What is happening???

Density

How much "stuff"
crammed into
how much space?

Density

Usually used for solid and gas

How much "stuff" → mass

crammed into → "per"

How much space → volume

$\frac{g}{mL}$

$\frac{g}{cm^3}$

$\frac{kg}{L}$

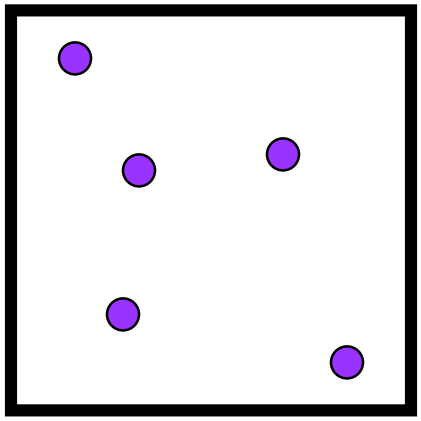
Etc…

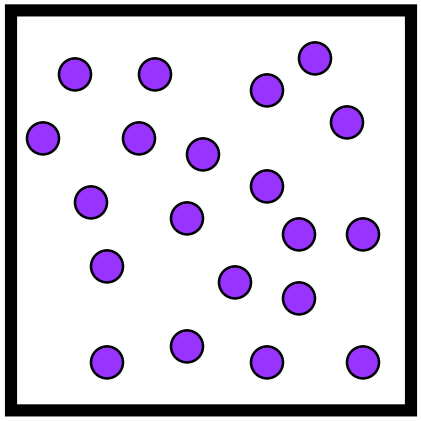
REMEMBER: 1mL = 1cm³

Density Equation

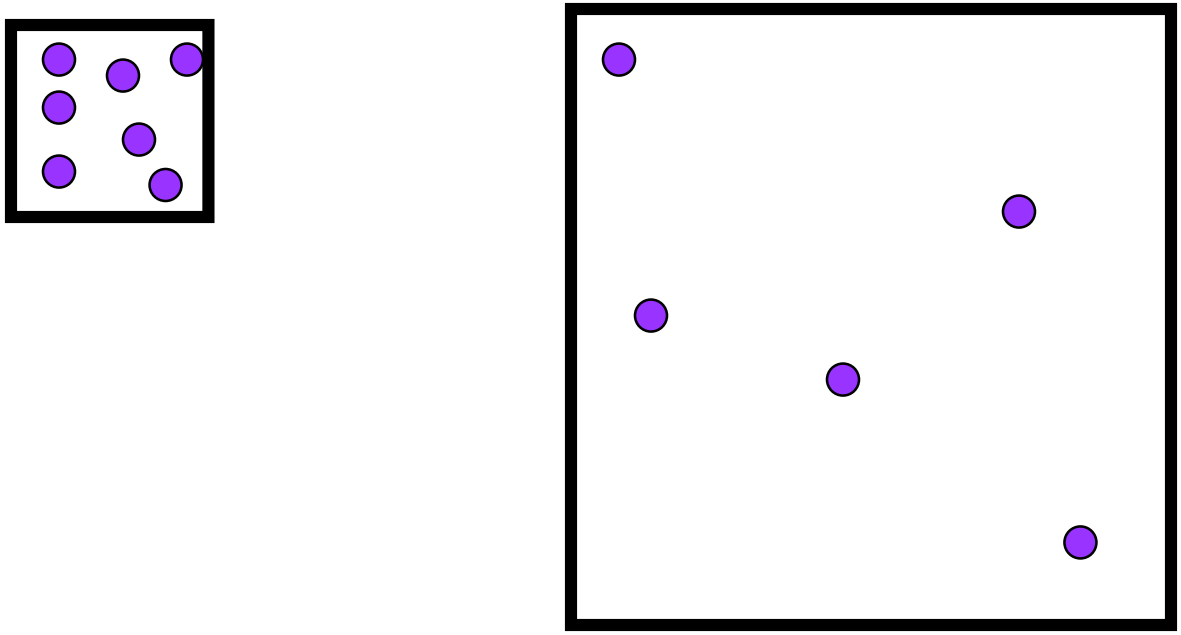
$$D = \frac{m}{V}$$

Which one is more dense?





