**4-**Electrical energy is transmitted through wires and converted into other forms of energy depending how it is used.

**3-**Kintetic energy is used to turn turbines which is mechanical energy. Turbines convert mechanical energy into electrical energy

**2-**Some water is allowed to flow through the tunnel of the dam. The stored energy turns to kinetic energy as the water moves.

**1 –** Water behind a dam has potential energy because of its position.

**EXAMPLE OF ENERGY CONVERSION**

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Energy comes in 2 general TYPES!

1. **KINETIC –** the energy of motion.
   1. **Increases as mass increases.** A bowling ball will roll faster down a hill than a soccer ball, even if they were the same size because it has more mass.
   2. **Increases as sped increases.** If two identical bowling balls were rolling along at different speeds, the faster ball would have more kinetic energy. Think which baseball would hurt you the most- being hit by one thrown at 90 mph or just tossed at you by a small child.
2. **POTENTIAL –** the stored energy that an object has due to its position or chemical composition.
   1. **The position of an object gives it potential energy.** Think of a rubber band. The further you pull it, the more potential energy it has. It’s the position of the rubberband that determines the potential energy. Would you rather somebody snap you with a rubber band pulled really tight or barely loose? A hammer that falls just 2 inches on your big toe won’t hurt as much as a hammer that falls off the table and hits your big toe. WHY?
   2. **Which would hurt the most?** Falling of your chair or falling off a roof? Belly flop from the side of the pool or belly flop from a high dive? Falling on a bunny hill ski slope or a steep ski jump? Dropping a brick 2 centimeters above your foot or dropping a brick 3 meters from your food?

**DO NOT TRY THESE THINGS AT HOME OR ANYWHERE!**

Forms of Energy

Write examples of each and draw a picture of one example.

|  |
| --- |
| Mechanical  Energy that moves objects.  C:\Users\dawn.bray\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\WM9OKNDU\MC900310946[1].wmf |
| Sound  Energy that vibrates particles in solid, liquid, gas and produces a sound.  http://www.alpcentauri.info/01SoundEnergy.gif |
| Chemical  Energy stored in chemical composition of matter and results from chemical bonds.  http://ts1.mm.bing.net/th?id=H.5008508450638820&pid=1.7 |
| Thermal  Energy from the movement of particles in an object. This movement is very fast and results in heat. |
| Electromagnetic  Energy resulting from the motion of the charged particles within atoms. |
| Nuclear  Energy stored in the nucleus of an atom. When the nucleus of an atom is split apart or 2 nuclei of 2 atoms join together, energy is released.  C:\Users\dawn.bray\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\2WXDKL3H\MC900232180[1].wmf |

The **Law of Conservation of Energy** states that energy cannot be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It can only change forms.



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In order to use **energy,** we must change it from one form into another. We must change electricity to light, sound, heat or mechanical **energy** to use it. Think about what your electrical appliances do for you when you turn them on. Even a wood fire **converts potential energy** (the log) to heat and light energy. We “make” electricity by converting falling water, nuclear energy, and fossil fuels into electricity so the energy is more useful to us in our homes.

**Energy** means the ability to cause change. The changes you see around you all depend on energy. Electricity flows from the outlet and changes into light and heat energy in a light bulb. Plants change the light energy from the Sun into chemical energy in a process called photosynthesis. We eat plants and convert them into energy for our muscles.

**Energy!!**