

# **Teacher's Guide to the Coast Redwood Journal**

Grades: 3<sup>rd</sup> – 6<sup>th</sup> (may be adaptable for 2<sup>nd</sup> grade)

This journal can be used in various coast redwood forests throughout California. It is meant to be a general guide for students to record information from their field trip. Below are various activities you can do to compliment the journal. **If you would like a more specialized map for your journal, please contact the Education & Interpretation Manager, 415-362-2352, [education@savetheredwoods.org/](mailto:education@savetheredwoods.org/)**

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## **Where Am I?**

Use this map to orient the students as to where they are in relation to their school. How long were they on the bus, did they have to cross any bridges? If you have a larger map of the redwood region you can use it to show the students where they are and where their school is. Hopefully they will realize they are not too far from a redwood forest. Have them mark on the map where their field trip site is and where their school is. You can ask the students what they notice about the map; things like, are the coast redwood forests close to the water or inland? And, why are coast redwoods found where they are? Let the students brainstorm ideas and come up with their own questions.

## **What Do You See?**

Have the students find a spot in the forest to sit and draw what they see. Give them boundaries so they don't wander off too far. They should take some time with their drawings and put detail into what they see. Make sure they include plants, animals, human-made things like pollution, and the weather. Is it sunny out or are there clouds? Additionally they can write words that describe what they see. Once they are done, have students share their drawings. Did some students see different things depending on where they sat in the forest?

## **Plant ID Guide**

This plant guide is to be used by students while visiting coast redwood forests. Depending on where you are, some of the plants may or may not be present. Students can use this guide to identify plants on their own while exploring the forest, or in a more structured way. You can walk along a path and stop in front of a plant that is on this guide and have the students try to identify it. After the plant has been identified, you can use the information found in the **Teacher's Information Guide to Redwood Forest Plants**, to teach the students some interesting facts about the plant. Cater the amount of information you give the students to their age and grade level. Have the students check off the plants they learn about. **\*\* Remind the students to be careful of and not touch poison oak. If they are unsure of what it looks like make sure they ask an adult before they touch a leaf.**

## **Plant Investigation**

After the students have learned some of the different coast redwood forest plants, have them

choose one, sit in front of it, and study it in more detail. They should write the name of their plant in their journal and describe a leaf. Is it soft, rough, thick, thin? They can use the ruler on the back of the journal to measure the leaf and write down its length. What color is the leaf? Does it smell? Are there any insects on the leaf, or have insects been eating it? Encourage them to use all of their senses, minus taste, to help them describe their leaf. Alternatively they can describe the whole plant if they want. They should then draw their leaf, again using as much detail as possible. If time allows you can go over the different parts of a leaf and have them label their drawing. They can also create a leaf rubbing in the box or on the back page, instead of a drawing.

### **Interesting Redwood Facts**

As you walk through the forest with your students, you can stop at various locations to talk in more detail about coast redwoods.

#### Coast Redwood Cones

Ask students to find a redwood cone on the ground. Ask them why the tallest tree in the world produces such a small cone. Coast redwood cones are only an inch long and contain a few dozen seeds. Coast redwood trees can also reproduce from sprouts that come out of the base of the parent tree. If a tree dies or becomes sick, it will send out sprouts from its roots which will use the nutrients from the parent tree. Some of these sprouts will then grow large and carry on the genes of the parent tree. In this way coast redwood trees often form circles around a parent tree which was cut or died. These circles of trees are called **fairy rings**. Have students look carefully at the redwood cone from all angles. Do they notice any patterns?

#### Coast Redwood Bark

Coast redwoods get their name from their beautiful reddish bark. The bark is thick, up to 30 cm (12 in) and is soft and fibrous. This thick bark protects and insulates the tree. The bark is rich in tannins (a chemical) which help protect it from insect damage. You can often see fire scars on the bark of redwood trees. Even if a fire has burned part of the tree, it can still survive and continue growing. When you see a cave-like feature at the base of a redwood tree it has been caused by a fire. This is called a **goose pen**.

#### Coast Redwood Needles

Coast redwood needles are 1.5-2.5 cm (.5-1 in) long and bright green. The needles lie flat as they attach to the branch. The needles at the base of the tree are different from those grown at the top of the tree. The needles at the base are broad and long and those up at the top are short and narrow and look like scales (See picture at right). Ask students to find the two different types of needles on the ground. An unique thing about coast redwood needles is their ability to absorb moisture from the air. This is why coast redwoods thrive on the California coast, where there is a lot of fog. The coast redwood needles absorb water from the fog, and some water drips down to the forest floor providing moisture for the trees' roots and other forest plants.



Redwood forests have a water source year round, from rainfall in the winter to fog in the summer.

### **Scavenger Hunt**

You can use this as a filler activity or have students complete it as you hike through the forest. Once a student sees one of the items on the scavenger hunt list they should answer the question about it. If the question asks the length or width of something, have the students use their arms or feet to measure. They can then write down, “two arms’ length,” or “seven paces.”

### **Tree Rings**

Often a coast redwood park will have a display of a cut tree, or you might be able to find an old stump from a cut tree. Additionally you can use a fallen tree if you can get a good look at a cross-section of the tree. Ask the students what the tree rings tell us about the tree. The rings can tell us the age of the tree, possibly what the weather was like during a certain year, and if there were any fires or other major events which disrupted the forest. Have the students try to count the rings of the tree you find. Each ring should correspond to one year of growth. They should count the wide, whitish part of the ring. The lighter ring is growth which occurs early in the growing season when the tree grows quicker. The darker part of the ring is tree growth later in the season. The study of tree rings and dating trees is called **dendrochronology**. Ask the students if they notice any patterns with the tree rings. Are they all the same width? Are there any black scars? If a tree ring is thinner, it means the tree did not grow as much that year. If a ring is wide, then the tree grew a lot that year. If there are black scars, it probably means there was a fire during that year. Ask the students what they think might cause a tree to grow quickly one year and slowly the next. Some answers might be: changes in weather, a year when there was a lot of rain or a drought. Or often after a fire a tree will grow quickly because all the surrounding trees have burned and it has more access to sunlight, water and nutrients. Studying the rings of a tree can tell us a lot about the history of the surrounding forest.

### **Reflection**

At the end of the day or back in the classroom, have the students reflect on what they did in the forest. Have them write about what they saw, smelled, touched, and heard in the redwood forest. What was their favorite part of the day? Ask the students to share something they liked and something they learned from the field trip.