Which one is more dense?



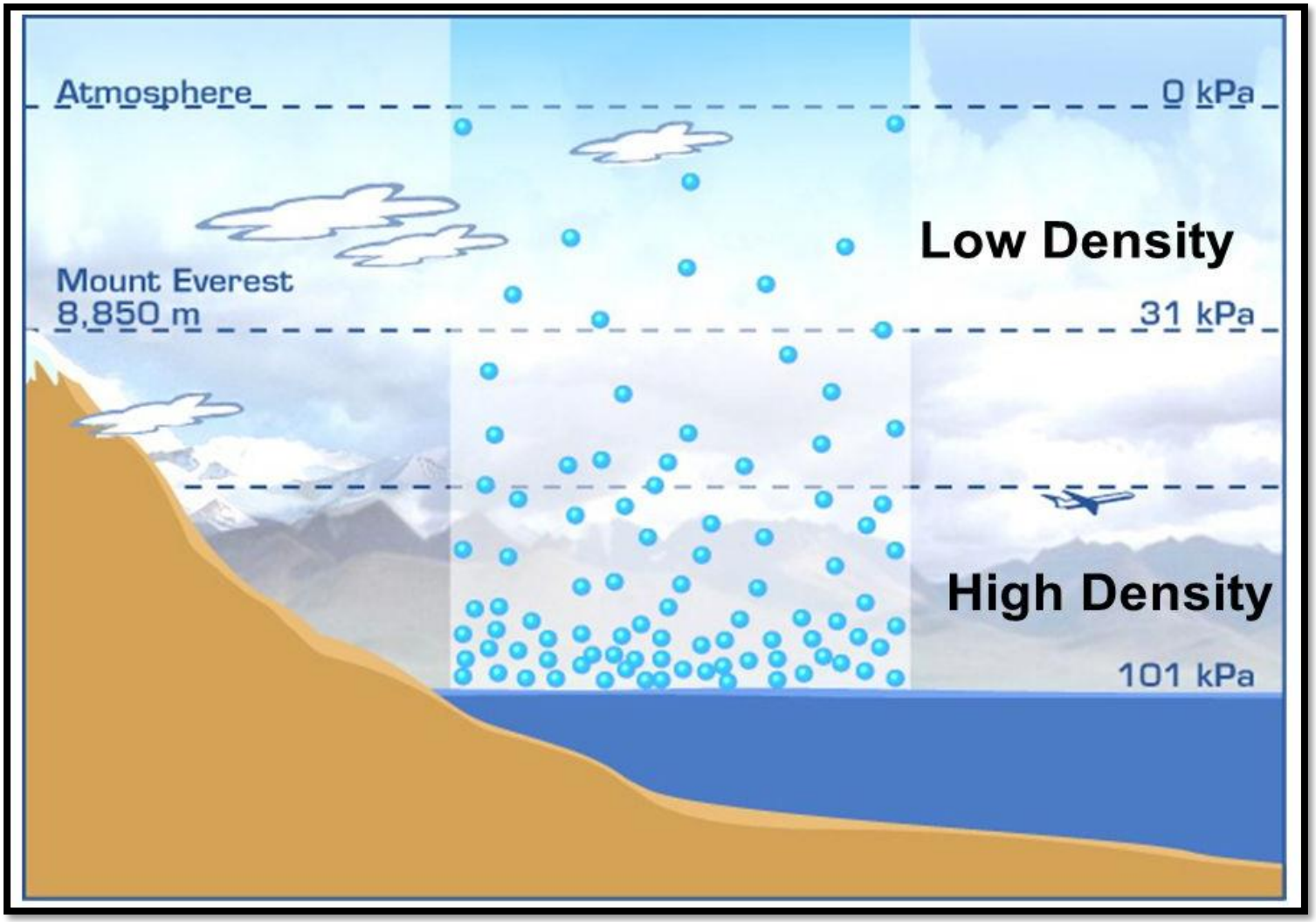
Density of Liquids Not Just Solids

