

Do Now: Label Left and Right sides
“Conductivity” and copy data on LEFT SIDE

Elapsed Time (min)	Temperature (°C)		Elapsed Time (min)	Temperature (°C)		Elapsed Time (min)	Temperature (°C)
0	-5		22	18		44	85
2	-5		24	24		46	91
4	-4		26	30		48	97
6	-3		28	36		50	100
8	-1		30	42		52	100
10	0		32	48		54	100
12	0		34	54		56	100
14	0		36	60		58	101
16	0		38	66			
18	6		40	72			
20	12		42	78			

SUBSTANCE	Results- Did it LIGHT? Y/N	CONDUCTOR OR INSULATOR?
Alloy		
Water		
Salt Water		
Copper		
Glass		
Wood		
Graphite		
Aluminum		
Plastic		

- What do conductors/insulators have in common?
- Which part of the atom interacts with current flow?
- If you have a longer copper wire, what happens to conductivity?
- If you have a thicker piece of wood, what happens to conductivity?

- Why is it that water DOES NOT conduct electricity but salt water does?
- What would happen if you ran a larger current through the plastic?

- Time Lapse Heating Curve of Water



Physical Properties

CONDUCTIVITY, BOILING, MELTING, FREEZING POINTS

Physical Properties

A physical property is an characteristic of matter that can be observed or measured without changing it.

Examples:

Physical Properties include:

- Conductivity
- Boiling Point
- Freezing Point
- Melting Point
- Density
- Magnetism

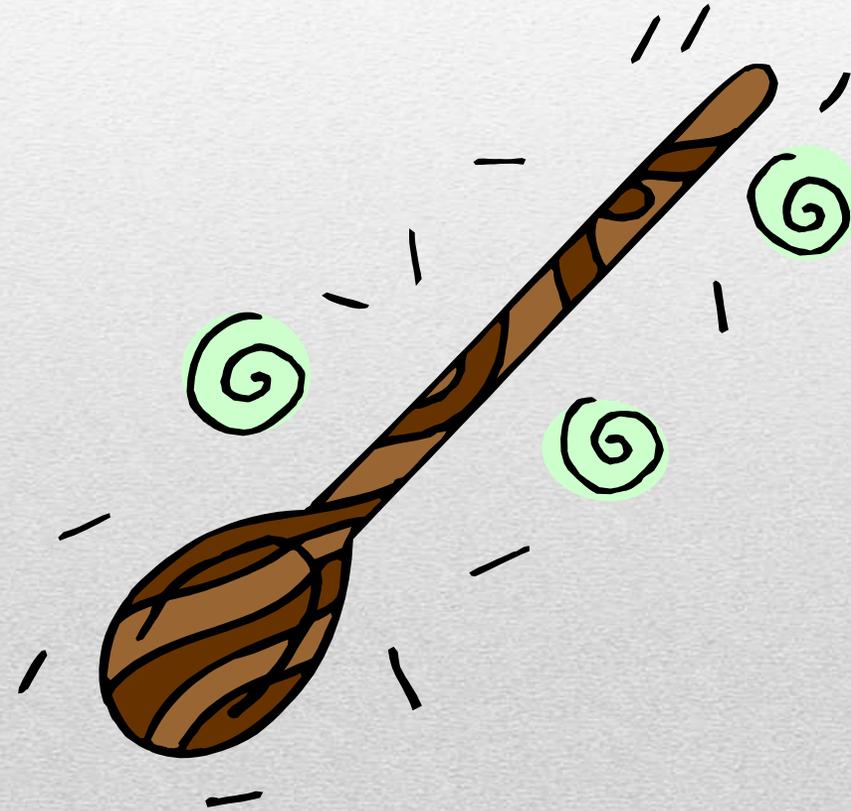
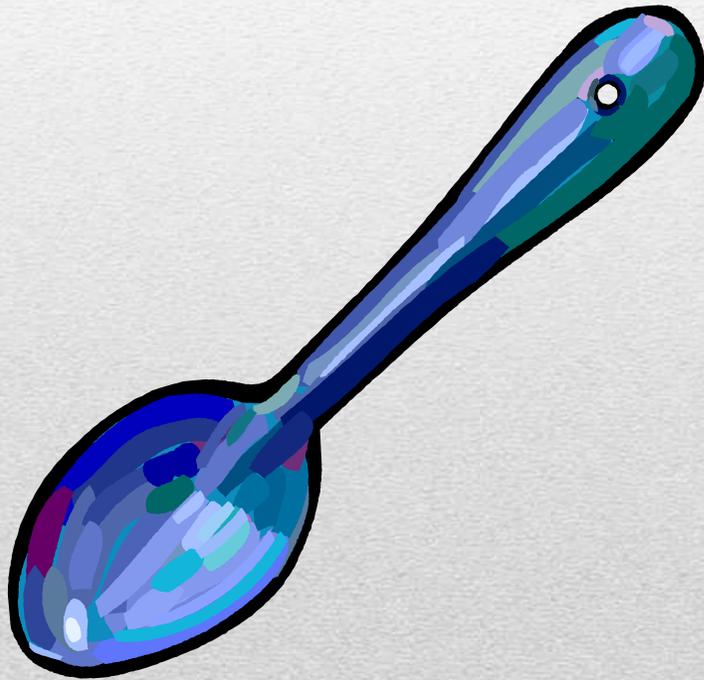
Physical properties such as those listed here are **independent of sample size**.

