

## Kinetic theory of matter:

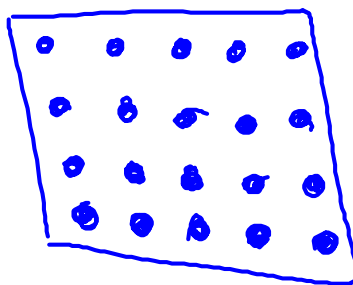
ALL MATTER IS MADE OF TINY PARTICLES THAT ARE ALWAYS IN MOTION.

- HEAT MAKES PARTICLES MOVE FASTER
- FASTER PARTICLES SPREAD APART FROM EACH OTHER
- ABSOLUTE ZERO (0 K) ALL PARTICLE MOTION STOPS

Solids: STATE OF MATTER WITH A  
DEFINITE SHAPE AND DEFINITE VOLUME.

CRYSTAL SOLIDS = ATOMS ARRANGED IN A PATTERN

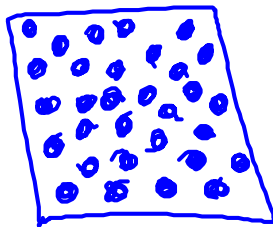
EX. ICE                      ALUMINUM  
DIAMOND  
GOLD                      SUGAR  
SALT



## Amorphous Solids:

DON'T HAVE A REGULAR ATOMIC  
STRUCTURE

"THICK LIQUIDS"



PLASTICS

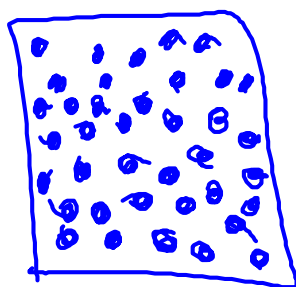


GLASS



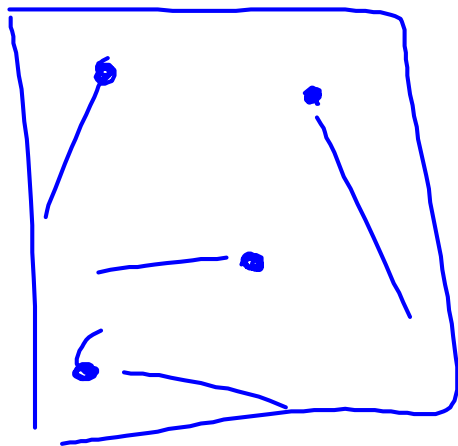
Liquids: STATE OF MATTER WITH A  
DEFINITE VOLUME BUT NO DEFINITE SHAPE

TAKE THE  
SHAPE OF  
THEIR CONTAINER



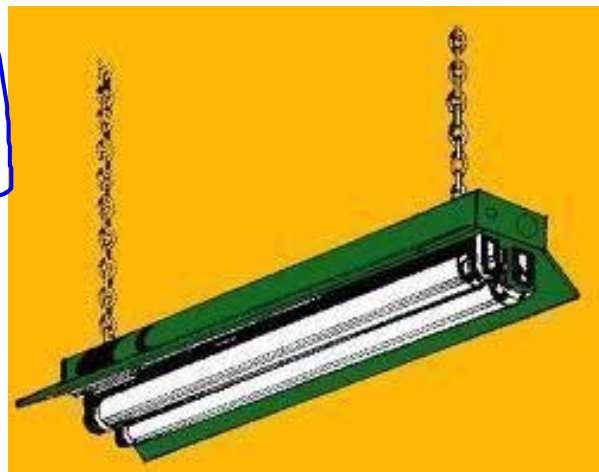
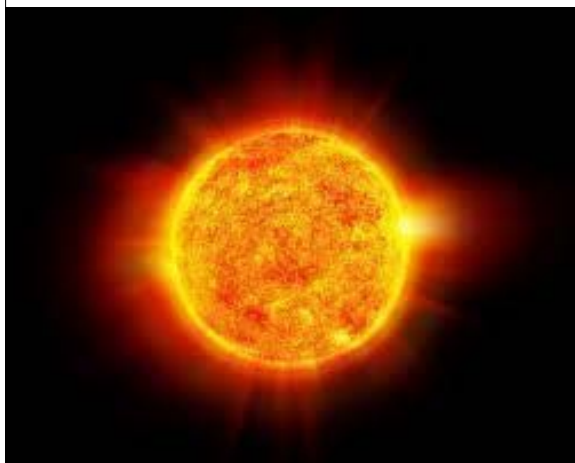
Gas: STATE OF MATTER WITH NO DEFINITE  
SHAPE OR VOLUME.

