

≡ Matter ≡

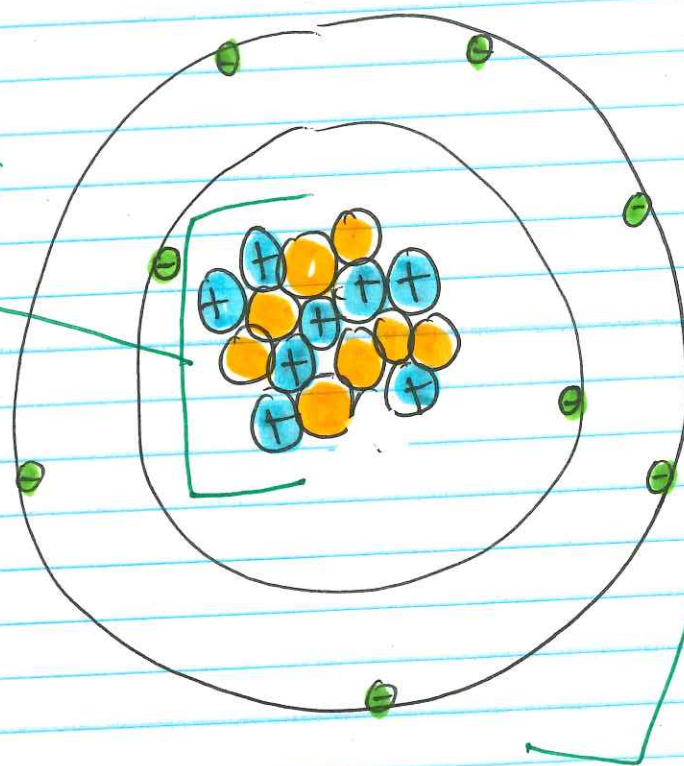
atom - the smallest part of matter

matter - anything that has mass and volume (takes up space)

★ Things that are NOT matter:
energy (sound, light, heat)
space (vacuum).

An oxygen Atom

nucleus



Key

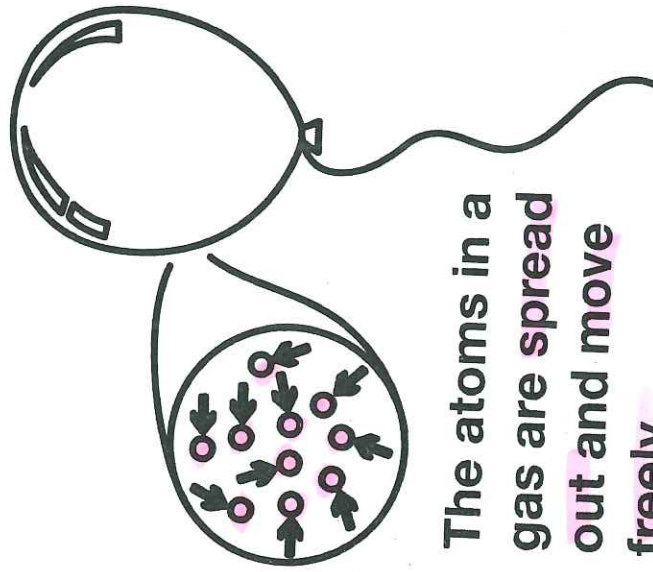
⊕ proton

● neutr

• electr

electro
cloud

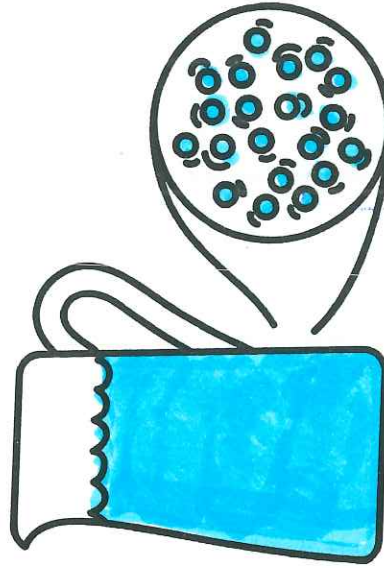
Gas



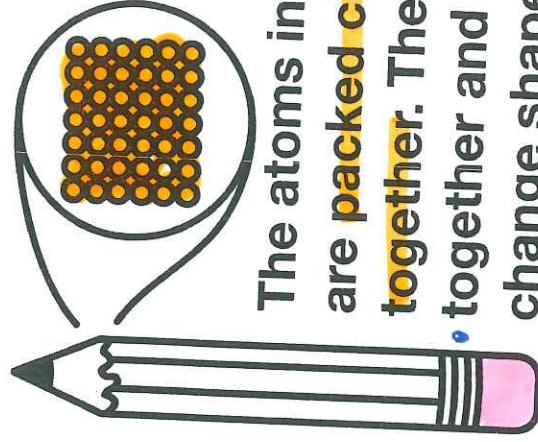
The atoms in a gas are **spread out** and **move freely**.