This means that no matter how big or small a piece of this matter is, this physical property does not change.

For example: a cup of water's density of 1.0g/mL and a gallon of water's density is 1.0g/mL.

Conductivity

If you had to choose whether to stir a pot of boiling water with a wooden spoon or metal spoon, which one would you pick? Why?



Conductivity

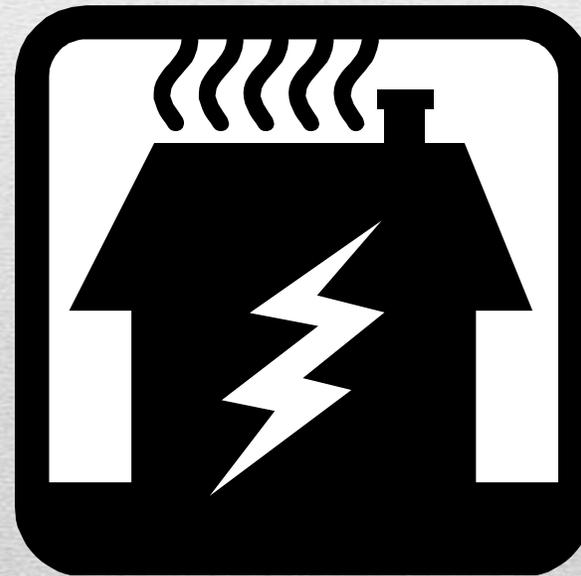
The rate at which **heat and electricity passes through** a material.

The most common conductors are metals.

Materials that do not pass electricity and heat are called **insulators**.