- GAS CAN BE COMPRESSED OR EXPAND TO FILL A CONTAINER



Plasma: GAS LIKE MIXTURE OF  
CHARGED PARTICLES

MOST COMMON STATE OF MATTER  
IN THE UNIVERSE



## Changes of State:

Do now: list the 3 common states of matter

SOLID  
LIQUID  
GAS

<b>PERT</b>	TIME	TEMP.	
	0	-1°C	ICE
	2	0°C	
	4	0°C	SOME ICE
	6	5°C	ICE IS GONE
	8	15°C	
	10	65°C	
	12	100°C	STEAM FORMING

TIME	TEMP
14	100°C
16	100°C
18	100°C
20	100°C
22	100°C
24	100°C
26	100°C
28	100°C



PER 7

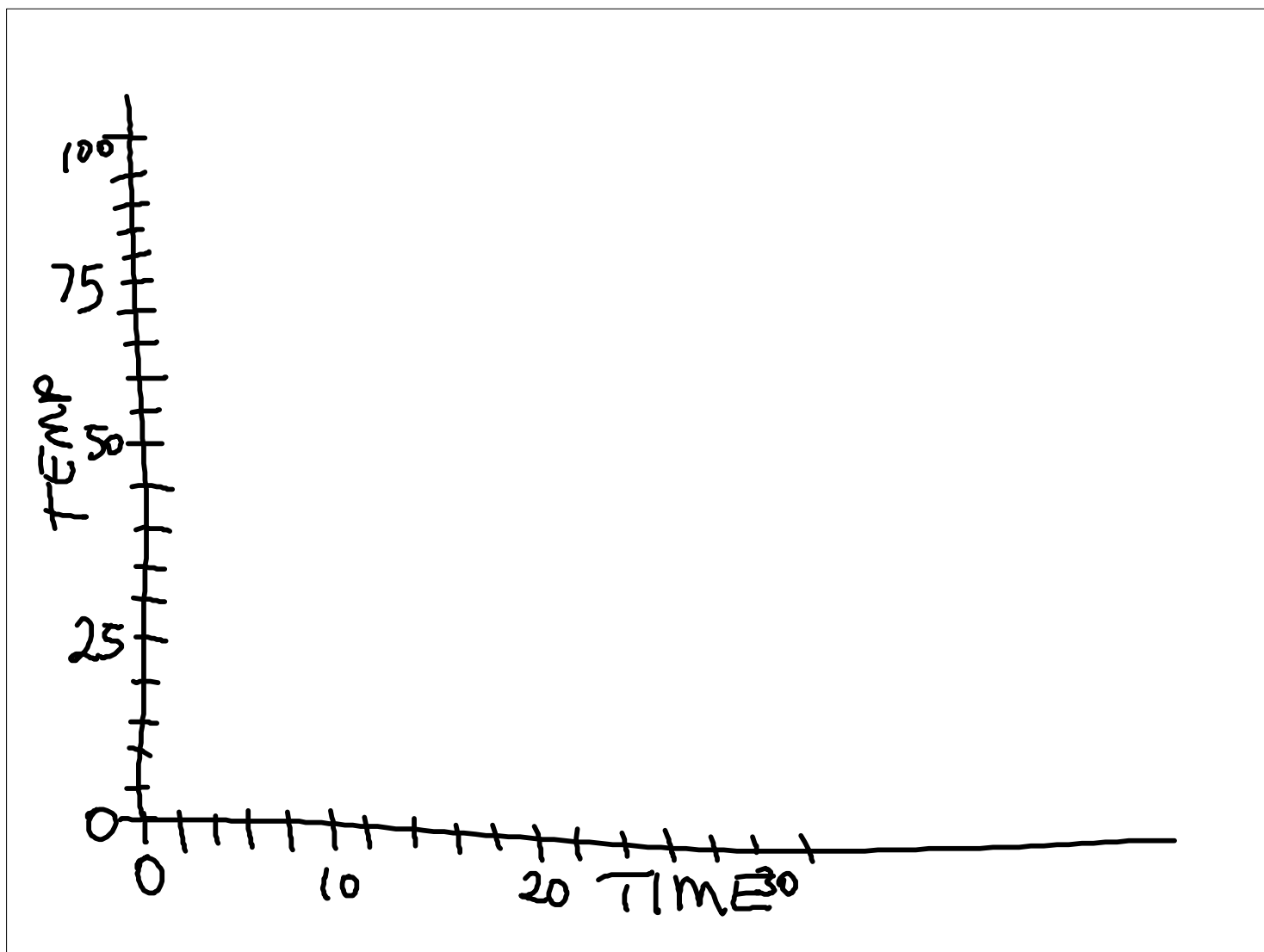
TIME	TEMP
0	-1°C
2	0°C
4	0°C
6	0°C
8	22°C
10	55°C
12	62°C
14	76°C

