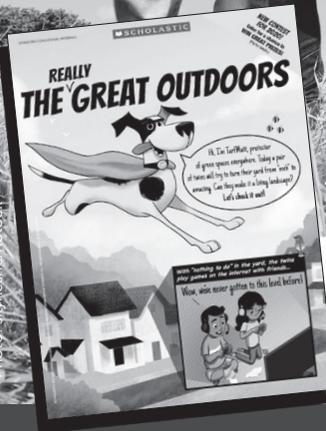


# REALLY THE GREAT OUTDOORS

INCLUDES  
NATURE  
SPACE DESIGN  
ACTIVITY

SCIENCE AND LANGUAGE ARTS ACTIVITIES



**INCLUDES GRAPHIC STORY**

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# STRENGTHENING OUR ECOSYSTEMS

Plants and green spaces make life livable on Earth. Explore the connection between climate and ecosystems with your class.



## Objective

Students will ask questions to explore the impact of climate factors on ecosystems as well as conduct research or use observation to create a profile of a local plant.

## Standards, Grs. 6–8 NGSS

MS-LS2-3 Develop a model to describe the cycling of matter and energy in an ecosystem

MS-LS2-4 Construct an argument supported by evidence that changes to an ecosystem affect populations

## CCSS ELA

RST.6-8.4 Determine the meaning of unknown words in a scientific context

## Time

45 minutes, plus time for completing presentations

## Materials

- 🐾 Printed descriptions of LOWERN climate factors. For more information on these factors, visit [bit.ly/2S7CDEo](http://bit.ly/2S7CDEo).
- 🐾 Chart paper and markers
- 🐾 Internet access for research



## Bonus Lesson!

Protecting Pollinators

[scholastic.com/turfmutt](http://scholastic.com/turfmutt)

## Prep

Before class, write out each of the LOWERN descriptions below and place in six stations around the classroom. Include blank chart paper at each station.

**L**atitude helps determine temperature and amount of sunlight.

**O**cean currents moderate temperature and shape weather systems.

**W**ind and air masses affect weather and which plants can grow where.

**E**levation affects humidity and temperature.

**R**elief (shape of the land) affects what kinds of plants grow in certain areas.

**N**earness to water affects temperature and many other factors.

## Discussion

**1** Review the definition of **ecosystem** (an interconnected system of living things interacting with each other and with their environment, including nonliving factors). Ask students what they know about the positive effects of plants in an ecosystem. Discuss the following:

- ➔ Plants release oxygen through photosynthesis, helping us breathe.
- ➔ Plants, especially forests, absorb large amounts of carbon dioxide through photosynthesis, helping to regulate the amount of CO<sub>2</sub> in the atmosphere.
- ➔ Trees help reduce the “heat island” effect. Without trees, cities can become measurably warmer during summer months, creating unhealthy conditions for many city dwellers.
- ➔ Green spaces provide shelter and

food for wildlife, supporting a healthy ecosystem.

**2** Explain to the class that plants also provide numerous benefits for water systems, such as:

- ➔ Plants hold soil in place, reducing erosion along riverbanks.
- ➔ Plants filter water as it runs into waterways and reduce airborne dust and particulate matter (pollution).

**3** Tell students that climate has a major impact on plants in ecosystems. These climate factors are summarized in the acronym LOWERN.

## Activity

**4** Have students visit the LOWERN stations you set up. Instruct them to add questions, reactions, ideas, and prior knowledge to the chart paper at each station.

**5** Help students make a real-world connection to the plants in their community and the local effects of LOWERN. Instruct them to conduct online research or visit a local garden or nature center to create an informational profile of one local plant. The plant profiles should include the common name, scientific (Latin) name, characteristics, and images. They should also identify: a) whether the plant species is native, adapted, or invasive; b) the role the plant plays in the ecosystem; and c) how local LOWERN factors impact their plant. Students should present their plant profiles to the class.

## Extension

Have students educate peers about the role local plants play in the ecosystem.

