



# BIG GREEN LESSONS

Plant Needs: Kindergarten – 2<sup>nd</sup> Grade

## Lesson Outcomes

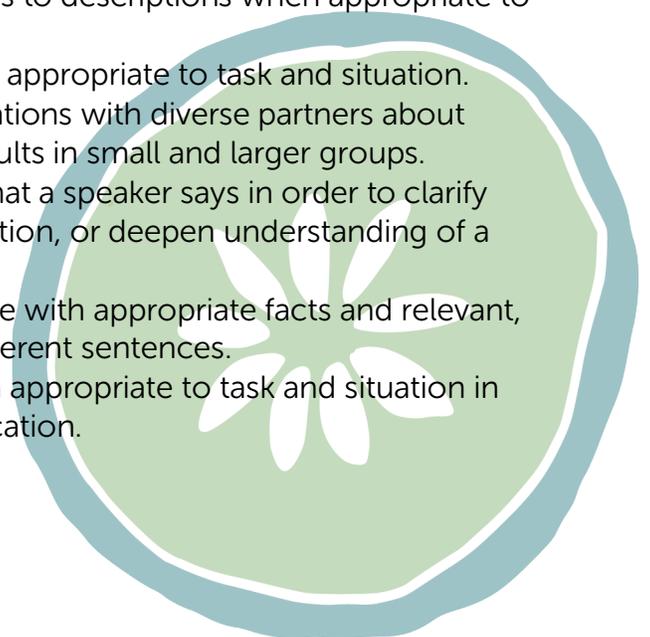
In this lesson, students will identify that plants need specific things to grow into a healthy plant.

- Plants need L.A.W.N.S.: light, air, water, nutrients, and space to grow.
- Sun and water serve a vital role in the growth process.

## Standards Alignment

Common Core

- SL.K.1. Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
- SL.K.3. Ask and answer questions in order to seek help, get information or clarify something that is not understood.
- SL.K.4. Describe familiar people, places, things and events and, with prompting and support, provide additional detail.
- SL.K.5. Add drawings or other visual displays to descriptions as desired to provide additional detail.
- SL.K.6. Speak audibly and express thoughts, feelings and ideas clearly.
- SL.1.1. Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
- SL.1.3. Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
- SL.1.4. Describe people, places, things and events with relevant details, expressing ideas and feelings clearly.
- SL.1.5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
- SL.1.6. Produce complete sentences when appropriate to task and situation.
- SL.2.1. Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- SL.2.3. Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.
- SL.2.4. Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.
- SL.2.6. Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.



## Next Generation Science Standards

- K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.
- 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- 2-LS2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.

## Materials and Preparation

- Plant Needs worksheet – one per student
- Plant Needs Hunt worksheet – at least one per student
- Clipboard or hard surface for sketching and coloring
- Pencil and coloring materials
- Familiarize yourself with your Learning Garden

Reminder: Big Green's Garden Educators are always available for additional support via email or by phone call.

## Teacher Background

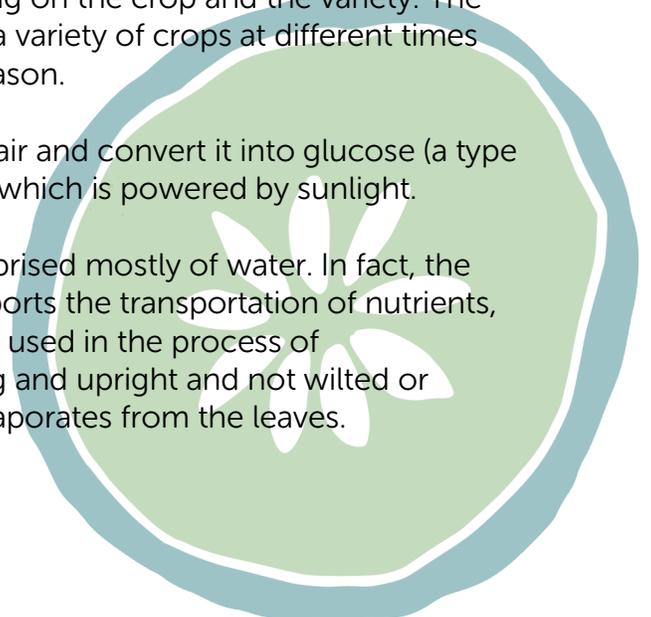
Plants meet their needs in different ways in different environments because the availability of resources varies from one ecosystem to another. Plants, like all living things, have basic needs that must be met for them to survive. These needs include light, air, water, a source of nutrition, space to live and grow and optimal temperature.

There is an easy acronym to help remember basic plant needs (the things that plants need to survive and thrive): L.A.W.N.S.

LIGHT: Leaves capture energy from the sun, then convert and store that energy as a type of sugar called glucose. Plants use glucose to grow strong and eventually flower and reproduce. Sunlight also provides heat which is needed for plants to survive. Each plant has an optimal temperature range depending on the crop and the variety. The sunlight and changing seasons allow us to grow a variety of crops at different times during the year based on the optimal growing season.