Liquid

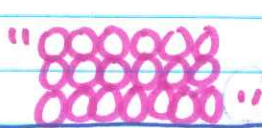
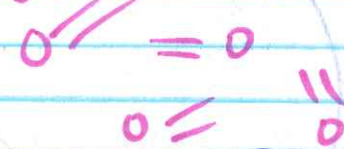
The atoms in a liquid are **close together**. They **slide around**.



Solid



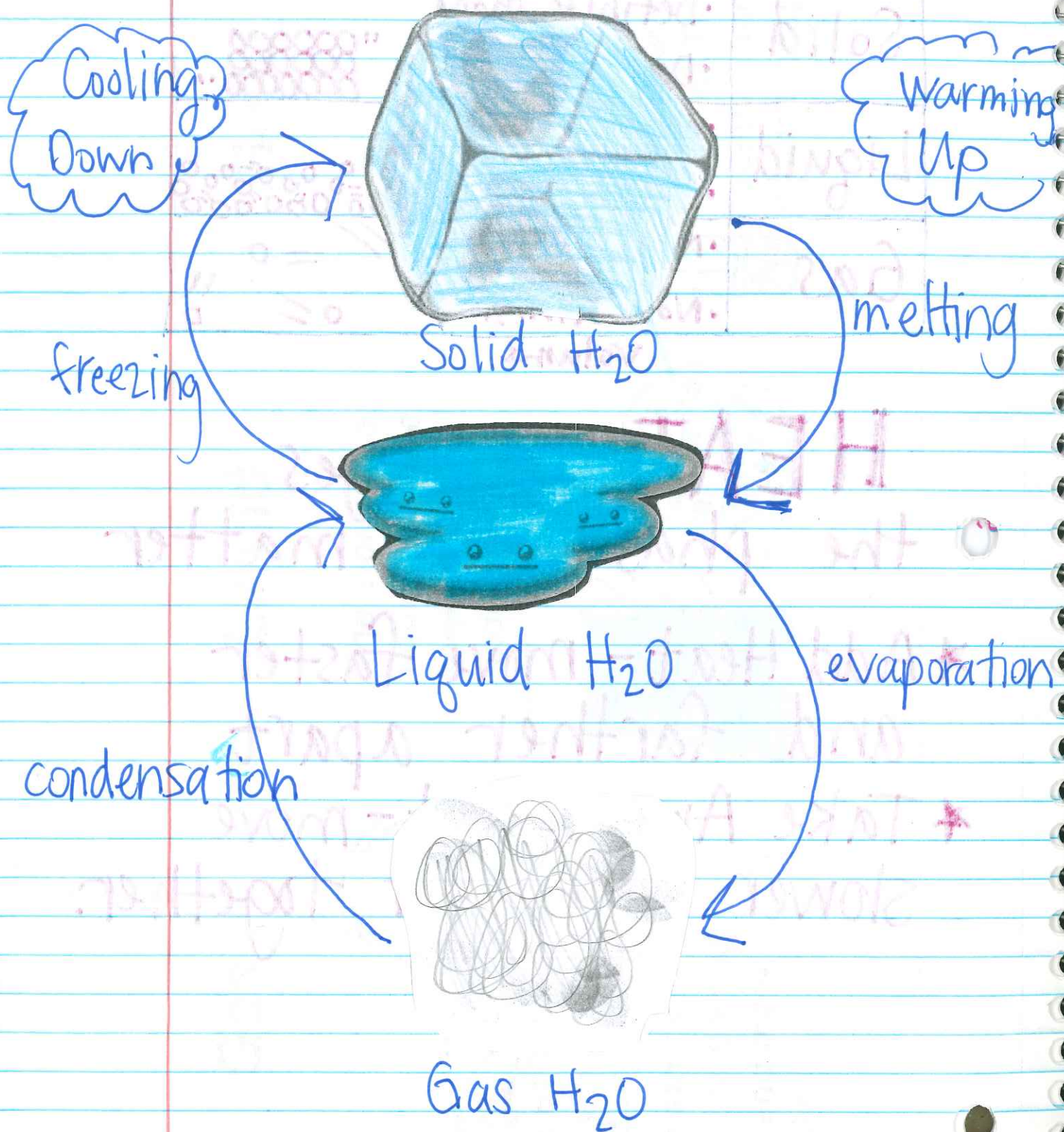
The atoms in a solid are **packed closely together**. They **bond together** and do not change shape.

