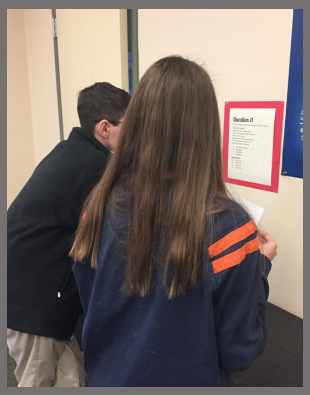
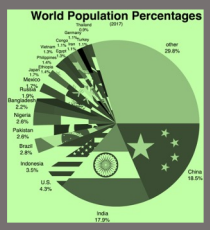








QUESTION TRAIL

Powers of Ten Day
October 10th

TO THE TEACHER:

Print out the following pages and post all but the last two on the walls of your classroom or area. Make enough copies of the last page so that each student will get a half-sheet response page. This is a great activity to have students do in pairs, each working with a partner to complete the trail. Students may begin with any question and follow the directions carefully. They may need scratch paper for notetaking and problem solving. Monitor and assist as needed. ENJOY!

Read more about celebrating Powers of Ten Day here.

NOTE: Most questions require an infographic (see Slides 12 - 19). For example, Question 1 (Slide 2) is posted with the graphic on Slide 12, etc.

"Off the Wall" Reading Hunt + Question Trail

Big Ideas for Little Scholars
RESOURCES for GIFTED & ADVANCED LEARNERS

QUESTION ONE

About how many more species of insects have been identified than birds?

A. 10^5
B. 10^4
C. 10^3
D. 10^2

If you answered…

A. Go to #2
B. Go to #9
C. Go to #5
D. Go to #7

QUESTION TWO

With 10 as the base number, what exponent would you use to represent the predicted world population in 2057?

A. 9
B. 10
C. 8
D. 12

If you answered…

A. Go to #10
B. Go to #4
C. Go to #7
D. Go to #6

QUESTION THREE

A blue star could be _____ times hotter than a red one.

A. 10^4
B. 10^3
C. 10^2
D. 10^1

If you answered…

A. Go to #6
B. Go to #4
C. Go to #5
D. Go to #2

QUESTION FOUR

$(10^3 + 10^4 + 10^5) - 900 = ?$

A. 101,110
B. 110,110
C. 111,100
D. 110,100

If you answered…

A. Go to #2
B. Go to #5
C. Go to #7
D. Go to #8

QUESTION FIVE

Which statement below is correct?

A. The number of deaths caused by lions is 10^2 times greater than the number caused by sharks.
B. The number of deaths caused by snakes is more than 10^4 times greater than the number caused by sharks.
C. The number of deaths caused by snakes is 10^2 times greater than the number cause by hippos.
D. The number of deaths caused by snails is less than 10^2 times greater than the number caused by lions.

If you answered…

A. Go to #2
B. Go to #7
C. Go to #6
D. Go to #9

QUESTION SIX

$(10^2 + 10^2 + 10^3 + 10^4) \times 2 = ?$

A. 22,400
B. 24,400
C. 222,400
D. 224,200

If you answered…

A. Go to #9
B. Go to #7
C. Go to #10
D. Go to #8

QUESTION SEVEN

What is another way to write the number of blood cells in the human body?

A. $(7 \times 5) \times 10^8$
B. $(30 + 5) \times 10^8$
C. $(7 \times 5) \times 10^{12}$
D. $(5 \times 5 + 10^2) \times 10^9$

If you answered…

A. Go to #3
B. Go to #4
C. Go to #5
D. Go to #1

QUESTION EIGHT

What is another way to write the number of years between the time of the first flying reptiles and T-Rex roaming the earth?

A. $(5 \times 11) \times 10^6$
B. $(4 \times 11) \times 10^6$
C. 55×10^7
D. 45×10^7

If you answered…

A. Go to #1
B. Go to #5
C. Go to #7
D. Go to #2

QUESTION NINE

Which equation is TRUE?