AIR: Plants take in carbon dioxide (CO<sub>2</sub>) from the air and convert it into glucose (a type of sugar) through the process of photosynthesis, which is powered by sunlight.

WATER: All living things including plants are comprised mostly of water. In fact, the human body is made up of 2/3 water. Water supports the transportation of nutrients, from the soil up into the structures of the plant, is used in the process of photosynthesis, helps keep plants standing strong and upright and not wilted or droopy, and water helps keep plants cool as it evaporates from the leaves.



NUTRIENTS: Plants must take up essential nutrients from the soil to support their growth. These nutrients include nitrogen, phosphorus, potassium (commonly listed as N-P-K), calcium, and magnesium. Plants also need hydrogen, oxygen, and carbon in large quantities, they're able to absorb those nutrients from the air and water.

SPACE: Roots and foliage take up space. Each plant has their own specific space requirement needs. Plants that are spaced too close together will be stressed as they compete for their basic needs, resulting in weaker plants, higher susceptibility to diseases and insects, and ultimately poor food production.

## Introduction

Spend time discussing the following introductory question:

- What do plants need to grow?

Make a list of student responses on the board and group or categorize responses together, discuss and strike any responses that are not a plant need.

## Classroom Activity

During the classroom portion of today's lesson, students will be learning about the needs of plants using the acronym L.A.W.N.S.

1. Use complete sentences and give clear directions about how the teacher will engage with the students.
2. On the whiteboard or a large piece of paper, write the letters L.A.W.N.S. vertically and fill-in the acronym together as a class. As you move through each letter and plant need, describe the plant need with students.

LIGHT: just like we need to stay warm, plants need a warm temperature! Light keeps plants warm and helps to make food for the plants (through photosynthesis).

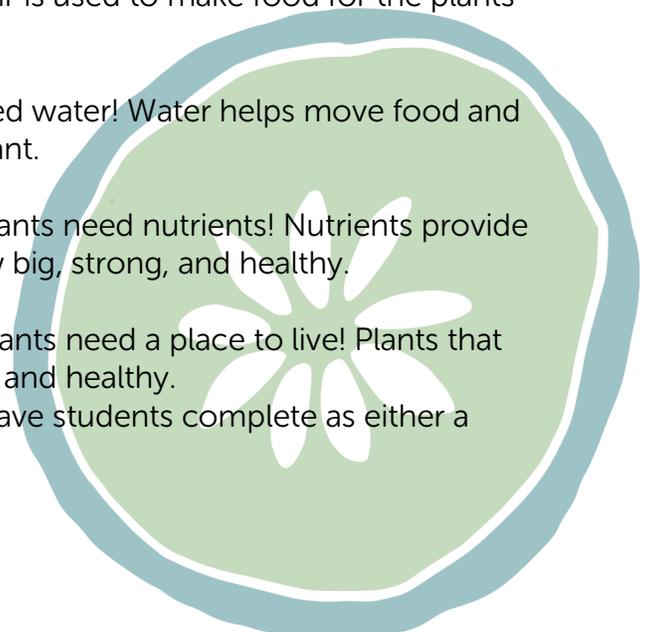
AIR: just like we need air, plants need air! Air is used to make food for the plants (through photosynthesis).

WATER: just like we need water, plants need water! Water helps move food and nutrients to all the different parts of the plant.

NUTRIENTS: just like we need nutrients, plants need nutrients! Nutrients provide plants with the strength they need to grow big, strong, and healthy.

SPACE: just like we need a place to live, plants need a place to live! Plants that have plenty of space will grow big, strong, and healthy.

3. Pass out the Plant Needs worksheet and have students complete as either a class, in small groups or individually.



4. Review the correct answers to the Plant Needs worksheet with students:  
Leaves collect: light and air  
Roots collect: water and nutrients

*Break here if this lesson will be taught in two sections.*

## Garden Activity

Welcome your students to the Learning Garden and line students up along one side of the Learning Garden. Stand on the opposite side of the Learning Garden so you can address the entire group.

Ask students if they know what they will be doing in the Learning Garden for the day's lesson. Let them know they will be looking for evidence of plant needs being met!

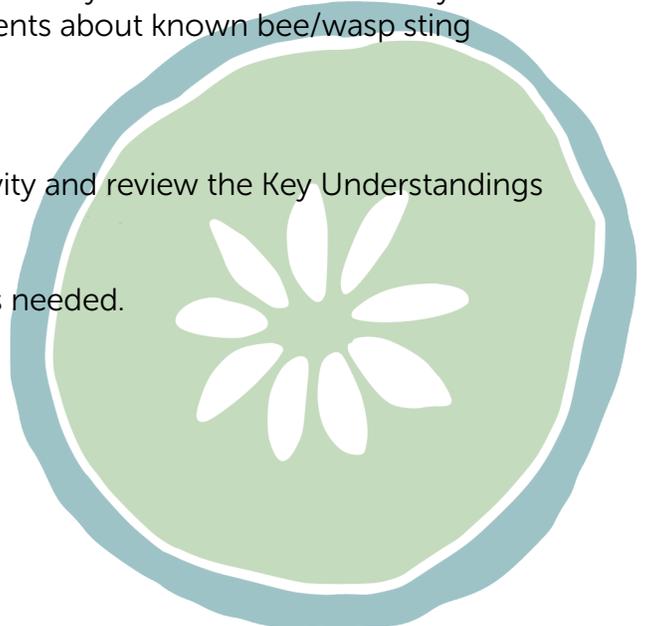
1. Pass out the Plant Needs Hunt, remind your students of the acronym they learned about during the classroom lesson L.A.W.N.S., and review the plant needs associated with each letter.
2. Read the worksheet directions aloud and review the instructions. Practice filling in the worksheet if needed.
3. Have students complete the worksheet either as a class, in small groups, or individually. You may choose to have students complete the worksheet for more than one plant. Print worksheets accordingly.
4. Bring students back together and let students know that now they can identify a healthy plant versus an unhealthy plant. Next, students will hear various scenarios and together they will find or think of things in the Learning Garden that will help the plant in the scenario.
5. Read each of the scenarios aloud and look for or discuss each of the scenarios as a classroom.

