Activity: What time, how far and how deep?

Many students have never been to Crater Lake National Park. This introductory activity puts distance, time, and lake depth for Crater Lake National Park in perspective for students.

One of the questions students find interesting is how deep is Crater Lake and how does it compare to other lakes around the world? Have students go to www.ajkids.com and Ask Jeeves "What are the deepest lakes in the world?"

Preparation:

1. Make a copy of the *Measurement at Crater Lake* worksheet for each student to complete.
2. Make an overhead of this sheet also.
3. Decide whether students will use the computer or if you will supply one item of information in each section for them to convert.
4. Make calculators and conversion charts available if needed.

Lesson:

1. This lesson will need to be customized for the location of your school.
2. Look up the directions to Crater Lake National Park on one of these websites – www.mapquest.com or http://maps.yahoo.com or http://map.msn.com or other direction website. These directions will also include the distance and time it takes to get there. Have students use this information to complete the first two sections of the worksheet.
3. Alternately - You can have students look up the information in groups of four, individually or in pairs in the computer lab instead of giving them the information. If you wish your students to have practice measuring distances on maps using scale you can also use physical maps.

4. Here are some Facts and Figures that you can use for additional math for students. The greatest depth is the third fact down. If you want students to find this information on their own you can guide them to the website: www.nps.gov/crla/student/student1.htm.

Facts & Figures

Volume of water in the lake: 5 trillion gallons (19 trillion liters)

Lake surface area: 20.6 sq. mi. (5,385 ha)

Greatest depth: 1,943 ft. (592 m)

Average depth: 1,148 ft. (350 m)

Widest point: 6.02 mi. (9.69 km)

Narrowest point: 4.54 mi. (7.31 km)

Highest point on the rim: 1,980 ft. (604 m) above the lake

Average height of the rim: 1,000 ft. (300 m) above the lake

Height of Wizard Island: 764 ft. (233 m) above the lake

Size of the park: 286 sq. mi. (78,117 ha)

Highest point in the park: 8,929 ft. (2,721 m) at Mt. Scott

Visitors per year: about 500,000

Annual precipitation: 69 in. (175 cm)

Average annual snowfall: 533 in. (1,354 cm)

Record annual snowfall: 879 in. (2,233 cm), 1932-33

5. Once students have the base data have them convert to fill in the rest of the table. Conversions are listed in the table.
6. After their conversions are complete have students work on the comparisons at the bottom of each table. They will need to research on the web or using an almanac to

complete these. Alternately you could have them take it home and complete it as homework.

Extension:

1. Have students draw a map showing time and miles on the way to Crater Lake. (i.e. In 10 minutes we have gone _____ miles).

Have students show what part of a 24 hour day it will take to drive there, drive back, and/or combine the two as a fraction and a percentage.

Measurement at Crater Lake

Travel Distance to Crater Lake

Find out the distance to Crater Lake in miles then convert the distance to yards, feet, and inches. You may use a calculator.

Miles 5,280 feet in a mile	Yards	Feet 3 feet in a yard	Inches 12 inches in a foot

Traveling from school to Crater Lake is the same distance as traveling from home to _____.

Travel Time to Crater Lake

Find the time it takes to travel to Crater Lake, then convert it to minutes and seconds using a calculator.

Hours 24 hours in a day	Minutes 60 minutes in an hour	Seconds 60 seconds in a minute

Traveling from school to Crater Lake takes the same amount of time as traveling from home to _____.

Depth of Crater Lake

Find the depth of Crater Lake, and then convert it to yards and inches. You may use a calculator. Going straight down to the deepest point of Crater Lake is like _____.

Yards	Feet 12 feet in a yard	Inches 12 inches in a foot

Measurement at Crater Lake

Travel Distance to Crater Lake

Find out the distance to Crater Lake in miles then convert the distance to yards, feet, and inches. You may use a calculator.

Miles 5,280 feet in a mile	Yards	Feet 3 feet in a yard	Inches 12 inches in a foot
77 miles	135520 yards	406560 feet	4878720 inches

Travel Time to Crater Lake (2 hours)

Find the time it takes to travel from Medford to Crater Lake, then convert it to minutes and seconds using a calculator.

Hours 24 hours in a day	Minutes 60 minutes in an hour	Seconds 60 seconds in a minute
2 hours	120 minutes	7200 seconds

For extra credit tell what fraction and percentage of the day it will take us to get there.

1/12 of the day and 8% of the day

Depth of Crater Lake

Find the depth of Crater Lake, and then convert it to yards and inches. You may use a calculator.

Yards	Feet feet in a yard	Inches 12 inches in a foot
647 yards	1,943 feet	23316 inches