Phase	Definition	Picture
Solid	• Definite shape • Definite Volume	
Liquid	• No definite shape • Definite Volume	
Gas	• No definite shape • No definite volume	

HEAT → changes the phases of matter

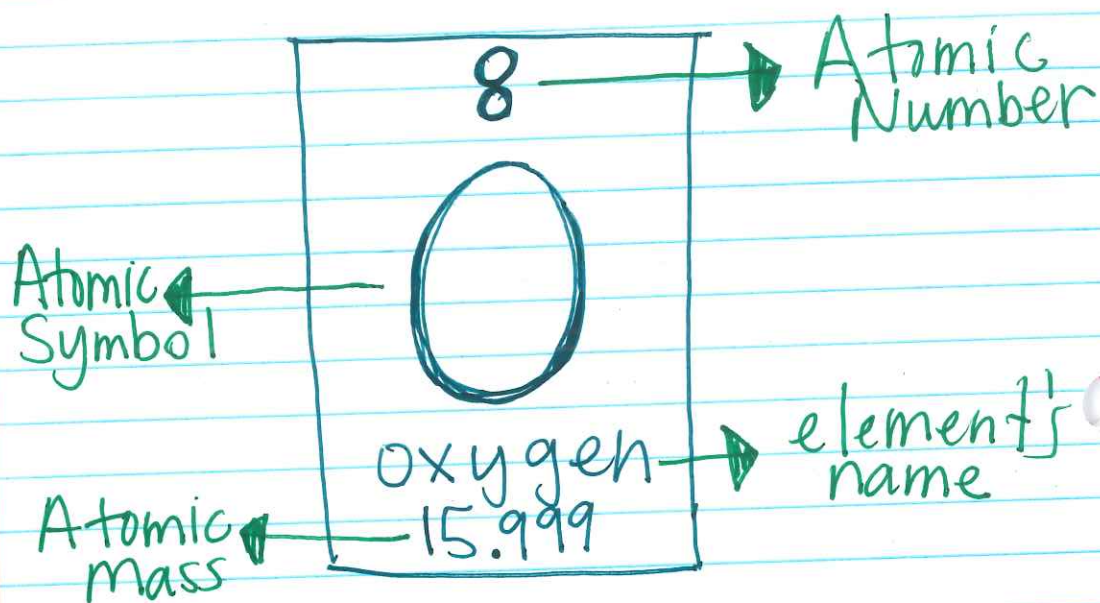
- ★ Add Heat - move faster and farther apart
- ★ Take Away Heat - move slower and closer together.

Changing States of Matter



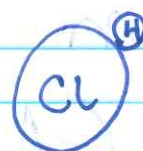
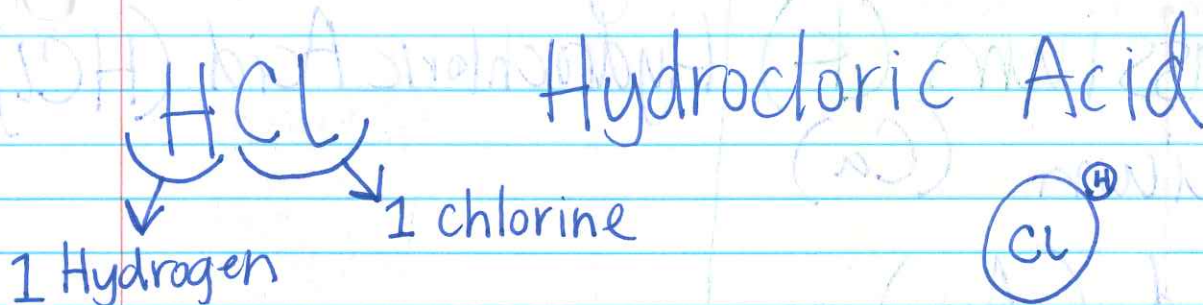
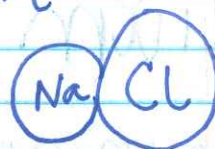
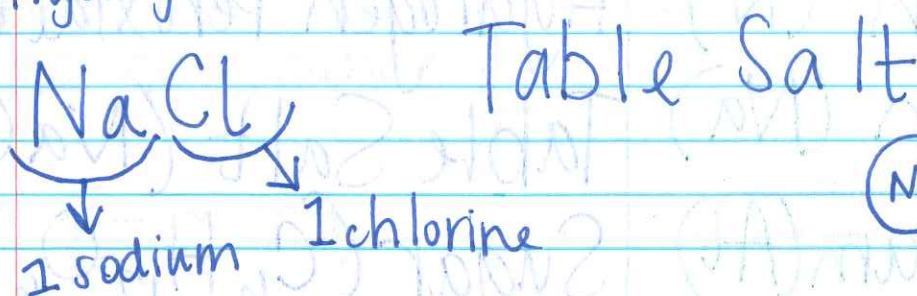
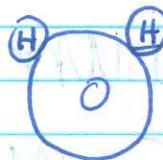
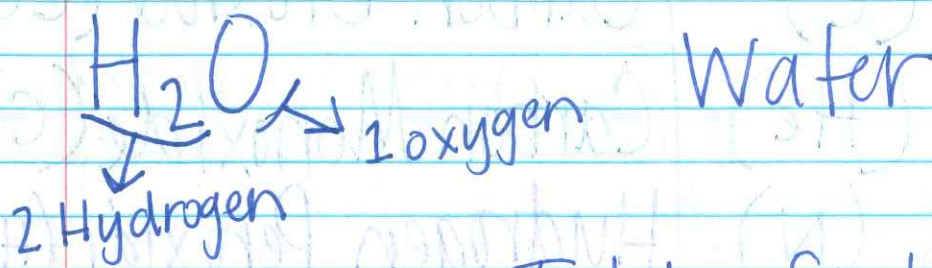
The Periodic Table

