

LEVELED Book • M



How Much Is a Trillion?



Written by John Rousselle



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In October 2008, the U.S. national debt grew larger than the number of spaces on the sign.

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🔊 Really Big Numbers

What's the biggest number you can think of? One hundred? One thousand? Ten thousand?



We use special words such as *million*, *billion*, and *trillion* to talk about really big numbers. But what do these words mean? And what do a *million*, a *billion*, and a *trillion* look like?

More than 7 billion people live on planet Earth.

🔊 Hide and Seek

Have you ever played the game of hide and seek?

In hide and seek, one person counts up to a number while everyone else hides. But some numbers are so big that you couldn't count up to them in your whole lifetime.



🔊 How Much Is a Million?

We write one million as a one followed by six zeros, like this: 1,000,000.

Do you know how much a million is? Some of the world's largest cities have millions of people living in them. If you are lucky, you might win a million dollars in a lottery.

Ten Largest Cities in the World

	City	Country	Population*
1	Mumbai	India	11 million
2	Shanghai	China	10 million
3	Karachi	Pakistan	9 million
4	Delhi	India	8 million
5	Istanbul	Turkey	7 million
6	São Paulo	Brazil	7 million
7	Moscow	Russia	6 million
8	Seoul	South Korea	6 million
9	Beijing	China	6 million
10	Mexico City	Mexico	5 million

* 1 person = 1 million people



🔊 I've Told You a Million Times!

Maybe you think your parents have told you to clean your room a million times. But have they really?

Let's say that every day your parents tell you ten times to clean your room. You would be over 273 years old before they told you for the millionth time!

🔊 A Million Pennies

Imagine a jar with one thousand pennies in it.

Now imagine one thousand jars, each with one thousand pennies inside.

That's a million pennies.



🔊 Ready or Not, Here I Come!

Remember our earlier game of hide and seek?

Let's say you count to one million while your friends run and hide.

You will count for over three weeks without stopping before you reach one million. Your friends will probably be very well hidden by then.





🔊 How Much Is a Billion?

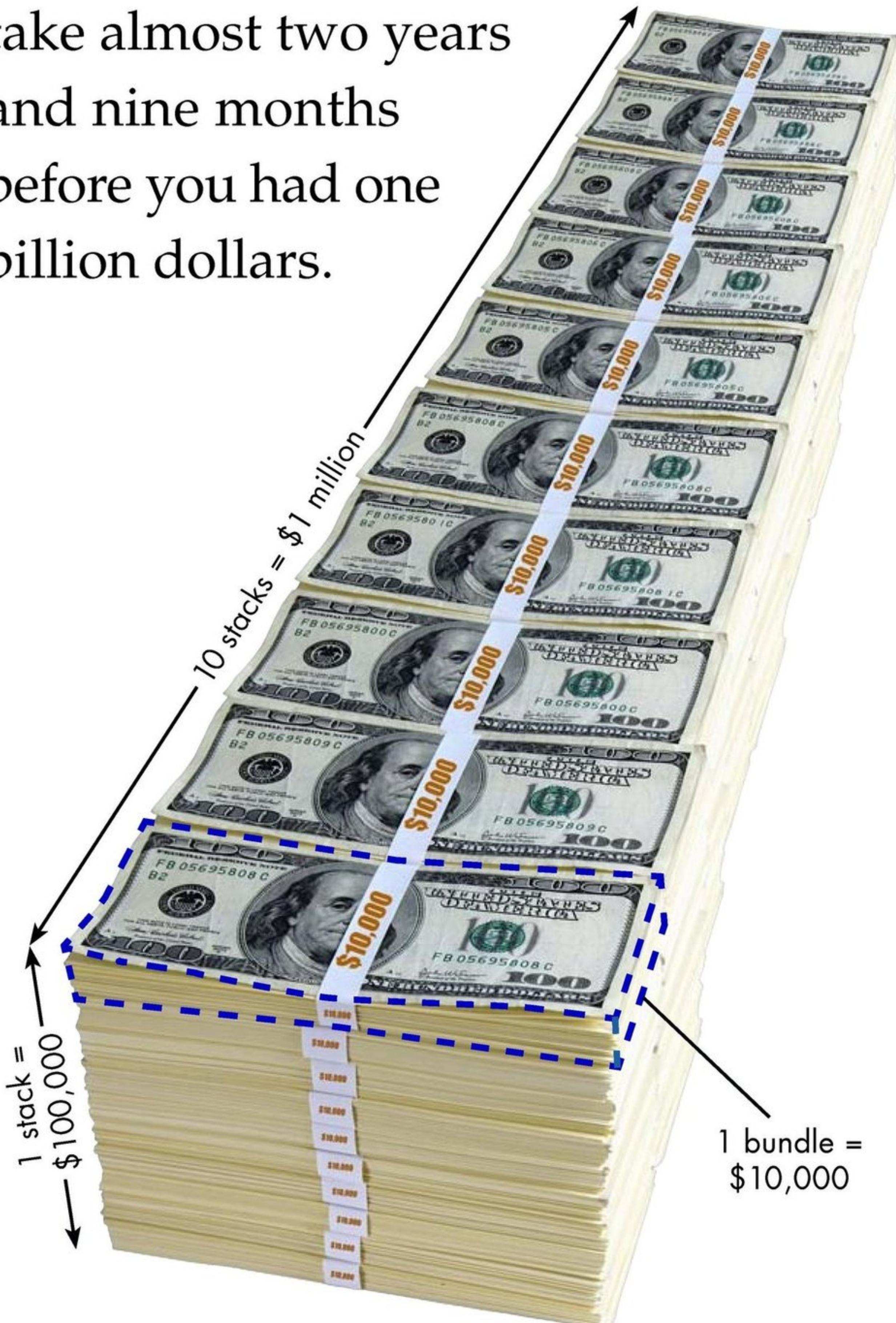
We write one billion as a one followed by nine zeros, like this:
1,000,000,000.

