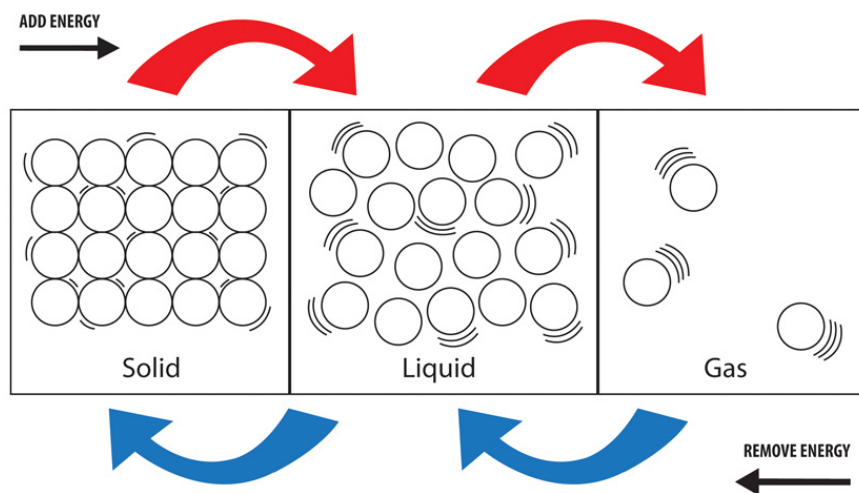


## Station 1: States of Matter

### Properties of states of matter:

Solid	Liquid	Gas
<ol style="list-style-type: none"> <li>Keeps the same shape &amp; volume</li> <li>Molecules packed together tightly</li> <li>Molecules shake/vibrate constantly, but don't move apart from each other</li> </ol>	<ol style="list-style-type: none"> <li>Takes the shape of its container, but keeps the same volume</li> <li>Molecules are touching each other, but have enough energy to move around</li> <li>As molecules gain energy, they move faster</li> </ol>	<ol style="list-style-type: none"> <li>Changes shape and volume all the time</li> <li>Molecules have so much energy, they can move apart from each other as much as they want</li> <li>Might bounce into each other sometimes, but mostly don't touch</li> </ol>



## Station 2: History of the atom

Scientist	Ideas about atoms
Dalton	<ul style="list-style-type: none"> <li>-Atoms are tiny spheres that can't be broken</li> <li>-Atoms of different elements are different masses</li> <li>-Atoms can stick together, but also come apart</li> </ul>
Thompson	<ul style="list-style-type: none"> <li>-Atoms are made up of electricity</li> <li>-Atoms are arranged like "plum pudding" or a chocolate muffin...the muffin part is a positive charge, and the chocolate chips are negative electrons</li> </ul>
Rutherford	<ul style="list-style-type: none"> <li>-Small core (nucleus) that is most of the mass.</li> <li>-Nucleus has protons, which are positive</li> <li>-Electrons are negative and surround the nucleus, but are far away, so the atom is mostly empty space.</li> </ul>
Bohr	<ul style="list-style-type: none"> <li>-Electrons orbit the nucleus like planets around the sun</li> </ul>

Current Scientist	<ul style="list-style-type: none"> <li>-Protons and neutrons are packed tightly together in nucleus, but still move slightly</li> <li>-Protons and neutrons are made of tinier parts called “quarks”</li> <li>-Electrons are in constant, random motion around the nucleus – in a cloud and not an orbit</li> </ul>
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### Station 3: Parts of an atom

Part 1: Proton	Part 2: Neutron	Part 3: Electrons
<ol style="list-style-type: none"> <li>1. Located in the nucleus</li> <li>2. Positive charge</li> <li>3. Number of protons tells which element the atom comes from (atomic number),</li> <li>4. An atom can't change how many protons it has</li> </ol>	<ol style="list-style-type: none"> <li>1. Located in the nucleus</li> <li>2. No charge</li> <li>3.</li> </ol>	<ol style="list-style-type: none"> <li>1. tiny: about 1/2000 the size of a proton or neutron</li> <li>2. Negative charge</li> <li>3. In constant, random motion around the nucleus – called “electron cloud”</li> <li>4. Atoms bond when they don't have enough or if they have too many electrons</li> </ol>

### Station 4: All about bonding

Describe the idea of “happy atoms.” What do “happy atoms” want?

Atoms are “happy” if they have a full outer ring of electrons.

What do “happy atoms” do to get “happy?”

If an atom does not have a full outer ring of electrons, it might steal, give away, or borrow electrons from other atoms. When this happens, the atoms stick together and it's called bonding.

What are the two kinds of bonds?

Covalent : The bond that forms when atoms share electrons

Ionic : The bond that forms when atoms borrow electrons

Station 5: Why Particles?

**Splashing water:** Water can splash apart and come back together easily, so it must be made of smaller pieces that can disconnect and reconnect

**Flat Tire:** Even though I can't see the air, I know it's there and made of something, because it's taking up space inside the tire.

**Drying in the sun:** Water slowly evaporates, but not all at once, so it must be able to become water vapor one piece at a time.

**Smell of dinner:** To smell something, small pieces have to enter your nose. These pieces are too small to be seen.

**Mowing grass:** Living things grow piece by piece, and when they grow too much, can be cut into smaller pieces.

**Candle:** The wick burns and seems to "disappear," but I know that matter can't be destroyed, so it must be in a different form, too small to be seen

**Paper:** can be torn into smaller and smaller pieces

**Balloon:** Air takes up space inside the balloon. I can feel it even if I can't see it.

**Vinegar:** To smell something, small pieces have to enter your nose. These pieces are too small to be seen.

**Baking Powder:** A solid broken into many smaller pieces, and can then be broken into smaller pieces.

Station 6: Making compounds: WE WILL GO OVER THIS AS A CLASS

I made:	Scientific Name:	Chemical Formula	Uses/properties

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