- * A way to organize all of the known elements.
- * There are over 100 elements.

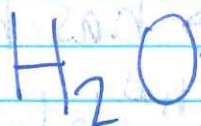


Compounds

More than one type of atom/element bonded together.

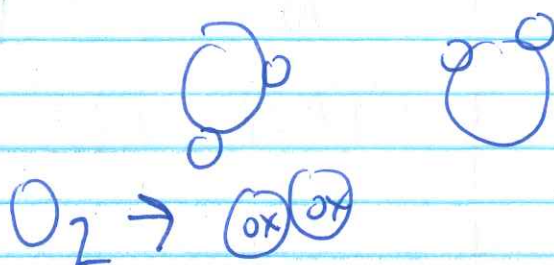
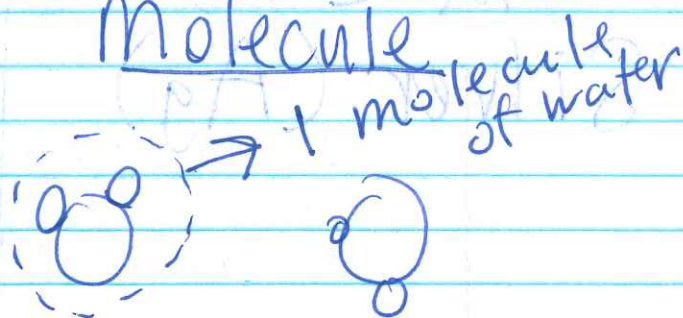


Compound



at least 2
different atoms

Molecule



Elements

Hydrogen (H)

Carbon (C)

Helium (He)

Nitrogen (N)

Sodium (Na)

Aluminium (Al)

Potassium (K)

Calcium (Ca)

Gold (Au)

Silver (Ag)

Compounds

Water (H_2O)

Carbon Dioxide (CO_2)

Carbon Monoxide (CO)

Hydrogen Peroxide (H_2O_2)

Table Salt (NaCl)

Sugar ($C_6H_{12}O_6$)

Hydrochloric Acid (HCl)

* oxide $\rightarrow$ has oxygen

* hydro $\rightarrow$ has hydrogen

* chlor $\rightarrow$ ^{has} chlorine

Mixtures

Two or more substances mixed together.

Substances keep physical properties

(The molecules do not change)



Trail mix

Fruit salad

Pencil Box

Salad

Laundry Basket

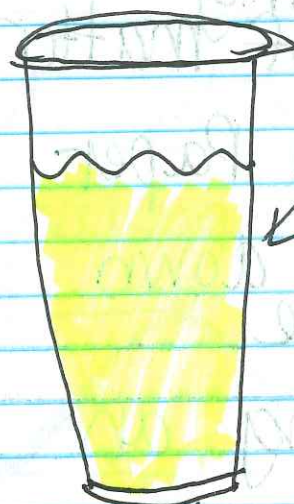
Nacho

Solutions

A special mixture

→ Remain same.

The substances dissolve.



lemon
 H_2O
sugar

lemonade

smoothie

Salt water

Kool-aid

Sugar water

Physical Change

A change where molecules remain the same.

Examples

- Mixtures and solutions
- Changing states of matter
- Ripping Paper
- cutting down a tree
- cracking an egg

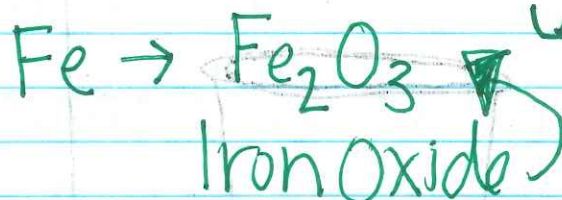
Chemical Change

A change where the molecules change.

→ molecule will be different!

Examples

- Iron rusting



- Burning a Tree
- Mold/Bacteria decomposing
- cooking food
- digestion
- burning gas (in a car)