



Teacher Guide

Create a Tennis Ball Globe

Key idea: The features of our spherical planet can be represented on a flat map.

Time: 50 minutes

Objective

Students explore how a flat map of Earth can be made into a globe the size of a tennis ball. They then determine the scale of their tennis ball globe.

Do the activity

Divide students into small groups and give each group the *Create a Tennis Ball Globe Student Handout*.

Ask students to follow the directions on the handout to assemble their tennis ball globes.

Instruct students to use the tape measure to determine the circumference (in centimeters) of their tennis ball globe. Then they will figure out the scale of the globe, using the fact that the actual circumference of Earth is approximately 40,000 kilometers.

Answer Key

Determine the scale of your globe

1. Measure the circumference in centimeters of your tennis ball globe. Record the measurement. *[Students' measurement of the circumference of the tennis ball globe may vary slightly. The circumference is about 20 cm.]*
2. The circumference of Earth is about 40,000 kilometers. How many kilometers on Earth's surface does 1 centimeter on the tennis ball globe represent? Be sure to show your work. *[Exact calculations may vary depending on students' measurement of the circumference of globe. Sample calculation:*

$$\begin{aligned} \frac{? \text{ km}}{1 \text{ cm}} &= \frac{40,000 \text{ km}}{20 \text{ cm}} \\ &= \frac{2,000 \text{ km}}{1 \text{ cm}} \end{aligned}$$

So 1 centimeter on the tennis ball globe equals 2,000 kilometers on Earth's surface.]

STANDARDS ALIGNMENT

Geography

I.1: The World in Spatial Terms: How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.

CCSS RTS.6-8.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

M.7.G: Draw, construct, and describe geometrical figures and describe the relationship between them.

MATERIALS

For each student group:

- > *Create a Tennis Ball Globe Student Handout* (see note)
- > Scissors
- > Tape (both regular clear tape and two-sided tape, if it is available)
- > Tennis ball
- > Tape measure

Note: The map cutout on the Student Handout is sized for wrapping around a tennis ball. However, photocopy machines sometimes cause changes in scale. Measure the 1-inch box on the handout to make sure your copies are the correct size before making enough for your classes.