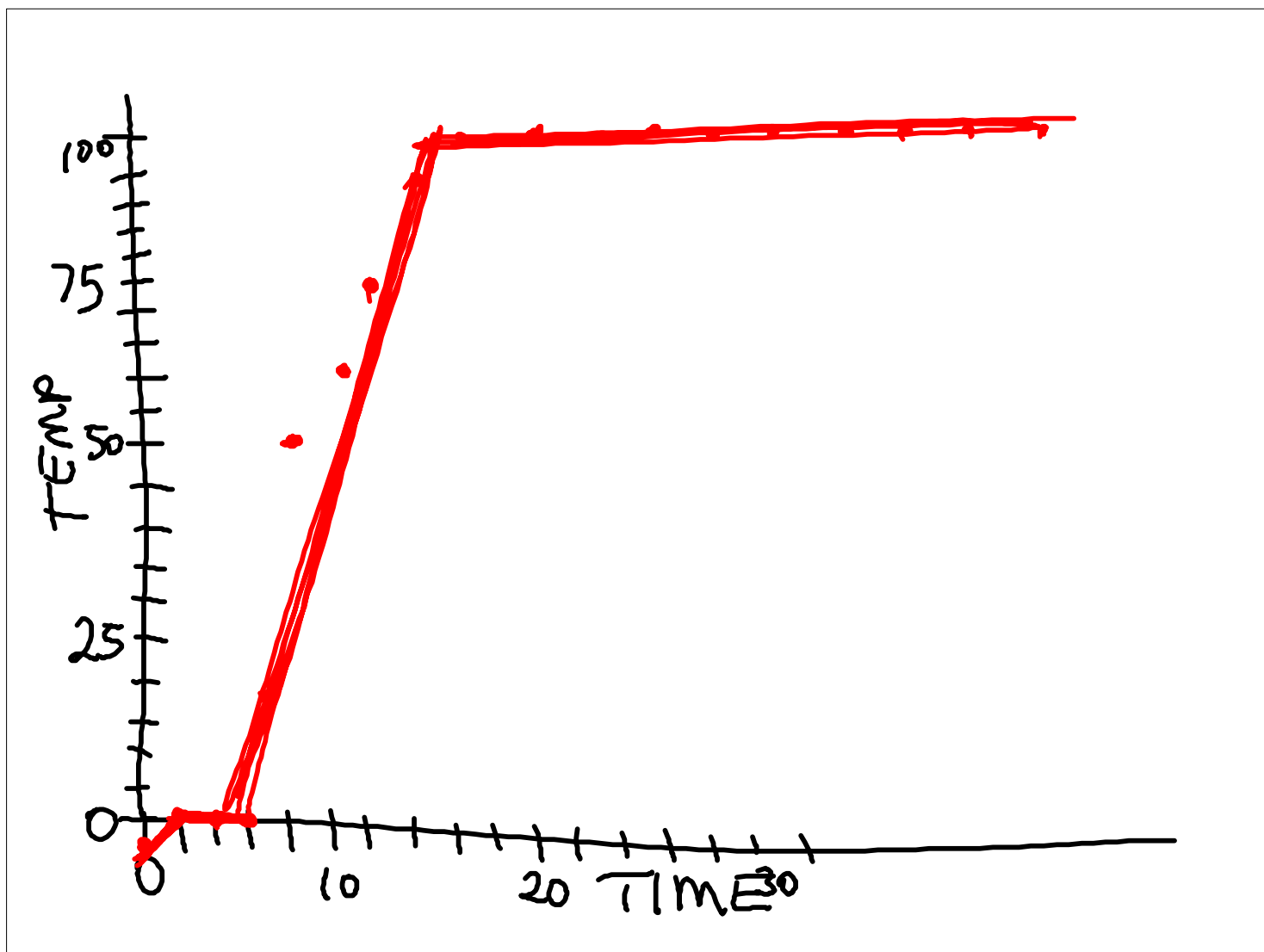
TIME	TEMP
16	91°C
18	100°C
20	100°C
22	100°C
24	100°C
26	100°C
28	100°C
30	100°C