Density of Water

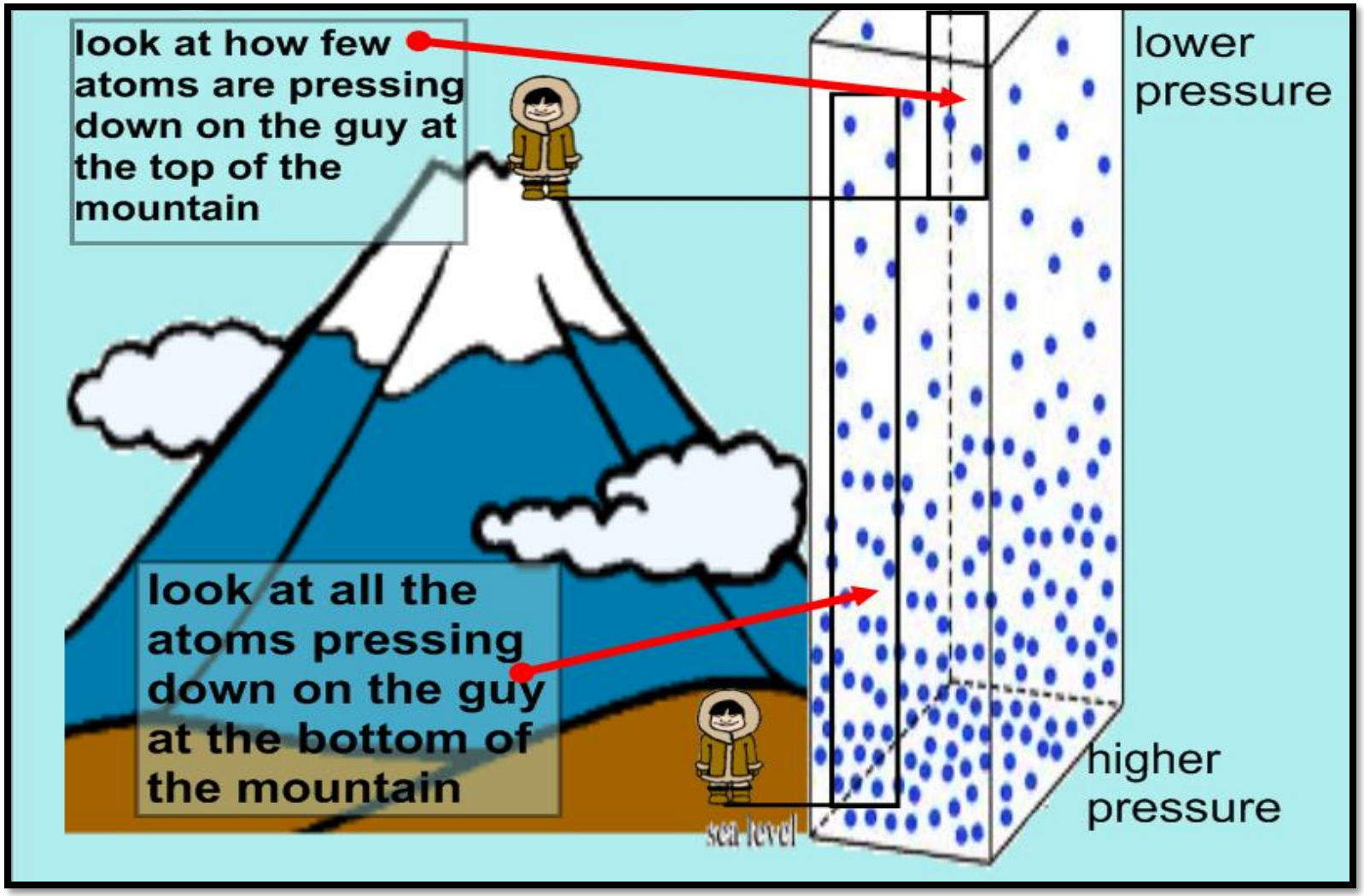
$$1 \ \frac{g}{mL} \qquad 1 \ \frac{g}{cm^3}$$

Memorize this!