NOTE: As the teacher, be aware of poisonous plants and other hazards in and around your Learning Garden and review those concerns with your students. Review any additional rules of the Learning Garden. Ask students about known bee/wasp sting allergies before going into the Learning Garden.

## Conclusion

Have students share out key parts of today's activity and review the Key Understandings for this lesson.

Students should clean up the Learning Garden as needed.



Names:

Date:

## PLANT NEEDS

### WORD BANK:

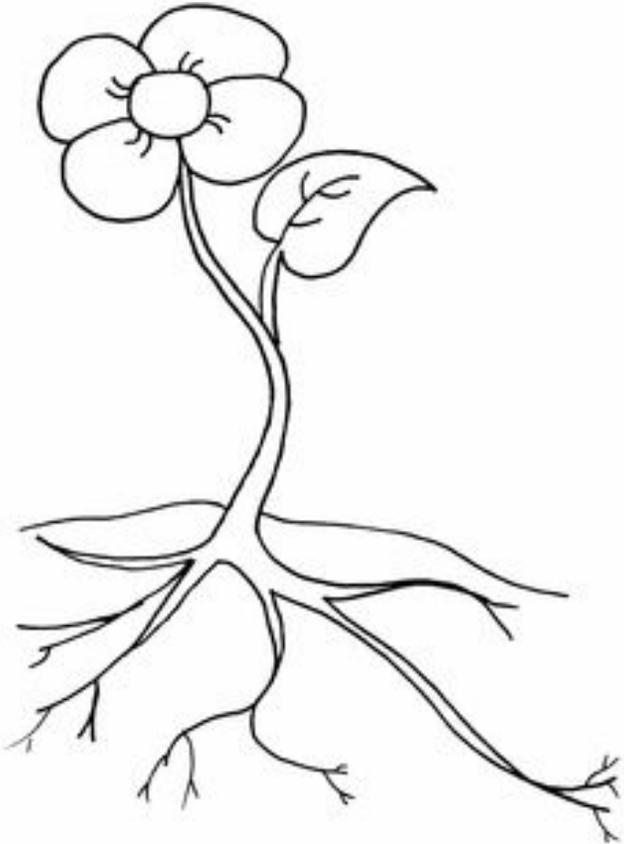
LIGHT

AIR

WATER

NUTRIENTS

SPACE



Leaves collect:

- 1.
- 2.

Color the leaf of the plant green.

Roots collect:

- 1.
- 2.

Color the roots of the plant yellow.

Plants need space  
and a place to grow.

Color the soil brown.

When you finish, color  
in the rest of the plant!

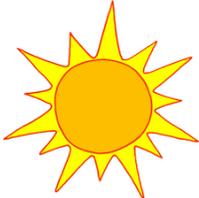
Names:

Date:

## PLANT NEEDS HUNT

Walk around your Learning Garden and look at ONE plant, write the plant name below. Decide if the plant has its plant needs met. Mark either the NEEDS or HAS ENOUGH column with a + symbol.

PLANT NAME: \_\_\_\_\_

PLANT NEEDS:	NEEDS:	HAS ENOUGH:
 LIGHT		
 AIR		
 WATER		
 NUTRIENTS		
 SPACE		

# PLANT NEEDS SCENARIOS

Your plant has yellow leaves, which means your plant needs more nutrients.

What nutrients could you give your plant?

Answers may include: compost, leaves, fertilizer

Your plant is wilting (it looks droopy). It hasn't rained in days and you forgot to water.

What can you use to give your plants water?

Answers may include: watering cans, little rainclouds activity, hoses, hose bib on your building

Your plant loves the sun but is planted in a shady corner of the garden.

Where can you move your plant to give it more sunlight?

Answers may include: sunny locations in your Learning Garden

Your plant is growing inside your classroom in a small pot.

What can you do to give your plant more space?

Answers may include: Plant it in your Learning Garden, or in a garden at home, or in a larger pot

Your plant loves clean air, but it is planted near a busy road.

Where can you move your plant to give it access to clean air?

Answers may include: any location in your Learning Garden, or in a garden at home