

A Million Whys Book 21: Science Quiz

The Magnet Expedition, by Crafty Clover.

Name: _____ Date: _____ Score: _____ / 12

Fill in the missing number. Use the number bank.

Number bank: 10 11 32 45 100 250 900 1,400 1931 1975 2008 780,000

1. Physicist Paul Dirac showed in _____ that single magnetic poles could exist in theory, but nobody has found one.
From: Can a Magnet Have Only One Pole?
2. The outer core is about _____ miles thick.
From: How Does Swirling Liquid Metal Deep Inside Earth Make a Magnet?
3. The last full flip happened about _____ years ago.
From: Did the North and South Magnetic Poles Ever Swap Places?
4. Jupiter spins once every _____ hours.
From: Why Does Jupiter Have Such a Huge Magnetic Field?
5. About every _____ years, the Sun's field flips its north and south poles.
From: Why Do Scientists Call the Sun a Giant Magnet?
6. On the ground, it is about _____ times weaker than the field at the surface of a typical fridge magnet.
From: Is Earth's Magnet Stronger than a Fridge Magnet?
7. Around _____ years ago, sailors in China began using magnetized needles on ships, and the idea soon spread to other parts of the world.
From: How Did People First Discover the Compass?
8. Pairs like NE mean halfway between, and northeast is _____ degrees.
From: What Do the Letters and Numbers on a Compass Mean?
9. Old sea charts had large, colorful roses with many points, often _____.
From: What Is a Compass Rose on a Map?
10. Some maglev trains in service reach over _____ miles per hour.
From: How Can a Train Float on Magnets?
11. In _____, scientists studied thousands of satellite pictures and reported that grazing cattle and resting deer tended to line up north and south.
From: Do Cows and Deer Really Face North and South?
12. A scientist discovered these bacteria in _____ while looking at mud under a microscope.
From: Which Tiny Living Things Carry Their Own Compass Needles?

Watch a short video answer for every question at xdme.com

Answer key

1. **1931** (Physicist Paul Dirac showed in 1931 that single magnetic poles could exist in theory, but nobody has found one. Book 21, Question 17)
2. **1,400** (The outer core is about 1,400 miles thick. Book 21, Question 52)
3. **780,000** (The last full flip happened about 780,000 years ago. Book 21, Question 61)
4. **10** (Jupiter spins once every 10 hours. Book 21, Question 68)
5. **11** (About every 11 years, the Sun's field flips its north and south poles. Book 21, Question 69)
6. **100** (On the ground, it is about 100 times weaker than the field at the surface of a typical fridge magnet. Book 21, Question 72)
7. **900** (Around 900 years ago, sailors in China began using magnetized needles on ships, and the idea soon spread to other parts of the world. Book 21, Question 76)
8. **45** (Pairs like NE mean halfway between, and northeast is 45 degrees. Book 21, Question 77)
9. **32** (Old sea charts had large, colorful roses with many points, often 32. Book 21, Question 90)
10. **250** (Some maglev trains in service reach over 250 miles per hour. Book 21, Question 112)
11. **2008** (In 2008, scientists studied thousands of satellite pictures and reported that grazing cattle and resting deer tended to line up north and south. Book 21, Question 130)
12. **1975** (A scientist discovered these bacteria in 1975 while looking at mud under a microscope. Book 21, Question 131)