Density of Air – Air Pressure

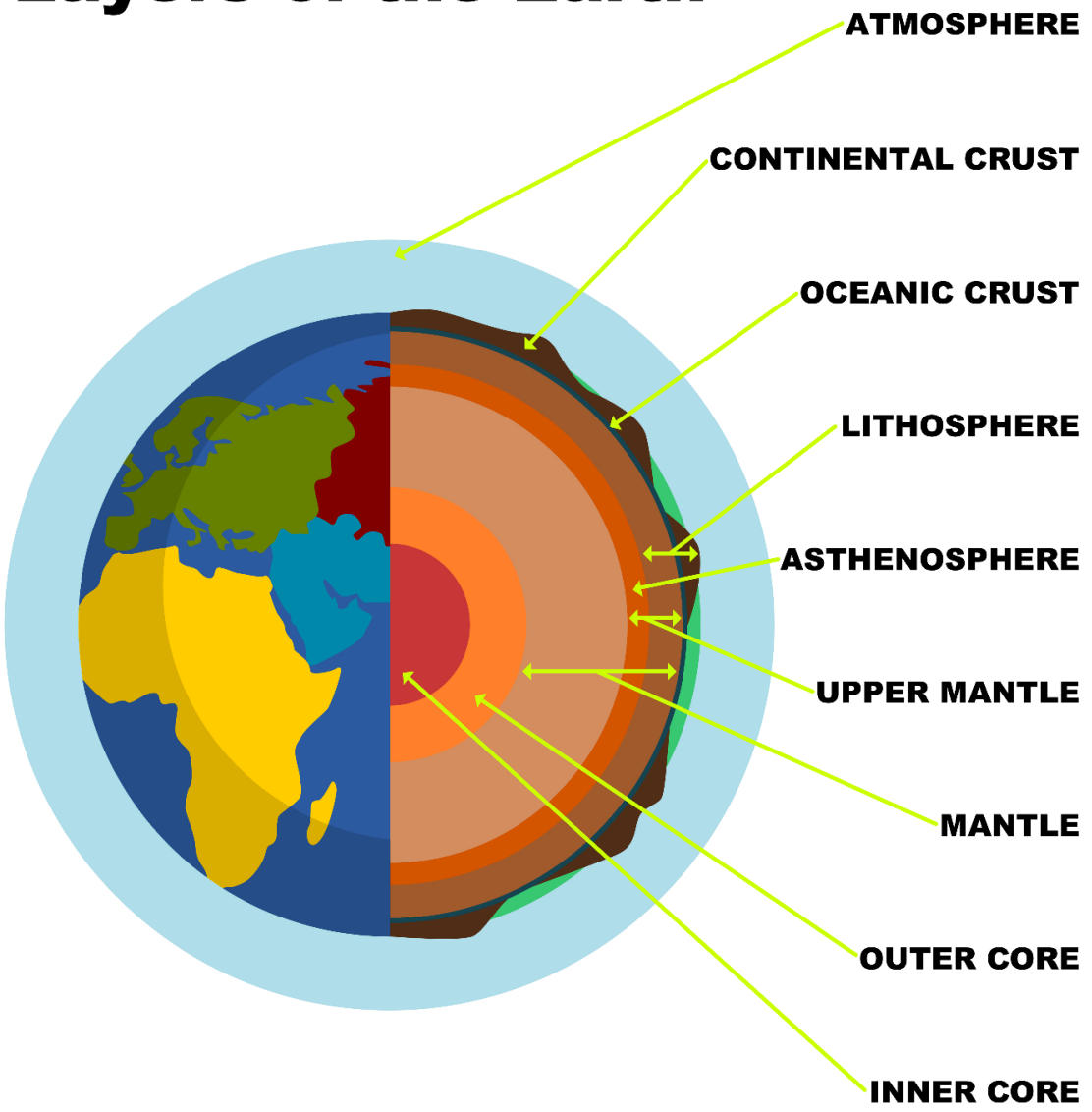


Density of Air – Air Pressure

