

## ESSENTIAL LEARNINGS: YOU'VE GOT POTENTIAL



**Glue this side into your notebook**



1. \_\_\_\_\_ is the ability to do work. This means that it has the ability to move or change things.
2. Energy cannot be \_\_\_\_\_ or \_\_\_\_\_. It can only \_\_\_\_\_ into other types of energy or \_\_\_\_\_ to other objects. The amount of energy that an object has can change because of this.
3. There are two main categories of energy. The first is \_\_\_\_\_ energy, which is energy of motion. The other type is \_\_\_\_\_ energy, which is energy that is stored and waiting to be used.
4. Potential energy is the kind of energy that an object has that is stored up and is waiting to move or change an object. If an object has \_\_\_\_\_ potential energy it means that it has more potential to move or change objects. If the amount of potential energy \_\_\_\_\_, it means that it can't change or move objects as much anymore. For an object to have more potential energy, it had to have "gone against nature," which means that it was hard to get the object to the position or condition that it's in.
5. There are several types of potential energy. They include \_\_\_\_\_ potential energy, \_\_\_\_\_ potential energy, \_\_\_\_\_ potential energy,

\_\_\_\_\_ potential energy, and \_\_\_\_\_ potential energy.

6. Gravitational potential energy is the type of potential energy associated with \_\_\_\_\_ fields. Objects that are in the gravitational field have energy stored up in them based on the \_\_\_\_\_ they are from the object and how much \_\_\_\_\_ the object has. If the object is high up (has a greater \_\_\_\_\_) then it will have more potential energy – it can move or change things more. If it has a greater \_\_\_\_\_ then it will have more potential energy (just imagine a brick falling on you versus a marble!).
7. \_\_\_\_\_ potential energy is the type of potential energy associated with objects getting \_\_\_\_\_ or \_\_\_\_\_. When an object is pulled or squished \_\_\_\_\_ from its starting point, it has more potential energy. Imagine a bow and arrow; when the bow is pulled back farther it will be able to move the arrow farther. When an object is really \_\_\_\_\_ to pull or squish, it has more potential energy. Imagine bouncing a ball that is hard to compress; it will \_\_\_\_\_
8. \_\_\_\_\_ potential energy is the type of potential energy that is due to how atoms are arranged in substances. When the bonds are \_\_\_\_\_ to break there is more energy to move or change things. When a chemical reaction occurs,

a new \_\_\_\_\_ is made from the atoms rearranging. There are other indications that a chemical reaction has occurred, and one that is most often seen is the presence of heat (\_\_\_\_\_ energy).

9. \_\_\_\_\_ potential energy is the type of potential energy that is associated with objects in an electrical field. If objects have a \_\_\_\_\_ charge, then they have more potential to move or change things.
10. \_\_\_\_\_ potential energy is the type of potential energy that is associated with objects in a magnetic field.
11. For both electrical and magnetic potential energy, it gets a little funny with distance because it depends on what the charges/poles are. If the charges/poles \_\_\_\_\_ (same charges/poles) then there is more potential energy if they are \_\_\_\_\_. When they are close they “go against their nature” since they want to be apart. To get them close you need to put a lot of your own energy into getting them there, so based on its position it has more energy stored up. When the charges/poles \_\_\_\_\_ (opposite charges/poles) they want to be together, so to keep them \_\_\_\_\_ takes more of your own energy. Because keeping them far goes against their nature, they have more potential energy when they are far.