A. $10^2 \times 10^2 + 10^2 = 10{,}110$
B. $10^2 \times 10^3 + 10^2 + 10^3 = 101{,}010$
C. $10^3 \times 10^3 - 10^3 = 999{,}000$
D. $10^3 + 10^3 + 10^2 = 2{,}200$

If you answered…

A. Go to #5
B. Go to #8
C. Go to #10
D. Go to #1

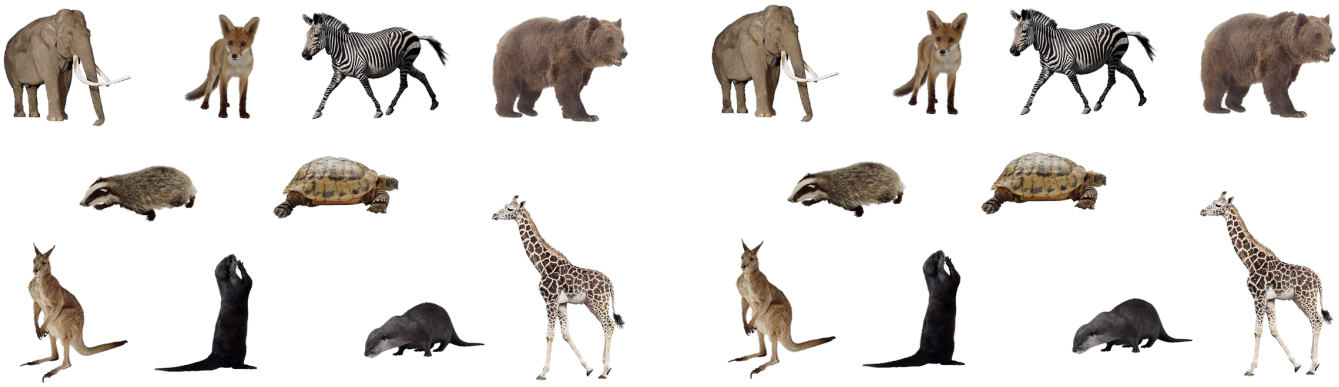
QUESTION TEN

Which statement is true about the number of tourists that visit Los Angeles each year?

A. It is close to 5×10^6.
B. It is about 5×10^3 more than the number of tourists to Orlando.
C. It is about 5×10^4 less than the number of tourists visiting New York.
D. It is about 2×10^5 more than those who visit Las Vegas.

If you answered...

A. Go to #3
B. Go to #2
C. Go to #8
D. Go to #7

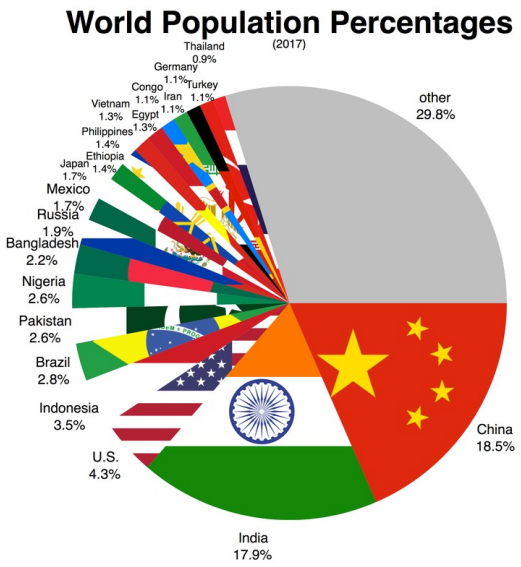


DID YOU KNOW?

About 10,000 new species of animals are discovered each year! Here are some recent counts:

Animal Group	Number of Species Identified
REPTILES	8,200
BIRDS	9,500
FISH	30,000
CRUSTACEANS	40,000
INSECTS	950,000

Source: The International Union for Conservation of Nature and Natural Resources (IUCN)

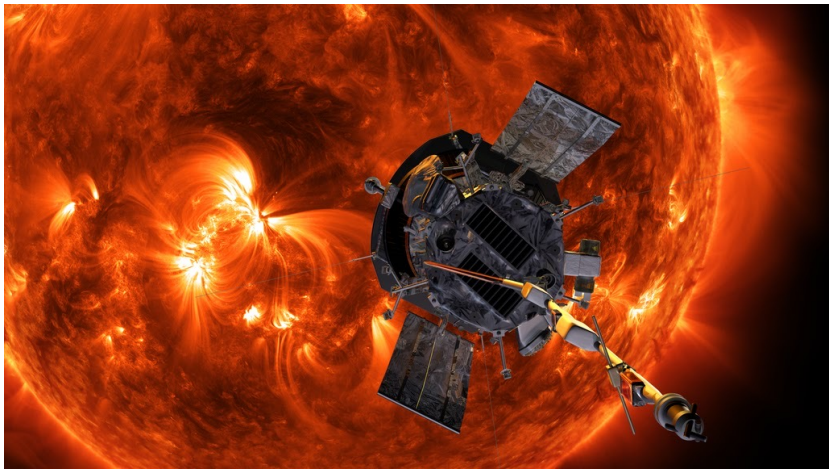


DID YOU KNOW?

