Conduction, Convection, and Radiation
Your Energy Assignment:

• Create a google document in your science folder
• Name the Document, Conduction, Convection, Radiation (add your first and last name, and period)-share it with Mrs. Woulf
• Read all slides in this PowerPoint and take Cornell notes in the google document
• Your Essential Question is:
• What is conduction, convection, and radiation?

• When you’re finished with the notes, write your summary. Don’t forget 5 Key ideas in 5 sentences. Add a topic sentence and a good ending sentence. Your paragraph should have a minimum of 7-10 sentences.
Heat Energy

• Energy is what makes things happen.
• All materials are made of tiny particles called molecules.
• Molecules are always moving.
• The movement creates heat.
• The amount of heat depends on how fast the molecules move.
• As the molecules move faster, they take up more space and make the object expand.
Heat Transfer

- Heat can be transferred from one object to another in 3 different ways:
  - Conduction
  - Convection
  - Radiation
Conduction

- **Heat traveling through solids.**
- Two objects must touch or have direct contact.
- As molecules heat up they move faster and expand.
- When you touch one hot surface to another, the hot molecules bump into the other molecules which makes them start to move faster.
- An object gets hotter from the movement of the molecules.
- All solid objects conduct heat, some are better conductor than others.
- Metals are good conductors.
Examples of Conduction
Convection

- **Heat traveling through liquids or gases**
- As molecules heat up, the heat makes the molecules move more rapidly and expand.
- Creates currents in liquids or gasses – hot air rises and cold air sinks.
- Uneven heating of our ocean creates ocean currents.
- Uneven heating of our atmosphere produces huge convection wind currents.
- Scientists use global and local wind patterns to predict weather.
Examples of Convection
Radiation

- Release of invisible heat energy waves from the sun or fire.
- No movement of molecules to transfer heat.
- Feel warm without touch – heat radiates.
- Radiators got their name from this type of heat.
- When the radiant energy from the sun hits the earth, the earth soaks up the energy and changes it into heat.
Examples of Radiation
Balance

• Whenever a hot object is placed near a cold object, the hot object will transfer heat to the cold object until they reach a state of balance.

• Balance happens when the temperatures of both objects are the same.

• The fast moving molecules mix with the slow moving molecules until they are all mixed and balanced.
When you’re finished with the Cornell Notes, Create a flip book on Conduction, Convection and Radiation

• Use a piece of notebook paper, and follow the directions on the following slides. Keep the flip book to hand in on Thursday.
Fold paper in half length-wise
Cut on dotted lines as shown
Fold your paper back in half with the 3 flaps that you cut on top.

Write in the following words:

CONDUCTION  CONVECTION  RADIATION
On the inside of each flap, you will write the definition of each word and draw an example of each word.