HEAT



ELECTRICITY

Melting Point

The temperature at which a substance changes from a solid to a liquid

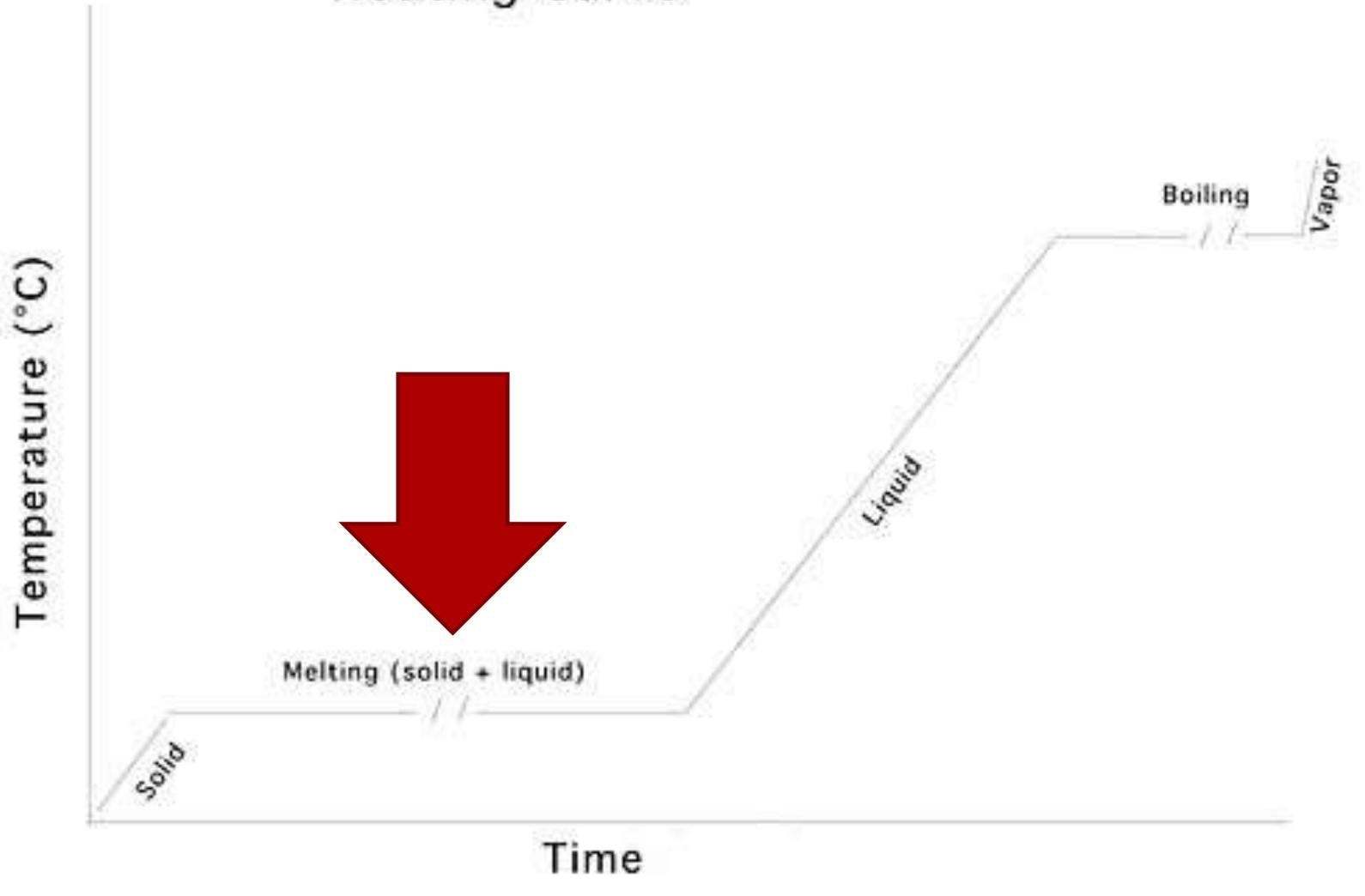
Melting Point of Water= above 0°C



Time Lapse Ice Melting

- Ice Melting
 - Ice melts above 0°C (32°F)
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Heating Curve



Melting Point

Boiling Point

The temperature at which a substance changes from a liquid to a gas.