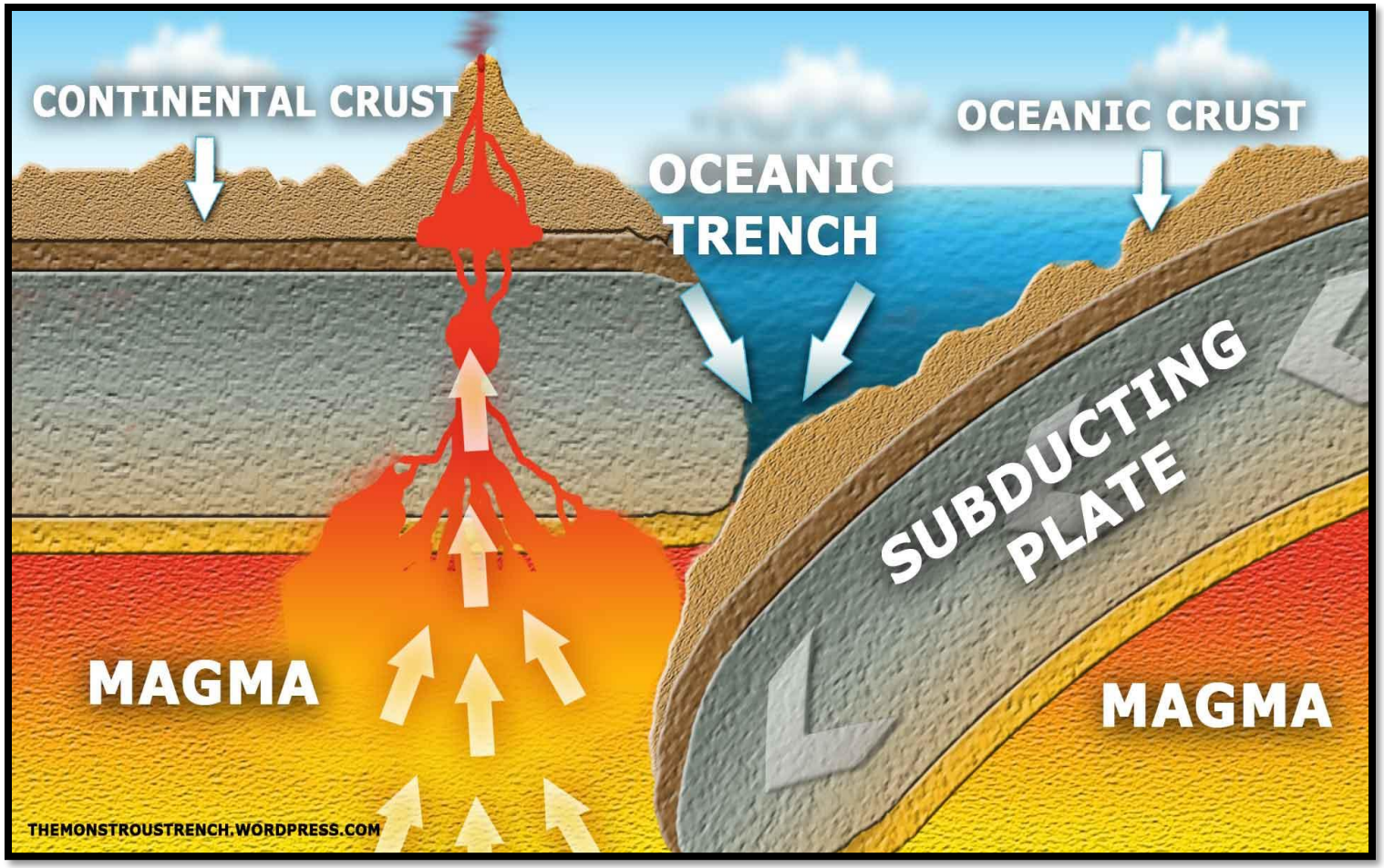


Layers of the Earth

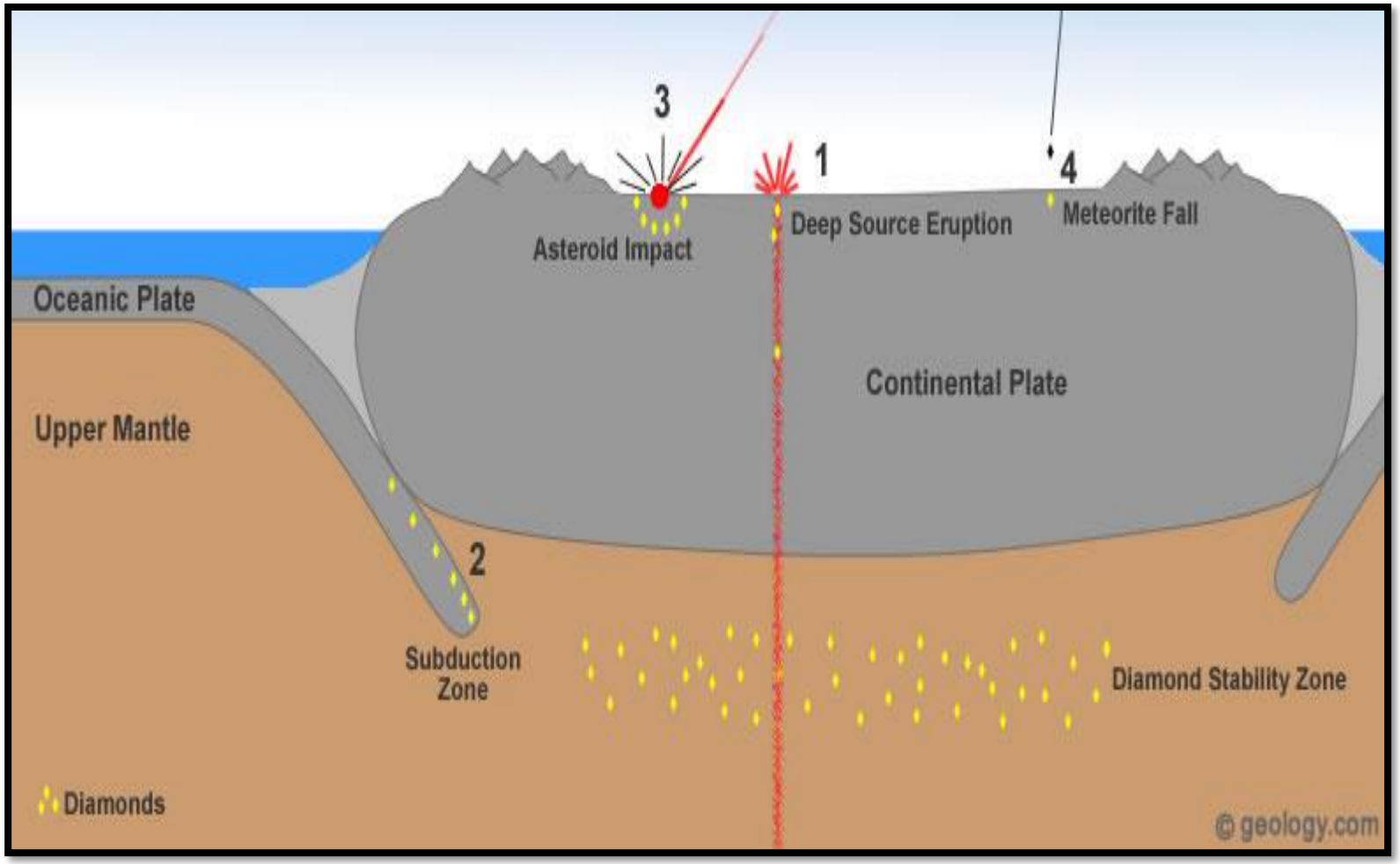
Different densities lead to earth having layers



Denser plate goes under less dense plate



One way diamonds get to the surface!