There are more than seven billion people alive on Earth right now. More than one billion of them are under the age of ten years old.

That's a lot of kids!

🔊 But how much is a billion?

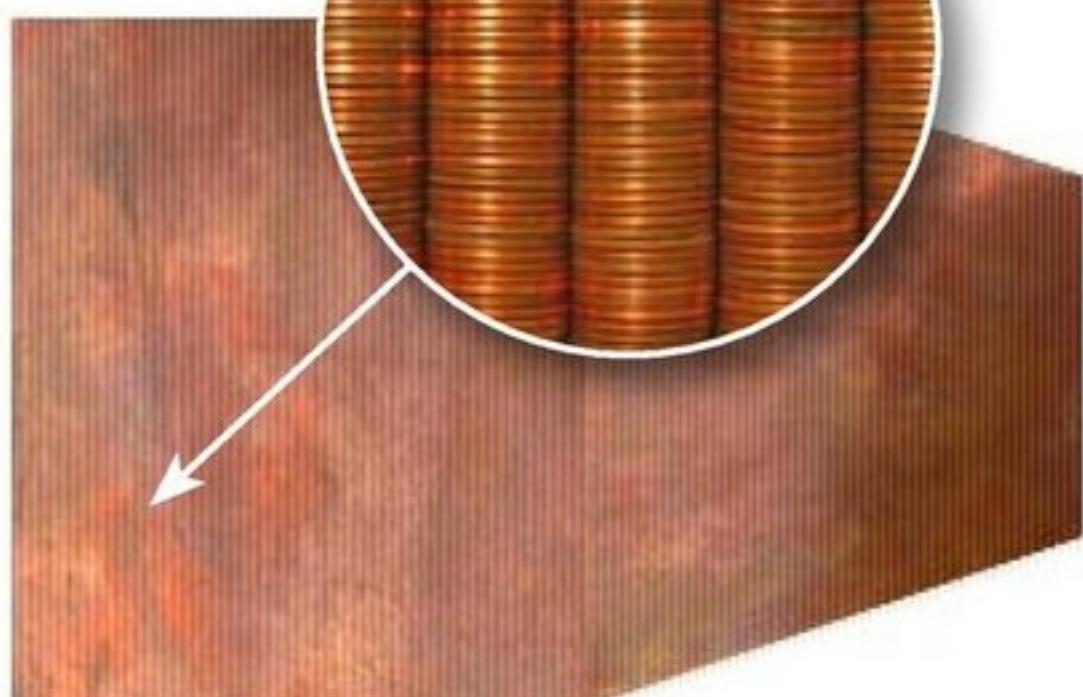
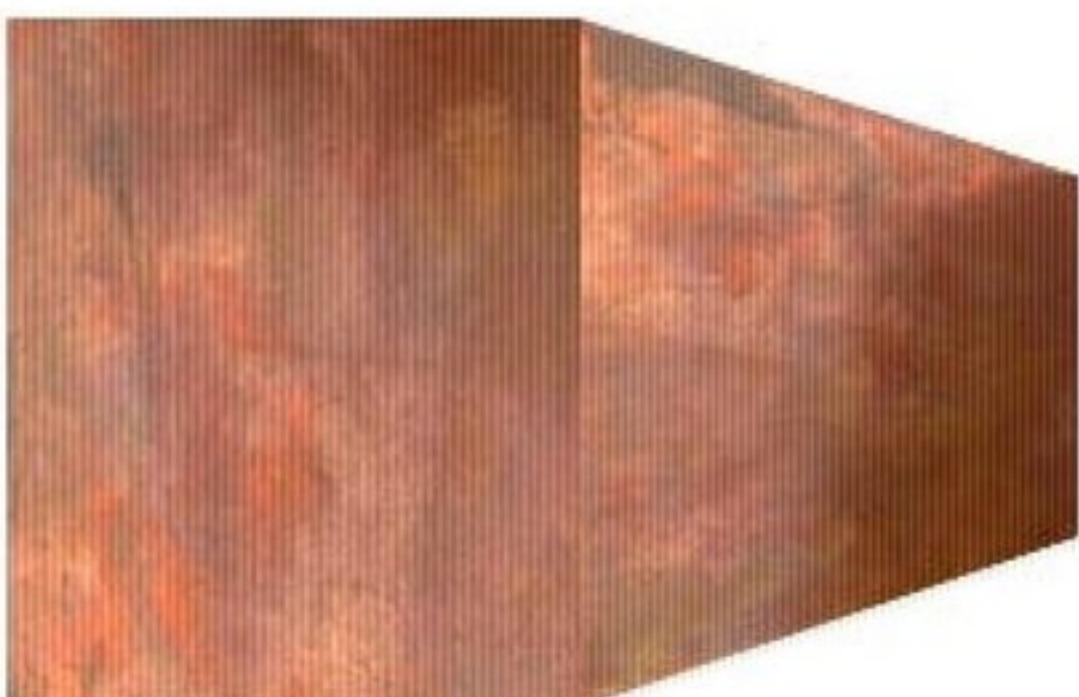
