Types of energy

due on Monday Week 2

2a

There are two groups of energy forms: moving energy or energy in action and potential or stored energy. The potential energy needs to be triggered; then it could change into moving energy, which travels away.

Then there are many energy forms, such as chemical energy, elastic energy, electric energy, gravitational energy, heat energy, light energy, mechanical energy, nuclear energy and sound energy.

1 Draw straight lines with a ruler to match each energy form with its correct definition. Then in the last column, write 'moving' or 'potential' to show which energy group it belongs to.

Energy form	Definition	Energy group
a Chemical	Electrons travelling through a conductor	Electric
b Elastic	Energy in objects being held up high	Gravitational
c Electric	Energy stored in a stretched or compressed material	Elastic
d Gravitational	Energy stored inside molecules	Chemical
e Heat	Energy stored inside the nucleus of atoms	Nuclear
f Kinetic	Infra-red waves travelling away from hot objects	Heat
g Light	Light waves travelling away from coloured objects	Light
h Nuclear	Sound waves travelling through matter	Sound
i Sound	Things that are moving	Kinetic

2 List all the energy forms from question 1 under the correct energy group.

Moving	Potential
Sound	Gravitational potential
Heat	Elastic
Light	Chemical
Electrical	Nuclear
Kinetic (Movement, Mechanical)	

3 State the correct energy form and energy group for each of the following situations.

Situation	Energy form	Energy group
A set spring in a wind-up clock	Kinetic (Movement) energy	Kinetic (Movement)
An inflated balloon	Elastic energy	Potential
The water in a hydro-electric dam	Electrical energy	Kinetic (Movement)
A running dog	Kinetic (Movement) energy	Kinetic (Movement)
A bright tube light	Light energy	Kinectic (Movement)
Uranium for a nuclear reactor	Nuclear energy	Potential
The red head of a match	Heat Energy	Kinetic (Movement)
The glowing bars of a radiator	Light energy	Kinetic (Movement)
A fired starting gun at a running race	Kinetic energy (Movement)	Kinetic (Movement)

Types of energy

Science homework Science homework Science homework

2b

4 Many appliances in your home convert one form of energy to other forms of energy. For each energy converter, state the initial energy form (i.e. the energy going into the appliance) and the final energy forms (i.e. the energy coming out of the appliance). Note that in most appliances, more than one final energy form is produced.

Energy converter	Initial energy form	Final energy forms
Light bulb	Electric energy	Light, Heat, Sound
Television set	Electric energy	Sound, Light
Kettle	Electric energy	Heat, Sound
Electric drill	Electric energy	Kinectic (Movement), Sound
Gas stove	Chemical energy	Sound, Heat, Light
Electric stove	Electrical energy	Sound, Heat
Food mixer	Electrical energy	Sound, Kinetic (Movement)
Petrol lawnmower	Chemical Energy	Sound,
Hand lawnmower	Chemical Energy	Sound, Kinetic (Movement)
Electric lawnmower	Electrical Energy	Kinetic (Movement), Sound
A plucked guitar string	Elastic energy	Sound, Kinetic (Movement)
Exploding fire works	Chemical Energy	Heat Light Kinetic (Movement)

5 List five appliances that produce unwanted (wasted) forms of energy as well as wanted forms of energy. Write the energy forms which are wanted and the ones which are not. One example has been done for you.

Appliance	Wanted energy form	Wasted energy form
Radio	*Sound*	*Heat*
Kettle boiling hot water	Heat	Sound
Motobike	Kinetic (Movement)	Sound, Heat
Light bulb	Light	Heat
Washing machine	Kinetic (Movement)	Sound
Gas stove	Heat	Sound