Japan - 2013

Japan - 2014

A new island!

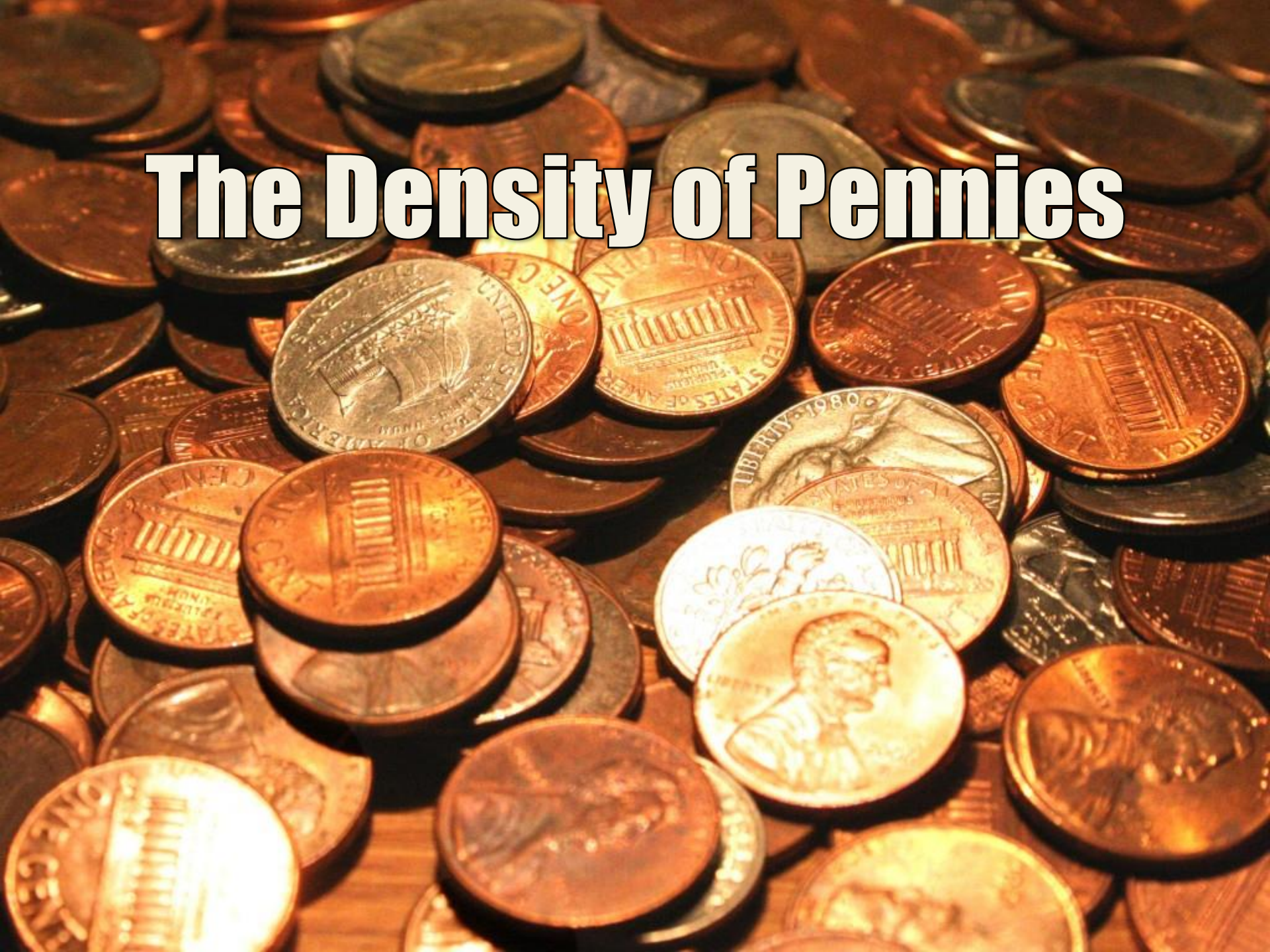
Try these…

1) Jack has a rock. The rock has a density of 6.73 g/mL and a volume of 8cm^3. What is the mass of the rock? (1 mL = 1cm^3) **53.84 g**