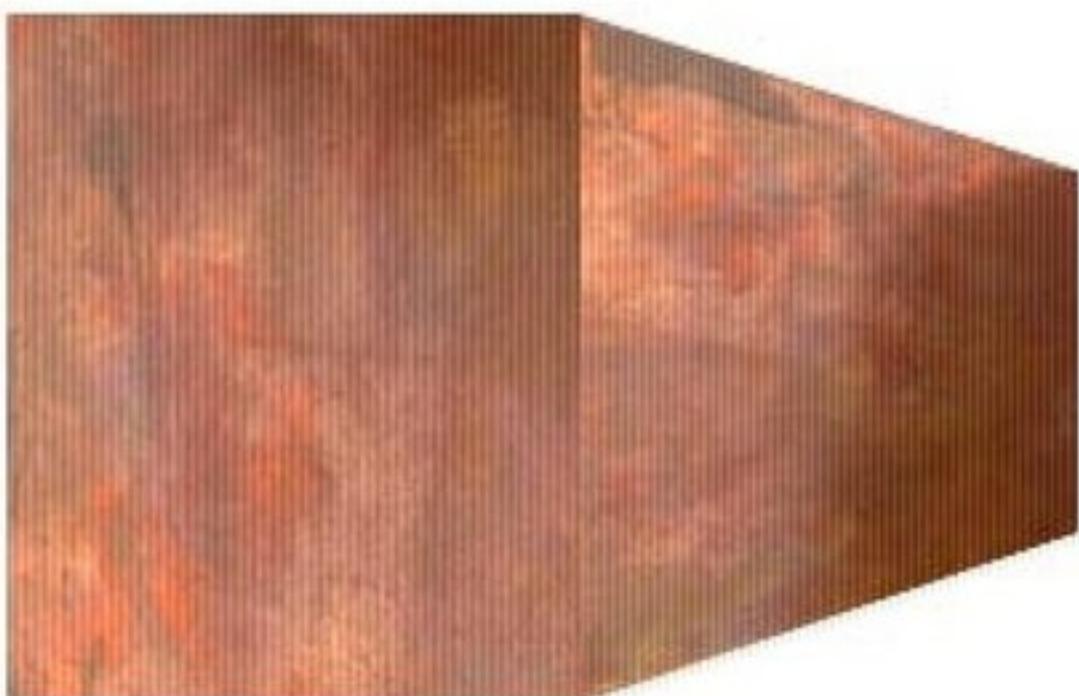
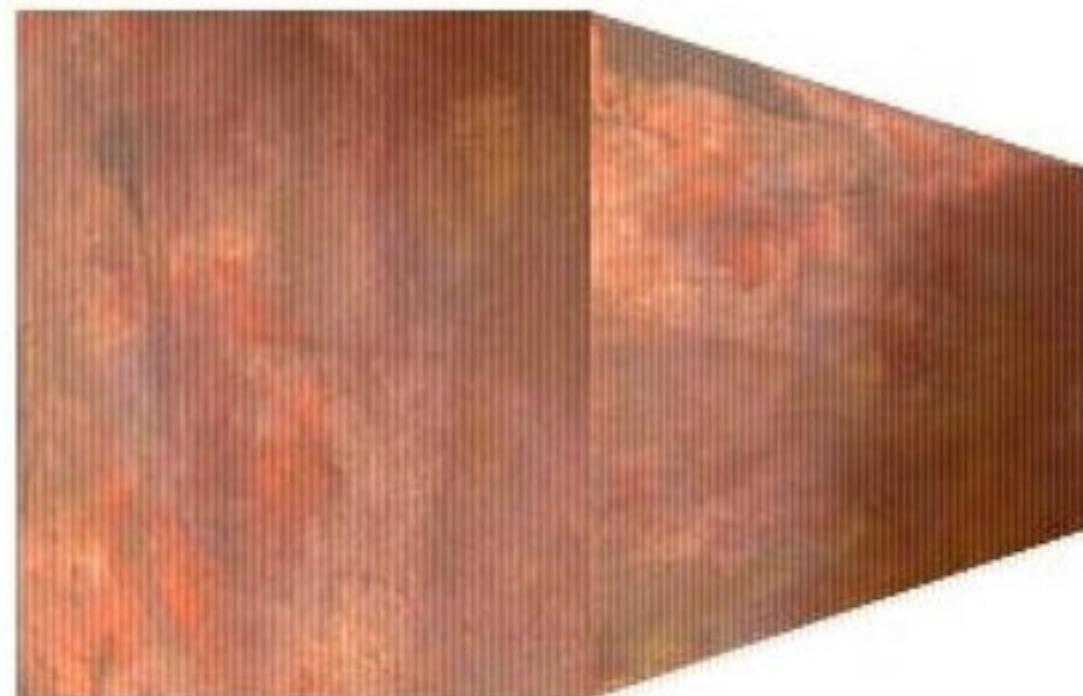
Imagine I gave you a million dollars every day. At that rate, it would take almost two years and nine months before you had one billion dollars.



