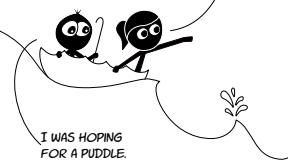


THE WATER'S MOVING FASTER! LOOKS LIKE WE'RE IN A RIVER!



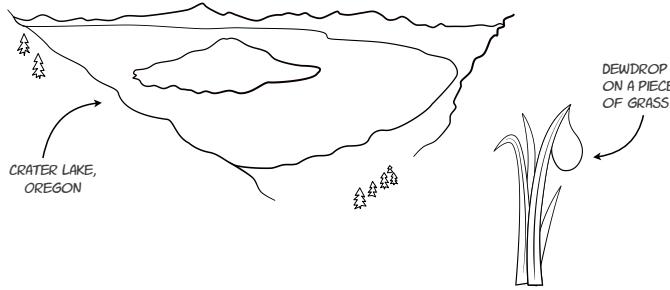
SCIENCE MOM

www.science.mom
www.youtube.com/ScienceMom

SCIENCE MOM'S Guide to WATER, Part 2



Think of a big lake versus a dewdrop. Pretty big difference in size, right?



The dewdrop is SUPER small compared to the lake. But a water molecule (the smallest bit of water you can have) is MUCH smaller than a dewdrop. A single drop of water has more than 1,000,000,000,000,000,000 water molecules! That huge number with 21 zeros is called a sextillion, and it is a **TRILLION TIMES BIGGER** than one billion.

1

2

- 6
YAHOO!
THEN SET THE BOAT IN WATER AND WATCH IT GO!
7
ADD A DOOR
OF SOAP
THEN FOLD THE
FRONT LIKE THIS.
CUT THE PAPER
LIKE THIS FOR THE
BACK OF THE BOAT.
GET A SQUARE
OF PAPER
PREFERABLY
CARDBOARD.
2. Soap Boat

- 5
shouts to the edges of the bowl!
One touch of soap, and the pepper
shoots to the edges of the bowl.
6
c) Watch the pepper scatter!
b) Add a touch of soap to the
surface of the water.
a) Place water in bowl and sprinkle
with pepper.
Method:
• Water
• Ground black pepper
• Bowl or plate
Materials:

3
Assuming a rate of counting one number per second.

Name	Million	How many zeros	How long to count that high*
Trillion	9 (1,000,000)	11 days	6 (1,000,000,000)
Quadrillion	12	31 years	12 days
Quintillion	13	31,704 years	11 days
Sextillion	14	31 million years	10 days
Septillion	15	31 billion years	9 days
Octillion	16	31 trillion years	8 days
Nonillion	17	31 quadrillion years	7 days
Decillion	18	31 trillion trillion years	6 days
Undecillion	19	31 quadrillion quadrillion years	5 days
Duodecillion	20	31 quadrillion quadrillion quadrillion years	4 days
Septilllion	21	31 quadrillion quadrillion quadrillion quadrillion years	3 days
Octilllion	22	31 quadrillion quadrillion quadrillion quadrillion quadrillion years	2 days
Nonilllion	23	31 quadrillion quadrillion quadrillion quadrillion quadrillion quadrillion years	1 day
Decilllion	24	31 quadrillion quadrillion quadrillion quadrillion quadrillion quadrillion years	1 hour
Undecilllion	25	31 quadrillion quadrillion quadrillion quadrillion quadrillion quadrillion quadrillion years	1 minute
Decillillion	26	31 quadrillion quadrillion quadrillion quadrillion quadrillion quadrillion quadrillion quadrillion years	1 second

4
HMM?
THAT'S GOOGLE
SEARCH ENGINE?
NAME OF AN INTERNET THAT'S
GOOGLE? ISN'T THAT THE
NAME OF PARTRICLES IN THE UNIVERSE?
A googol is bigger than the number
of particles in the universe!
Don't be ridiculous!
317 trillion centuries
31 billion years
31 million years
31,704 years
JUST GOOGLE IT OUT!
GOOGLE AND YOU'LL
NO, YOU SAID GOOGLE

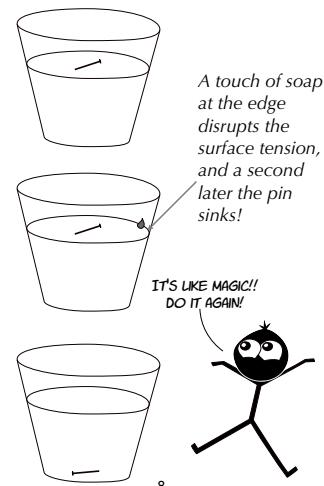
3. Floating Pin

Materials:

- A small pin or needle
- Bowl or cup
- Concentrated dish soap
- Water

Method:

- Fill bowl or cup with water and carefully place pin on surface. Hint: tweezers may help. The pin must be flat with the surface of the water. It will sink if it comes in at an angle.
- Add a touch of soap.
- Watch the pin sink!



7

4. Floating Paperclip

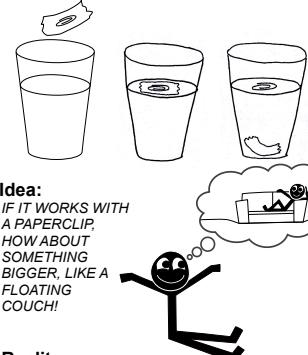
Materials:

- Paper clip
- Tissue paper or paper towel
- Cup or bowl
- Water

Method:

- Fill the cup with water and gently place a piece of tissue paper on the surface.
- Carefully place a dry paperclip on the tissue.
- The tissue should sink. If it doesn't, give it a gentle push downward.

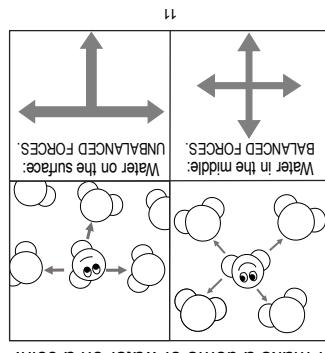
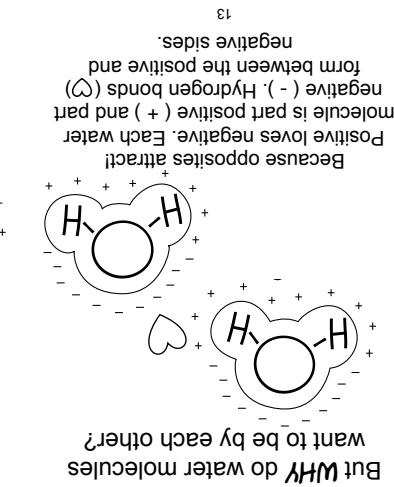
Tip: be sure that the cup and water are not soapy.



Reality:
THE SURFACE TENSION OF WATER IS ONLY 72 DYNES PER CENTIMETER!

10

9



HOW DOES IT WORK? SURFACE TENSION.

B

A

A

X

B

C

C

D

F

E

E

D

E

G

G

X