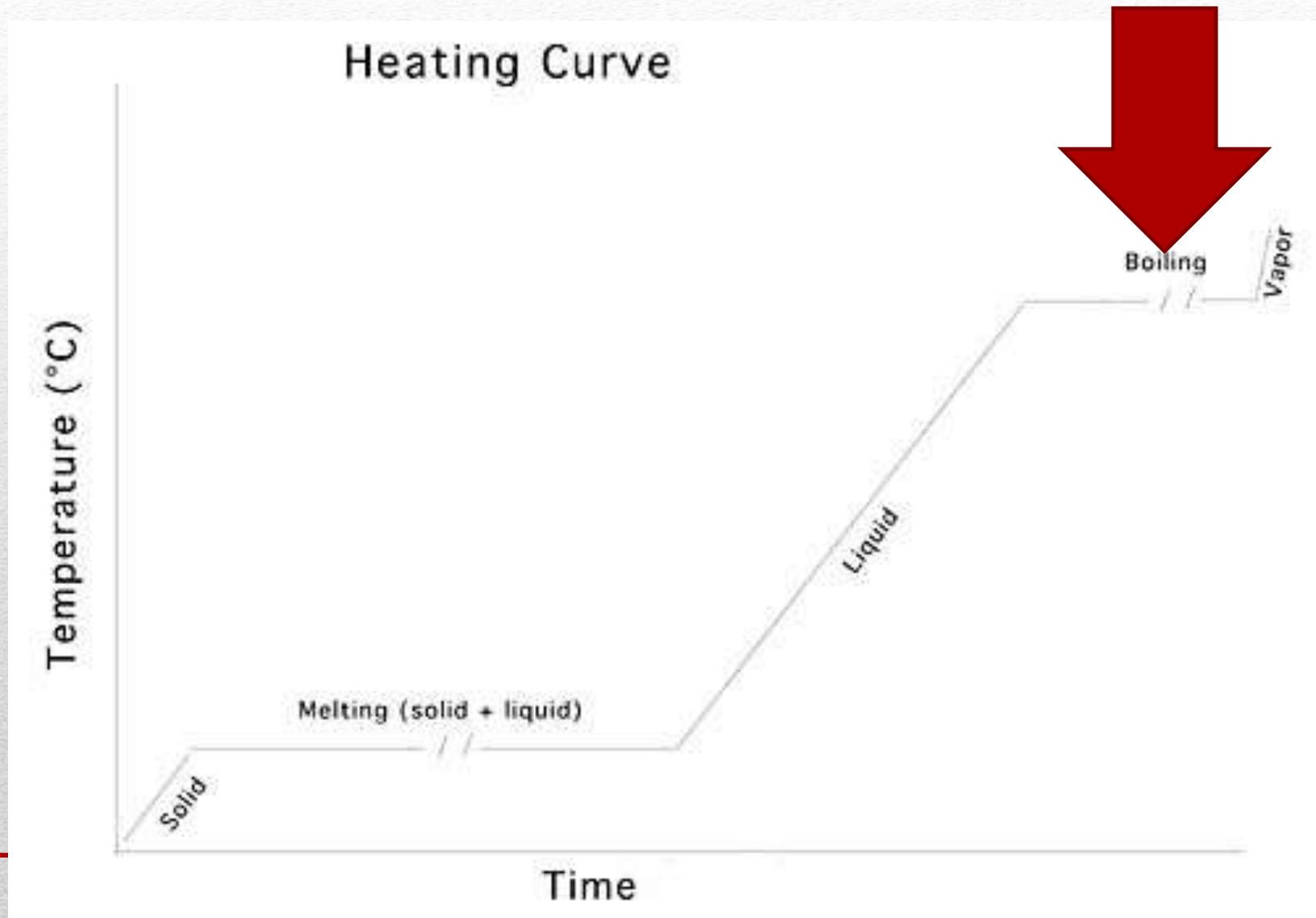


Water=100° C

Video Clip: Liquid Nitrogen Boiling

- Boiling Liquid Nitrogen
 - Liquid Nitrogen boils at -196°C (-320°F)
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Boiling Point



Freezing Point

- Freezing Point – The temperature at which liquid matter turns to solid