The United Nations projects that the world population will reach 10 billion in the year 2057.

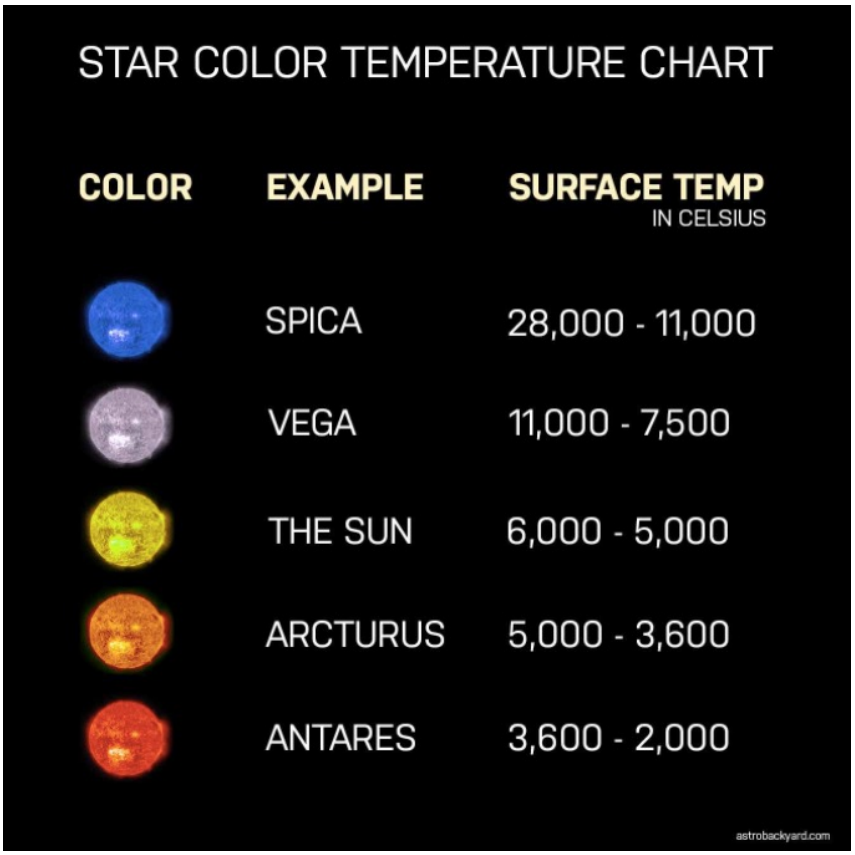
Country	Approximate Number of People
CHINA	1.4 billion
INDIA	1.3 billion
UNITED STATES	330 million
INDONESIA	270 million
Pakistan	230 million

Source: Worldometers.Info/ World Population

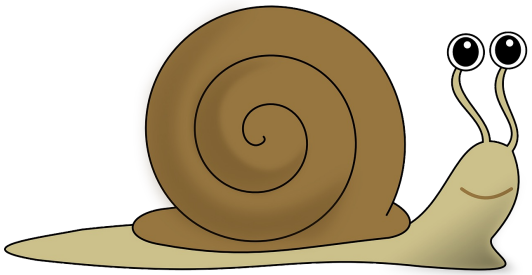


DID YOU KNOW?

Stars go through a life cycle and one way to classify stars is by their surface temperatures. The chart below shows the temperatures in degrees Celsius.



Source: astrobackyard.com



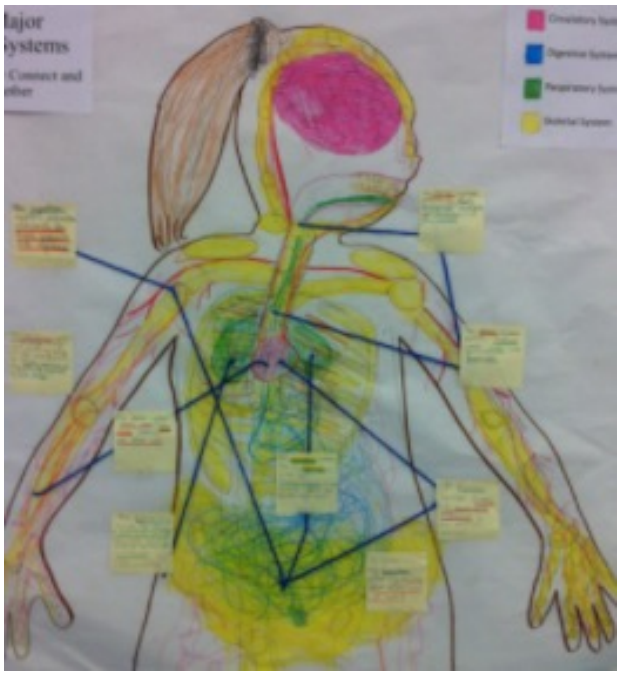
You don't hear much about the deadly freshwater snail because most of the deaths occur in Asia, Africa, and South America. Certain snails cause a disease which infects millions of people each year. Most do recover from the illness.

