Name : _____ Score : _____

Teacher : _____ Date : _____

Converting Fahrenheit and Celsius

Convert Fahrenheit to Celsius

1) 39° F _____

2) 83° F _____

3) 65° F _____

4) 62° F _____

5) 94° F _____

6) 111° F _____

7) 34° F _____

8) 38° F _____

Convert Celsius to Fahrenheit

9) 44° C _____

10) 38° C _____

11) 9° C _____

12) 51° C _____

13) 45° C _____

14) 12° C _____

15) 23° C _____

16) 21° C _____

Did You Hear That?

There are many ways to measure sound. You are probably familiar with the musical scale—do, re, mi, fa, sol, la, ti, do. Each note is higher than the one before it. The musical scale is made up of sounds with a different pitch. **Pitch** is the highness or lowness of a sound. Pitch depends on how many times the air vibrates in a second. The number of vibrations, or back-and-forth motions, per second is called the **frequency**. Frequency is measured in hertz. A **hertz** is one vibration per second.

The faster an object vibrates, the higher the pitch. The slower an object vibrates, the lower the pitch. The human voice can make sounds that range in frequency from around 85 to 1,100 hertz. The range of frequencies a human ear can hear is around 20 to 20,000 hertz. Some animals can hear sounds that humans cannot hear. That is why, for example, there are special whistles used to call dogs. These whistles make sounds at frequencies well above the range of human hearing. Some animals also make sounds that humans cannot hear.

Sound waves move away from their source and travel in many different directions. The loudness, or **volume**, of sound decreases the farther you move away from the source. We can measure volume in units called **decibels**. Volume is determined by amplitude, or the height of the sound waves. As amplitude increases, loudness increases. A sound of zero decibels is the starting point of human hearing. A sound of over 140 decibels may damage human ears. Listening to very loud music for long periods of time can permanently reduce a person's ability to hear.

Write letters in the blanks below to match each sound word with its definition.

1. _____ the number of vibrations per second
2. _____ determined by amplitude of sound waves
3. _____ measurement of the loudness of sound
4. _____ highness or lowness of a sound
5. _____ frequency is measured by this

A. volume
B. pitch
C. hertz
D. decibels
E. frequency

Draw lines to match each sound with its average number of decibels. Remember that the louder a sound is, the greater its number of decibels.

6. a vacuum cleaner
7. a jet
8. the rustle of leaves
9. normal conversation

60 decibels
15 decibels
120 decibels
85 decibels

10. Describe the difference between pitch and volume.

_____

_____

_____

Name: _____

Forces & Motion

Directions: Write the force words that complete each sentence.

push	pull	gravity	friction	force
inertia	machine	energy	balance	Newton

1. The greater the _____ the easier the object will move.
2. To do the job in less time and with less energy, use a _____
3. That rock will roll down the hill due to the force of _____
4. To make something _____ both ends need to have the same weight.
5. It takes _____ to get a job done.
6. _____ is the idea that something in motion will remain in motion, and something at rest will remain at rest, unless affected by an outside source.
7. It would be more difficult to _____ a wagon if it didn't have wheels.
8. If you have a few people _____ on the rope, the box will be easier to move.
9. _____'s theories on motion are still believed correct today.
10. We added wheels to our bureau to create less _____ when we move it.

"INTRODUCTION TO ENERGY" WORKSHEET

Name_____

Date _____

Block_____

Part 1. The two basic types of energy

Directions: Determine the best match between basic types of energy and the description provided. Put the correct letter in the blank.

_____1. A skier at the top of the mountain (a) Kinetic Energy

_____2. Gasoline in a storage tank (b) Potential Energy

_____3. A race-care traveling at its maximum speed (c) Both forms of Energy

_____4. Water flowing from a waterfall before it hits the pond below

_____5. A spring in a pinball machine before it is released

_____6. Burning a match

_____7. A running refrigerator motor

Part 2. Definitions of Energy.

Directions: Write down the definition for each of the following terms.

ENERGY:

KINETIC ENERGY:

POTENTIAL ENERGY:

Part 3. Forms of Energy.

Directions: Determine the type of energy for each form (Kinetic, Potential, or Both) and give an example.

Form	Definition	Type (KE, PE, or Both)	Example (for each type if both)
Mechanical (motion) energy	An object's movement creates energy		
Thermal (heat) energy	The vibration and movement of molecules		
Radiant energy	Electromagnetic waves		
Electrical energy	Movement of electrons		
Chemical energy	Stored in bonds of atoms and molecules		
Nuclear energy	Stored in the nucleus of an atom; released when nucleus splits or combines		
Sound energy	Vibration of waves through material		
Gravitational energy	Energy of position or height		

Part 4. Forms of Energy Continued

Directions: Match the energy form(s) to the description provided. A few questions may have more than one answer.

_____1. Falling rocks from the top of a mountain (a) Mechanical

_____2. Release of energy from the Sun (b) Electrical

_____3. Energy released from food after it is eaten (c) Heat

_____4. Batteries (d) Radiant

_____5. The energy that runs a refrigerator (e) Chemical

_____6. Nuclear fission reactors (f) Nuclear

_____7. The rumble of thunder from a storm (g) Sound

_____8. Rubbing your hands together

_____9. Gasoline

_____10. Food before it is eaten

_____11. Lightening

Part 5. Transformation of Energy

Directions: Use the following forms of energy to fill in the table below: **mechanical, electrical, heat, radiant, chemical, nuclear, and sound**. The first one has been done for you.

	ORIGINAL ENERGY FORM	**FINAL ENERGY FORM**
1. Electric motor	electrical	mechanical
2. A battery that runs a moving toy		
3. A solar panel on the roof of a house		
4. A person lifting a chair		
5. A nuclear power plant		
6. A toaster		
7. A church bell		
8. Gasoline powering a car		
9. A light bulb		
10. Photosynthesis		