- 🔊 How long do you think it would take to count to a billion during a game of hide and seek?

If you counted that high, your game would last about one hundred years! And that's if you didn't stop to sleep, eat, drink, or do anything else while you counted.





🔊 A Billion Pennies

Remember the jar of one thousand pennies?

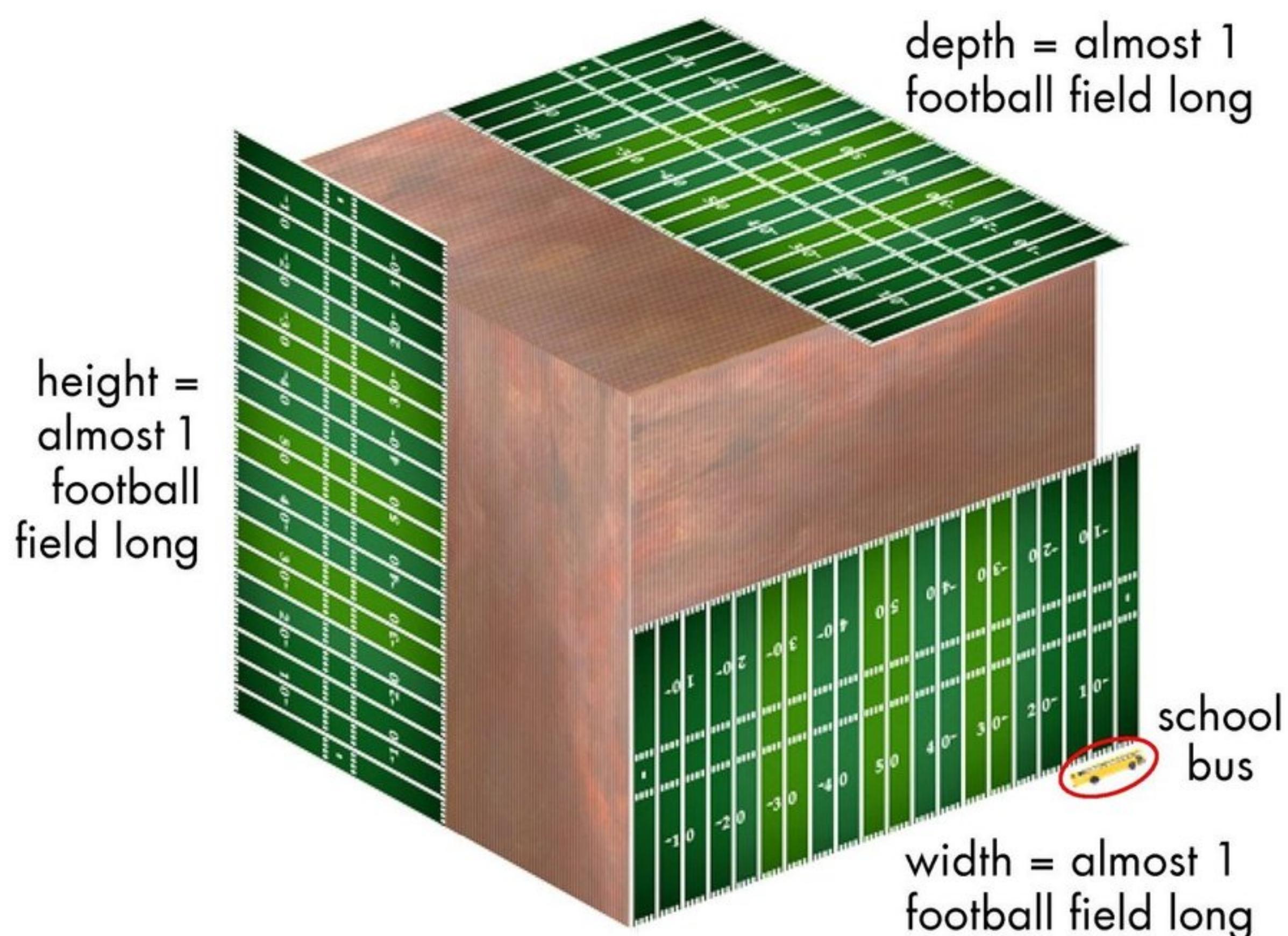
Imagine stacking one billion pennies up in the shape of a block. The block would be about the size of five school buses.

