

Lesson #5: Movie Moment

Plant Needs & Climate Change (Length: 6m23s)

Watch the video at: https://youtu.be/OFPBfh_BfkA



This video explores how plants will be particularly impacted by climate change. Returning to the plant needs acronym **LAWNS** as reference (light, air, water, nutrients, and space), students will explore how a changing climate will affect plant species in both good and bad ways. The video concludes with suggested ways we can all actively support plants, and prevent climate change impacts on our world.

Science Review

This video has a few science extensions that are worth noting and exploring further with some classrooms:

Climate change will shift the balance of many plants to get their needs met in their usual habitats. Further explaining plant needs can help make the connection to climate change impacts a bit more tangible, because there are no humans without plants. When a plant isn't getting their needs, we usually can tell instantly, and in many communities plants are one of the few living things we are guaranteed to see every day (besides other humans!) We can see how living things outside are dealing with weather, and plants are the most common way to assess this.

Plant needs are more complicated when you consider how climate change is impacting them. In the case of air, we often see stronger winds from extreme weather, but forget the cooler or warmer air flows that accompany these winds. Droughts and floods are logical impacts on the amount of water surrounding a plant. Nutrient changes can be a bit more complicated to see. They link back to the health of soil (explored further in Lesson 6: Soil Super Stewards), and a warming soil might kill off more vital organisms that help break down the nutrients for the plants to absorb. These shifts, in addition to the challenges of misalignment with other animals that rely on plants and vice versa, produces ecological mismatches where other biological processes are more advanced than others as breeding and growing seasons shift.

While plants can adapt to one-off events impacting their needs from time to time, the frequency of stressors on plants will force some species to wither away, and others to simply move. Some of these movements will be natural, and done very rapidly, but some changes to climate are happening so fast that it will be hard for plant species to move fast enough.

Finally, as experts in adapting and moving plants to different places, humans have already been moving plants to better fit industries. Changing crop options for farmers, and assisted migration -literally reforesting different tree species into higher or colder elevations- are all adaptations that are already happening around us.

Teacher Background

Expand Your Worldview

Indigenous Connections:

Gardeners can thank generations of Indigenous people across North America who discovered the perfect gardening combination found in the "Three Sisters". Corn, beans and squash are grown together for a perfect harmony of plant needs coming together. The tall corn stalks provide a space for the bean plants to grow up, and the beans in turn provide more stability for the corn stalk in windy conditions. As a legume, beans fix nitrogen in the soil, providing fertilizer for the other plants. The ground coverage from the squash leaves keeps out weeds and prevents the soil from drying out.

This kind of complementary planting and harmony between different needs is not uncommon. Provide some more examples such as X Y Z

For more information on stories, resources, and other learnings, refer to our glossary of resources in the Teacher Guide.

Stop & Check!

Pause the video at this timestamp to check for your students' understanding.

- Can you think of a few different ways that climate change might affect the way a plant grows? [01:40]
- How can we help care for the environments that plants grow in? [05:34]
- How do you think the plants around you might be affected by climate change? [06:05]



Sight Words to look out for:

- Needs Oxvgen
- Light
- Air
- Water
- Carbon Dioxide • Habitat
- Climate Change Drought Flood
 - Nutrients
 - Space



Sila and the Land

Join Sila as she goes across Canada exploring the importance of the land in this book written by three Indigenous women.