6 List the five sense organs of humans. Underline the biggest sense organ. Circle the most important one.

Eyes, nose, lips / mouth / tongue, skin, ears

7 State which sense organ in the human body can pick up the following moving energy forms.

a Light energy from the Sun Eyes

b Sound energy from a car Ears

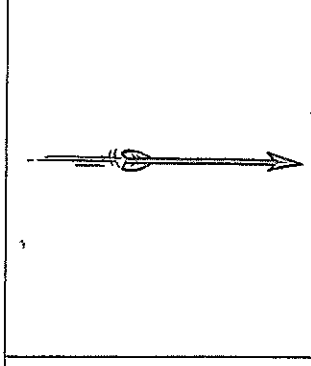
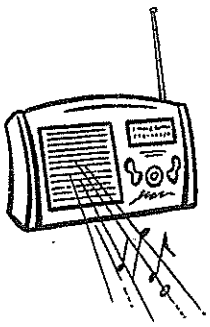
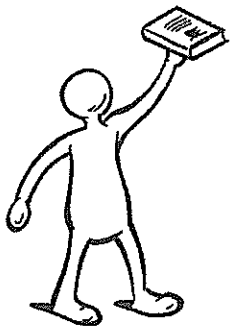
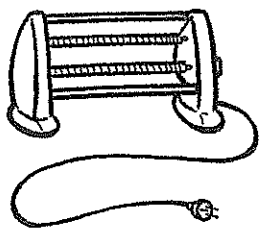
c Heat energy from the Sun Skin

d Chemical energy from a deodorant tongue

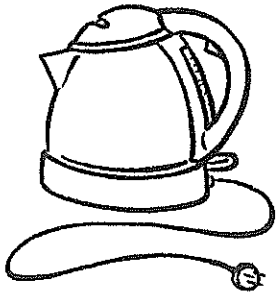
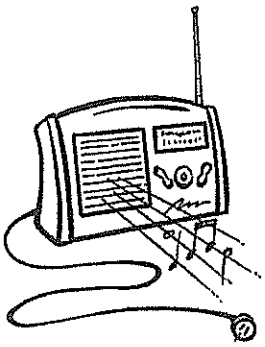
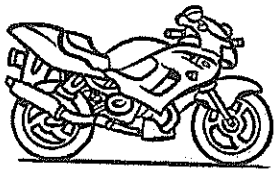
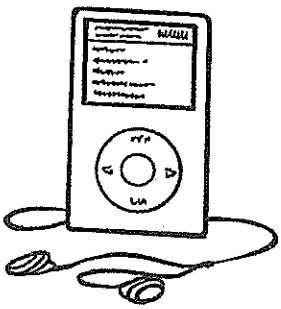
e Movement energy from a shaking head skin

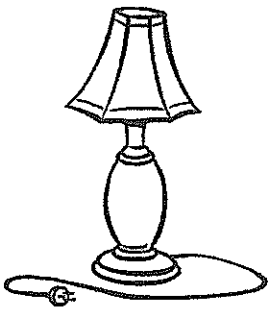
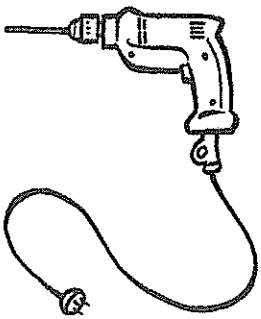
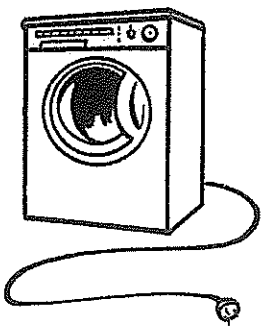
f Movement energy from wind Skin

Energy what?

			
Elastic	Electric	Chemical	Electrical
Kinetic (Movement)	Sound, Heat	Kinetic (Movement)	Sound, Heat

3 Machines and appliances change one energy form into others. Under each illustration, write the used energy form and then list the produced energy forms. One example has been done for you.

			
electric	electric energy	Chemical	Chemical
heat	sound	Kinetic (Movement)	Sound

			
Electrical	Electrical	Electrical	Chemical
Light	Kinetic (Movement)	Kinetic (Movement)	Heat, Light