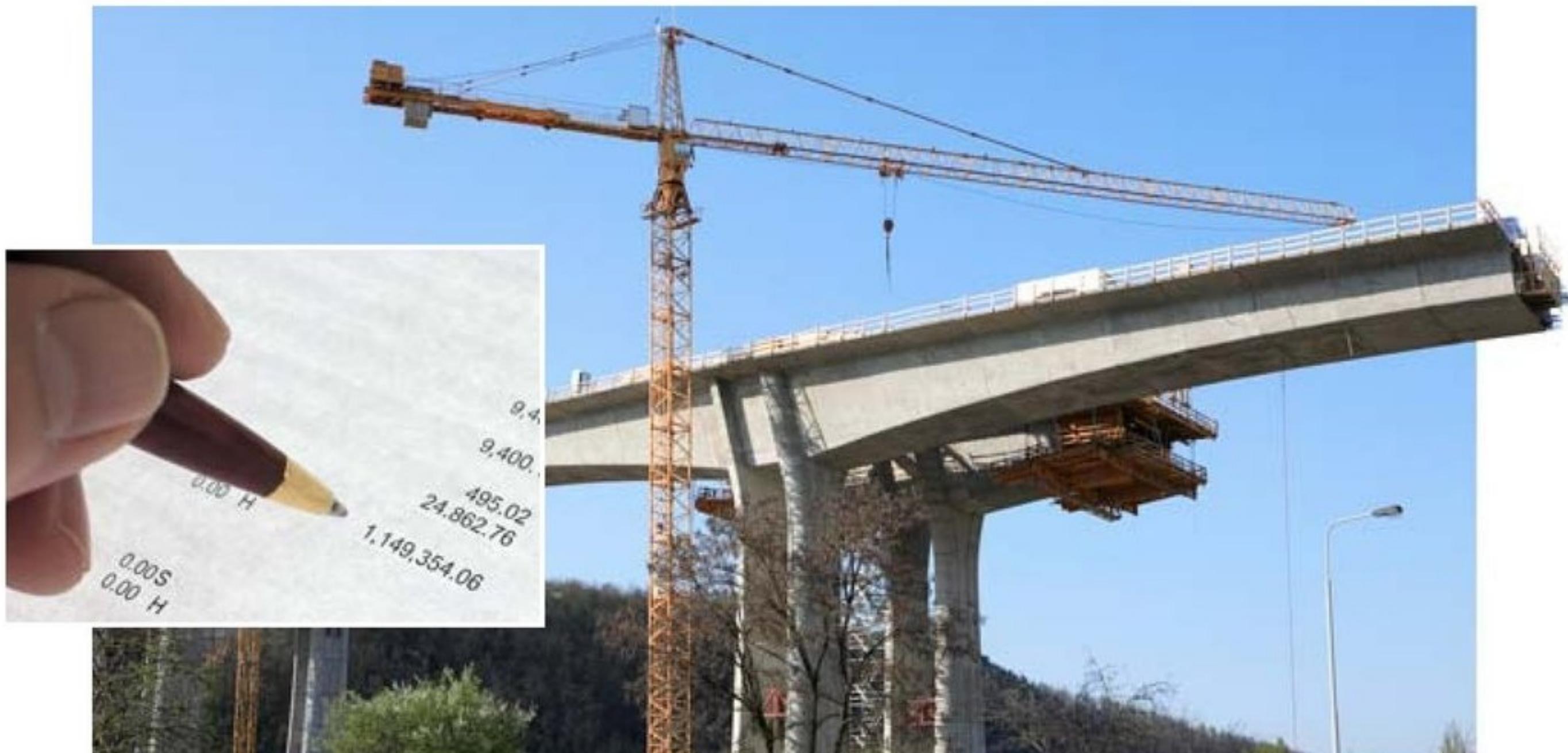
🔊 How Much Is a Trillion?

A billion is a big number, but a trillion is much larger. One thousand times larger to be exact. We write one trillion as a one followed by twelve zeros, like this: 1,000,000,000,000.

But what does a trillion look like?

Imagine that you stacked up one trillion pennies in the shape of a cube. Each side of the cube would be almost as long as a football field.





Large construction projects often cost millions of dollars.

🔊 Big Numbers Are Useful

People who work in science, business, and government often use big numbers in their work.

A scientist might use big numbers to measure the distance from Earth to the Sun. A businessperson might use them to count how many products a company has sold. A city planner might use them to decide how many schools a city with millions of people needs.



Space is full of huge groups of stars called *galaxies*. If you counted all the stars in ten galaxies like the one we live in (above), you would have about one trillion stars.

🔊 Conclusion

Knowing about millions, billions, and trillions can help us understand our world and our universe. So don't be afraid of really big numbers and the words we use for them. Big numbers have a million uses!

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Teacher's Note:

Most English-speaking countries have adopted the "short-scale" system of numeric names described in this book. However, many other countries around the world use the "long-scale" system in which one billion = 1,000,000,000,000 and one trillion = 1,000,000,000,000,000,000.

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