DID YOU KNOW?

Did you know that more people die each year as a result of contact with SNAILS than with LIONS, WOLVES, or SHARKS?

Animal	Number of People Killed by the Animal Each Year
SNAKE	**50,000**
DOG	**25,000**
FRESHWATER SNAIL (cause disease)	**10,000**
HIPPOPOTAMUS	**500**
LION	**100**
SHARK	**10**

Source: WHO / "World's Deadliest Animals"

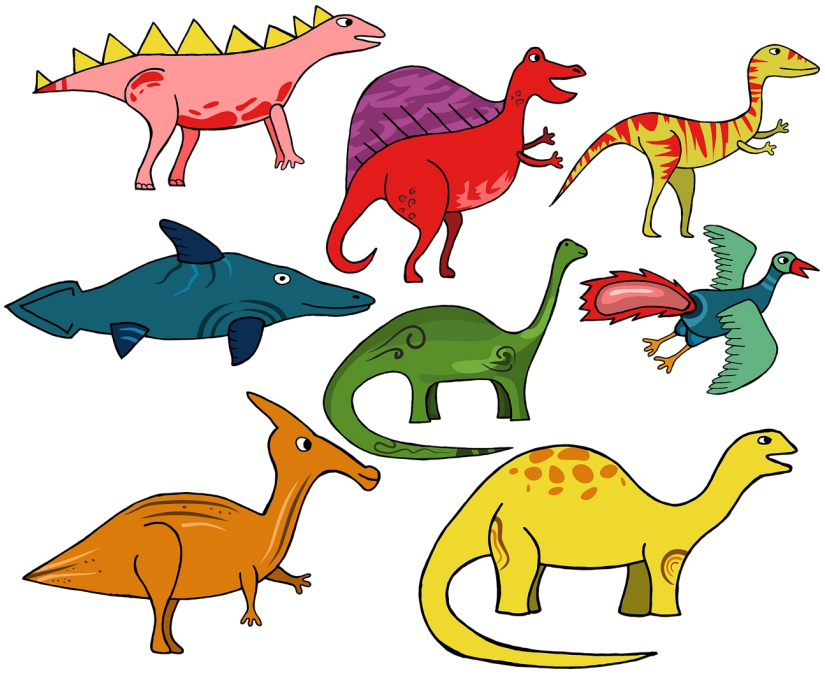


DID YOU KNOW?

Did you know that you have *trillions* of cells in your body?

TYPES of CELLS	APPROXIMATION of the NUMBER IN THE HUMAN BODY
BLOOD	35 trillion
SKIN	1.6 trillion
BRAIN	86 – 100 billion

Sources: Texas Heart Institute / National Academy of Science / BBC



DID YOU KNOW?

The word "dinosaur" comes from Greek roots that mean "terrible lizard."

200 million years ago Jurassic Period began

The first flying reptiles appeared during this period.

145 million years ago Cretaceous Period

T-Rex and Triceratops were roaming.

65 million years ago Alverez Event

A huge meteorite hits earth causing a mass extinction.

