



Coast redwoods are the tallest trees in the world and live naturally only in a few places in California and Oregon. *What's the Tallest Thing You've Ever Seen?* introduces students in ninth through twelfth grades to coast redwoods and offers ideas for exploring and taking action to protect these amazing trees. This teacher's guide suggests ways to use the booklet in your classroom.



## Pre-Study

Determine what students already know about coast redwoods by asking:

- Have you ever seen a real coast redwood or a picture of one? What were your impressions of it?
- What do you know about coast redwoods?
- How might coast redwoods be able to grow so tall?

Apple Tree 

10-Story Building 

Giant Sequoia 

Coast Redwood 

## Instruction

After reading the booklet, help students find answers to their questions about coast redwoods. Go to [SaveTheRedwoods.org](http://SaveTheRedwoods.org), or visit the school or local library.

Introduce the vocabulary words appearing in bold in the booklet (listed below) by writing each term on the board, and asking students to generate a list of other words or phrases that come to mind with that term.

**species** a group of organisms with shared characteristics; members of a species can mate and have offspring

**ecosystem** a community of living and nonliving things that interact with each other

**conifer** a tree that produces seeds inside cones for reproduction

**genus** a group of related species; in the taxonomic hierarchy, a genus ranks below a family and above a species

**climate** the typical weather patterns in a particular place over a long period of time

**interdependent** mutually dependent; depending on one another

**condense** to change from a gas to a liquid state

**chromosome** molecules in living things that contain genetic information (DNA)

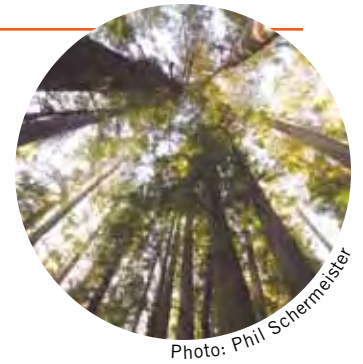
**climate change** changes in Earth's weather patterns over time. Scientific research has shown that human-induced climate change is caused by a buildup of carbon dioxide and other gases in the air, which traps more of the sun's heat.

**Teachers, please send us feedback about our materials.**

E-mail [Education@SaveTheRedwoods.org](mailto:Education@SaveTheRedwoods.org), or join us on [Facebook.com/RedwoodEducation](https://www.facebook.com/RedwoodEducation).

## Activities

**Tree Survey.** Do a class survey of the trees in and around your school grounds. Help students identify and plot on a map the location of each tree. Using the technique described in the booklet, measure the height and diameter of each. Use field guides or ask a tree expert to identify each species. If possible, locate recent or historical photographs of the school area using TerraServer.com, Google Earth, local government resources or a local historical society. How and why might the trees have changed over time? [Science, Mathematics, Social Science, History]



**Mass Experiments.** As a class, discuss how students think plants gain enough mass to grow from a seed to a large plant like a coast redwood. For example, students may suggest that the mass comes from the soil or water (it actually is mostly from carbon dioxide in the air). Have groups of students design an experiment to test the growth rate of different plants; ask each group to develop a proposal that states their hypothesis and experimental design. Provide seeds, soil, plant pots, water, scales and other materials for students to perform their experiments. Have groups create a poster or other presentation to share their findings with the rest of the class. [Science]

**A Day in the Life.** Ask students to read *One Day on Beetle Rock* by Sally Carrighar, which describes nine different animals living in and around a granite outcrop in Sequoia National Park. Students should note challenges and interdependencies each animal experiences. Make a list of native animals in your local area, and assign each student an animal to research. Have students write a short narrative about a day in that animal's life, including challenges and interdependencies. [Science, English Language Arts]

**Pennies for Redwoods.** Have students calculate the height of a coast redwood tree in pennies — and challenge students to collect that number of pennies for redwoods or a local park. Encourage them to decide how they will promote the effort and collect and donate the funds. [Mathematics, Social Science]

## Resources

Visit our Redwoods Teacher Tool Kit at [Education.SaveTheRedwoods.org](http://Education.SaveTheRedwoods.org) for these great additional resources:



- Photo Libraries
- Redwood Transect (a field-based activity)
- Reading List

## Wrap-Up

Use the following questions for discussion or as writing prompts to help students articulate what they have learned:

- Imagine the coast redwood forest 100 years from now. How would you like it to be? What will need to happen for that to be true?
- How can you, your family or our class help redwoods? Encourage students to pledge to help redwoods:

**[SaveTheRedwoods.org/pledge](http://SaveTheRedwoods.org/pledge).**

## Standards

Sample standards addressed by the booklet and the suggested activities include:

### Common Core State Standards ([CoreStandards.org](http://CoreStandards.org))

**English Language Arts**  
Grades 6-12: *Reading Standards for Informational Text, Writing Standards.*

**Mathematics**  
Grades 9-12: *Quantities, Creating Equations.*

### California Standards

**Science**  
Grades 9-12: *Biology/Life Sciences 4, 6a, 6e, Earth Sciences 6a, 6b, 6c.*

### National Standards

**Science**  
Grades 9-12: *Content Standard A Science Inquiry, Content Standard C Life Science, Content Standard F Science in Personal and Social Perspectives.*

**History**  
Grades 5-12: *Era 4: Expansion and Reform, Standard 2E.*

**Geography**  
Grades K-12: *Physical Systems Standard 8, Environment and Society Standard 15.*



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