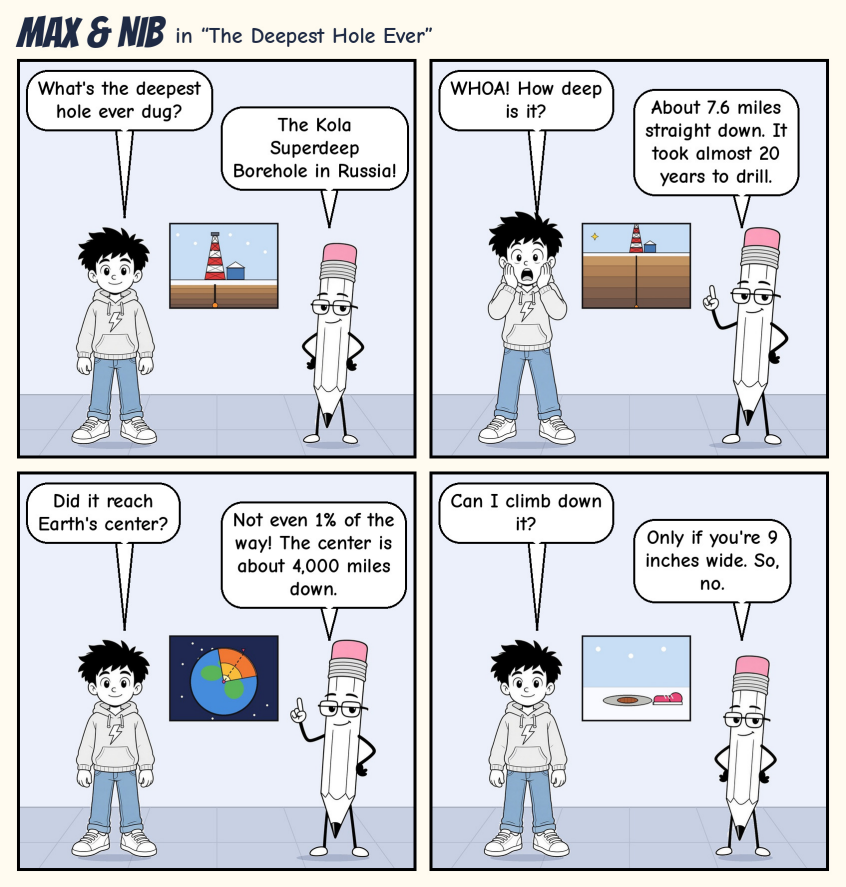


Name: _____ Date: _____

What's the Deepest Hole Ever Dug?

Earth Science · Grades 3–6 · About 15 minutes · Max & Nib

Cool facts

What's the deepest hole ever dug? In 1970, scientists in the Soviet Union began drilling in far northwest Russia to study Earth's crust. After almost 20 years, the hole reached 40,230 feet (12,262 meters). That's about 7.6 miles straight down! It is called the Kola Superdeep Borehole, and it is still the deepest hole ever dug. But it is only about 9 inches (23 centimeters) wide. Deep down, the rock was about 356°F (180°C), so hot that it damaged the drilling tools. Drilling stopped in 1992. Earth's center is about 4,000 miles down, so the hole went less than 1% of the way! (Some oil wells are longer, but they bend and run sideways.)

Cool Fact Drillers found tiny fossils of ocean plankton about **4 miles** down in the Kola hole. (Smithsonian)

Questions

1. What is the name of the deepest hole ever dug, and in what country is it?

2. About how deep is the hole, in miles?

3. Why did the scientists stop drilling?

4. Earth's center is about 4,000 miles down. Round the hole's depth to about 8 miles. About how many holes that deep, stacked end to end, would it take to reach Earth's center?

Show your work

Write about it

Imagine you are a scientist riding a tiny robot down the Kola hole. Describe what you see, hear and feel as you go deeper.

What's the Deepest Hole Ever Dug? — Answer Key

Grades 3–6 · For teacher or parent use

Answers

1. What is the name of the deepest hole ever dug, and in what country is it?

   The Kola Superdeep Borehole, in Russia.

2. About how deep is the hole, in miles?

   About 7.6 miles (40,230 feet, or 12,262 meters).

3. Why did the scientists stop drilling?

   It got too hot. The rock was about 356°F (180°C), and the heat damaged the drilling tools.

4. Earth's center is about 4,000 miles down. Round the hole's depth to about 8 miles. About how many holes that deep, stacked end to end, would it take to reach Earth's center?

   About 500 holes (4,000 ÷ 8 = 500).

Writing prompt: Imagine you are a scientist riding a tiny robot down the Kola hole. Describe what you see, hear and feel as you go deeper.
Accept any reasoned answer for the writing prompt. For adults: Smithsonian Magazine gives 40,230 ft (12,262 m) and “almost 20 years” to reach it (drilling began in 1970; the record depth was reached in 1989; the project stopped in 1992). 40,230 ÷ 5,280 = 7.6 miles (Smithsonian and Scientific American round to about 7.5). Earth's mean radius is about 3,959 miles (6,371 km, NASA); Smithsonian rounds it to 4,000 miles. 7.6 ÷ 3,959 is about 0.2%, so “less than 1%” is safe. A few oil and gas wells (in Qatar and off Sakhalin, Russia) are longer in total length because they run sideways, but none goes deeper straight down (Scientific American).

Sources

- Smithsonian Magazine: Ask Smithsonian: What's the Deepest Hole Ever Dug? — https://www.smithsonianmag.com/smithsonian-institution/ask-smithsonian-whats-deepest-hole-ever-dug-180954349/
- Scientific American: How Deep Is the Deepest Hole in the World? — https://www.scientificamerican.com/article/how-deep-is-the-deepest-hole-in-the-world/
- NASA Science: Earth Facts — https://science.nasa.gov/earth/facts/

Word Record **Borehole**: a deep, narrow hole drilled into the ground, often to study rock or find water, oil or gas.

Cool Fact Earth's outer layer, the crust, is thin compared to the whole planet: only about **3 to 25 miles** thick. (Smithsonian)