# THE HEALTH BENEFITS OF NATURE

Guide your students to document the mental and physical health benefits that come from being outside.

## Objective

Students will engage with domain-specific words and phrases in their scientific context and produce clear and coherent writing about their experiences in nature.

## Standards, Grs. 6–8 CCSS ELA

WHST.6-8.4 Produce clear and coherent writing appropriate to task, purpose, and audience

## SEL

Apply strategies to manage stress. Practice mindfulness and self-awareness.

## Materials

- 🐾 Index cards
- 🐾 *The (Really) Great Outdoors* graphic story
- 🐾 Nature space planner
- 🐾 Rubric at [scholastic.com/turfmutt](http://scholastic.com/turfmutt)

## Prep

Write the following health effects on index cards—Can reduce: blood pressure, stress, anxiety, depression, obesity, respiratory issues, symptoms of ADHD; Can improve: mood, access to clean air, cognition (ability to think and learn). You should have as many index cards as you have students (duplicate as needed).

## Introduction

**1** Tell students that scientists are beginning to document the many benefits of spending time in nature. In fact, they have coined the term “nature-deficit disorder” to describe people with a lack of nature in their lives. Doctors are even writing prescriptions that instruct patients to spend time outside.

## Activity

**2** Hand out the index cards and break students into small groups. Ask them to work together to brainstorm connections between the health effects on the cards and being in nature. As they discuss, write nature activities on the board. Examples: take a walk, breathe fresh air, sit on a park bench, hike, etc.

**3** Discuss student speculations and take time to match health effects with the activities listed on the board as well as any additional activities. Examples: take a walk (*manage obesity*); get some fresh air (*help some respiratory*



*issues*); meet a friend in the park (*reduce anxiety, depression*); sit on a park bench (*reduce stress, anxiety, depression, blood pressure*); lie in the grass under a tree or sit on a green roof (*reduce stress, anxiety, depression, blood pressure*); pick up litter (*reduce stress, anxiety, blood pressure*).

**4** Instruct students to write down the matches between related health effects and nature activities. Emphasize the idea that nature exists in many places, like your schoolyard, community park, or backyard. You don’t have to go to a national park to find it.

**5** Tell students that now they’ll go out in nature and record their own experiences. Have them keep a journal documenting at least one nature experience, such as walking in the woods, relaxing in a backyard or green space, climbing a tree, mindfully breathing outdoors, or visiting a garden center or greenhouse. Instruct them to record details of their mental and their physical state of being, as well as any changes after spending time outdoors.

## ELA/Art Connection

Have students read *The (Really) Great Outdoors* graphic story and complete the nature space design planner (next page).

🐾 Then provide time for students to **write** about and/or **draw with accompanying text** a nature space their community could use. For a rubric, visit [scholastic.com/turfmutt/rubric](http://scholastic.com/turfmutt/rubric).

# **THE (REALLY) GREAT OUTDOORS**

**Instructions** Answer the questions below, writing your responses on separate paper. Use your answers to help create a successful nature space design !

## **PLANTS AND THE ECOSYSTEM**

1. What are some of the positive effects of plants in an ecosystem?
2. What are the effects that plants have on water systems in an ecosystem?
3. How does climate affect what grows in an area?
4. What are some of the health benefits of spending time in nature?
5. Besides spending time in backyards and visiting national parks, what are other ways to experience nature and the outdoors no matter where a person lives?



## **YOUR NATURE SPACE**

Now think about designing a nature space where you live. Answer the questions below to start.

1. If you designed a nature space, what would it be like? Where would it be?
2. What plants would make your nature space effective for people and/or the ecosystem? Why?
3. What is the climate of your geographic area, and how will it affect your nature space?
4. What are your goals for your nature space? What activities could people enjoy there?
5. What will be creative or unusual about your space?
6. How would you like a visitor (and yourself!) to feel there? What personal connection do you have to the space, or why is it important to you?