Sources: Oxford University Press's *Academic Insights for the Thinking World*

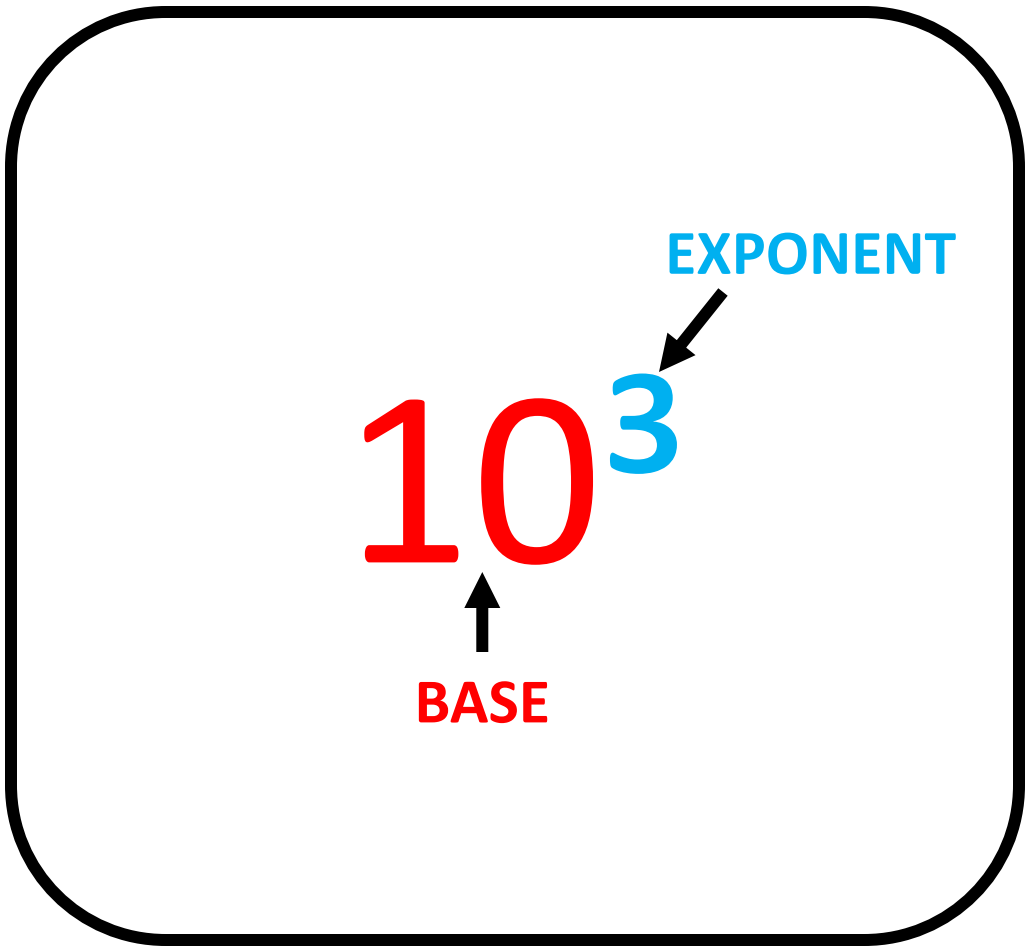


DID YOU KNOW?

Millions of people visit these U.S. cities each year. Here's some recent data:

City	Ave. Tourists Per Year
New York	9.8 million (9,800,000)
Miami	5.38 million (5,800,000)
Los Angeles	4.98 million (4,980,000)
Orlando	4.47 million (4,470,0000
San Francisco	3.57 million (3,570,000)
Las Vegas	3.3 million (3,300,000)

Sources: U.S. Tourism and Travel Statistics


EXPONENT
10^3
BASE

ANSWERS

Question	# 1	# 7	# 5	# 6	# 9	#10	# 3	# 2	# 4	#8
Answer	D	C	C	A	C	A	D	B	D	A

*Keep in mind that student may start with
any question, but the sequence will be the same.

Sample Correct Sequences:

1-7-5-6-9-10-3-2-4-8

3-2-4-8-1-7-5-6-9-10

6-9-10-3-2-4-8-1-7-5

Name:_____

"POWERS of TEN" Question Trail ~ Student Response Sheet

Start with ANY question. Write the question number and your answer in the table below, beginning with the first column. To answer some questions, you will need to look for information posted nearby. Some questions will require only math computation. If the trail leads you to a question you've already seen, you have made an error and will need to backtrack to find your mistake. If you fill in all ten questions without repeating, you have successfully completed the trail!

Question	**#**	**#**	**#**	**#**	**#**	**#**	**#**	**#**	**#**	**#**
Answer										

Name:_____

"POWERS of TEN" Question Trail ~ Student Response Sheet

Start with ANY question. Write the question number and your answer in the table below, beginning with the first column. To answer some questions, you will need to look for information posted nearby. Some questions will only require math computation. If the trail leads you to a question you've already seen, you have made an error and will need to backtrack to find your mistake. If you fill in all ten questions without repeating, you have successfully completed the trail!

Question	**#**	**#**	**#**	**#**	**#**	**#**	**#**	**#**	**#**	**#**
Answer										