2) What is the volume of an object if the density is 1.45g/mL and it has a mass of 15.2 grams? **10.48 mL**

3) What is the density of a block if it has the following dimensions and it weighs 45.8 g? 12 cm long, 3 cm tall, and 6.5 cm wide

0.196 g/cm^3


The Density of Pennies

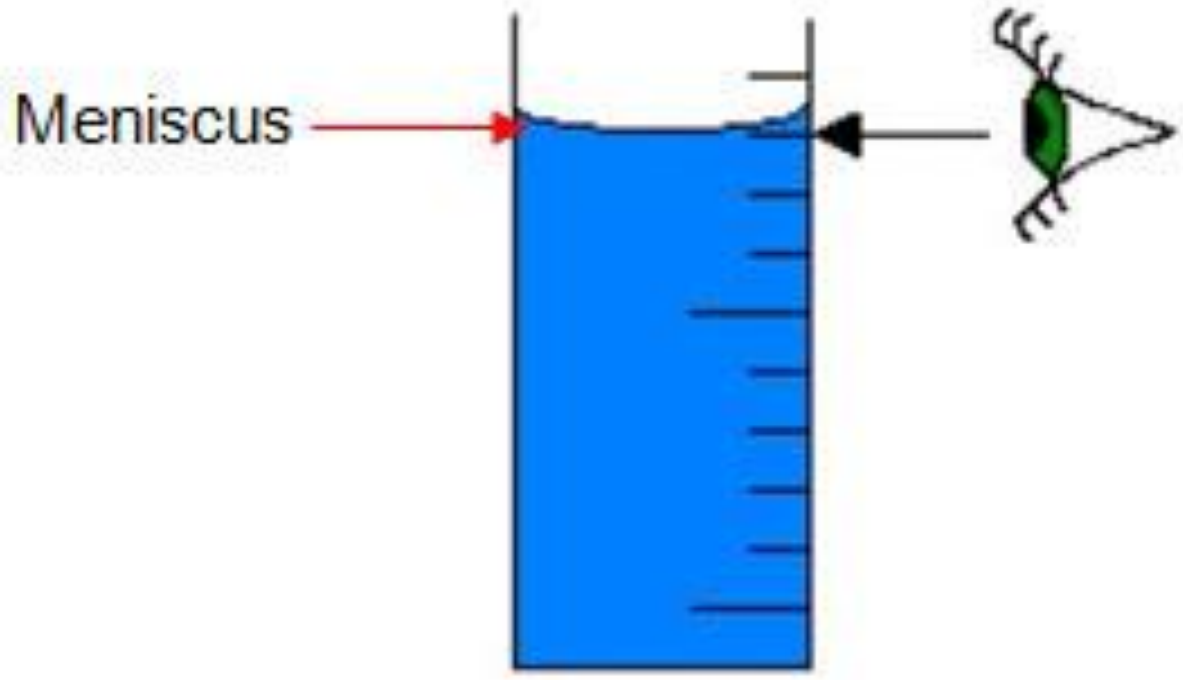
Not all pennies are the same!

Some are 95% copper and 5% zinc

Some are 2.4% copper and 97.6% zinc

Using a Graduated Cylinder

Read from eye level at the bottom of the meniscus!!!!!!!



GROUP #	PRE-1982 % error	POST-1982 % error
1		
2		
3		
4		
5		
6		
7		
8		

Calculating % Error

$$\% \, \boldsymbol{Error} = \frac{|\boldsymbol{Accepted\ Value\ - Your\ Value}|}{\boldsymbol{Accepted\ Value}} \, \boldsymbol{x\ 100}$$