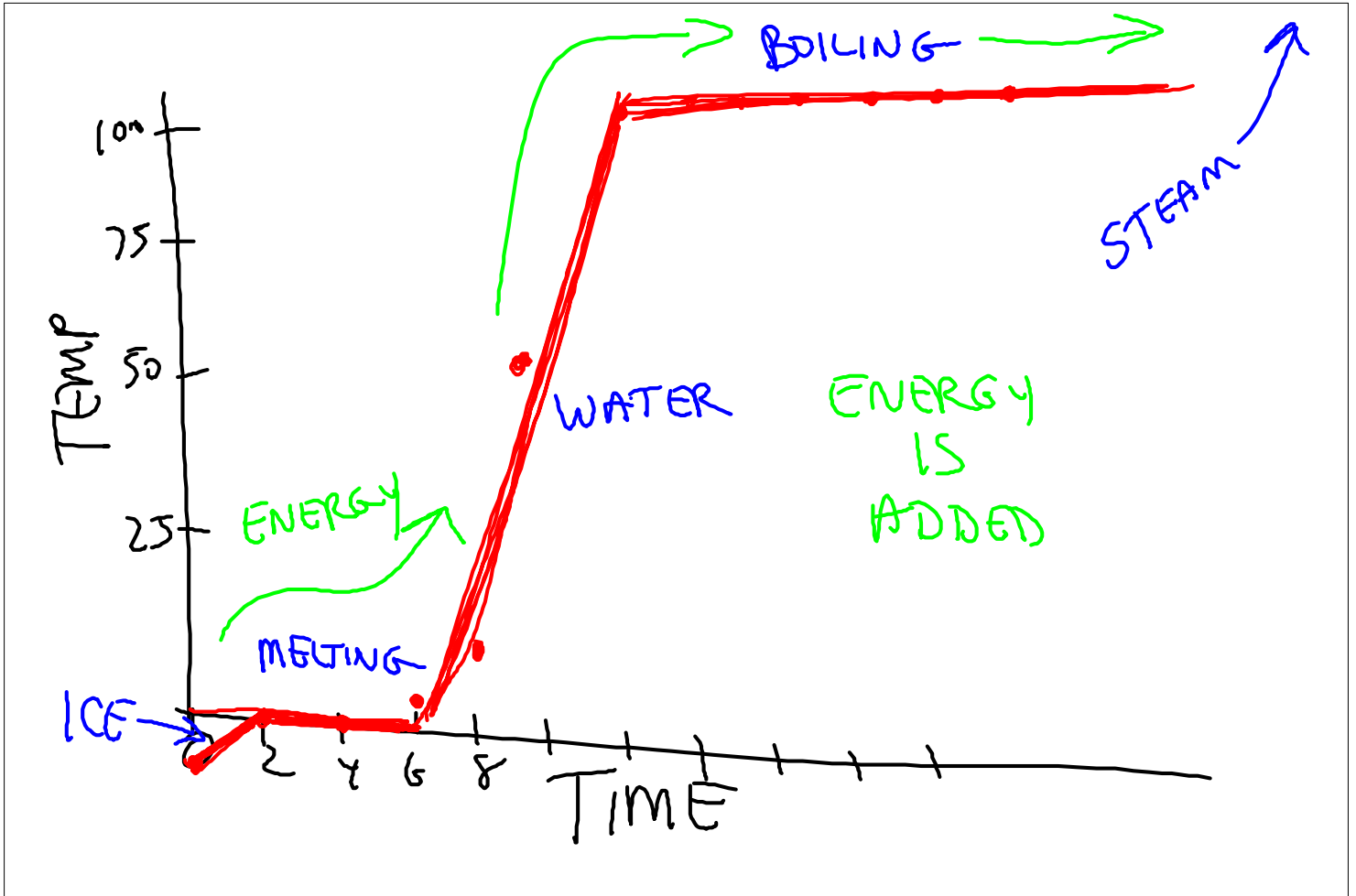
PER 9

TIME	TEMP
0	-1°C
2	0°C
4	0°C
6	0°C
8	15°C
10	47°C
12	68°C
14	86°C

TIME	TEMP
16	94°C
18	98°C
20	100°C
22	100°C
24	100°C
26	100°C
28	100°C
30	100°C







MELTING - CHANGING FROM A SOLID  
TO A LIQUID.



EX. ICE CUBES MELT  
ENERGY IS ADDED



FREEZING - CHANGING A LIQUID  
TO A SOLID.



EX. PONDS FREEZE IN WINTER  
ENERGY IS REMOVED

BOILING - CHANGING FROM A LIQUID TO A GAS.



EX. BOILING WATER ON A STOVE  
ADDING ENERGY

CONDENSING - CHANGING FROM A GAS TO A LIQUID



EX. STEAMED MIRROR AFTER A SHOWER  
ENERGY IS REMOVED



EVAPORATING → CHANGING A LIQUID TO A GAS (BELOW THE BOILING POINT TEMPERATURE). HAPPENS SLOWLY.  
EX. PUDDLES DISAPPEAR  
ENERGY IS ADDED



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SUBLIMATION — CHANGING FROM A SOLID TO A GAS DIRECTLY.

DRY ICE



FREEZER BURN



ADDING ENERGY



DEPOSITION - TURNING A GAS INTO  
A SOLID DIRECTLY

ENERGY  
IS REMOVED



## Thermal Expansion:

MOST MATTER EXPANDS WHEN HEATED  
AND CONTRACTS WHEN COOLED

\* WATER DOESN'T FOLLOW THIS RULE.  
WATER EXPANDS WHEN IT FREEZES

