pot size? Are there other plants close to it?
11. After you’ve done your first inspection of one plant as a class, divide the students up in small groups to assess another plant.
12. Report back once all of the groups have had a chance to do a similar inspection.



Accommodations or Extensions

- ↳ As you go through different plants diagnosing their condition, you may find mostly healthy plants. Your students can take this activity a step further by switching to the role of plant scientist. Assign students in groups to have an experiment plant by changing one condition - for example, giving the plant less light) for a few days. You may want to have a control plant that you compare with the rest of them to see how they are affected.

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My Climate Story Reflection



As part of planting seeds for climate stories, your students are developing their own story to help them understand their role in a world facing climate change. You can use this assignment in place of -or to support- a journal reflection.

The companion worksheet for developing My Climate Story for this lesson asks your students about the needs they require to thrive in their habitat. We have more complicated needs than plants, including time with other people, love, joy from leisure activities, and a sense of community. Reflecting on these different needs is important when we find ourselves exploring difficult topics. We can always remember we have each other and different supports that keep us happy.

For further guidelines on helping your students develop their own Climate Story, check out the explanation in the Teacher's Guide (page #).

Reflection/Journal Prompts

- Write a prescription for a plant, real or imaginary. What would its particular needs be?
- What need do you think is most important for a plant?
- What advice would you give someone growing a plant for the first time?



Assessment/Evaluation

Formative evaluation can be done through noting student suggestions and participation in both activities. Both worksheets can assist with summative evaluation, as well as the journal or reflection questions.

Extension Activities:

- ↳ Explore your local ecosystem with your students and examine how the needs of local plants are provided with support by humans, or naturally. How do humans intervene to provide plants with the things they need?
- ↳ Invite a guest speaker who can explore this with your students, such as a member of the local park or environment department, a Master Gardener, or a local conservation group.
- ↳ Become a Plant Needs scientist! Have students isolate a plant need (Light, Air, Water, Nutrients or Space). Have students design an experiment to observe the effects of withholding these needs from a plant, or giving varying levels of this need to a plant. For example, to test light, students might place one plant in a dark cupboard, one in a corner of the classroom and one at the window or under a grow light. Observe the effects!