5.1 Energy around you

YEAR 8 ENERGY

NAME: _____

FORM: _____

Science understanding

Verbal/Linguistic

1 There are many different forms of energy. Using the list below, **classify** which types of energy are present in each of the following situations.

kinetic energy sound energy light energy heat energy electrical energy chemical energy gravitational potential energy elastic potential energy nuclear energy

Situation	Types of energy present
(a) A racing car starts a race.	kinetic, heat, sound
(b) A rubber ball warms up in the sun.	
(c) A hot air balloon sails above some clouds.	
(d) The springs on a trampoline are stretched before it bounces upwards.	
(e) Petrol is put into a car.	
(f) A desk lamp shines brightly.	
(g) A candle burns.	
(h) A ball rolls down a hill.	
(i) A boy brushes his teeth.	
(j) A cat climbs up a tree.	

2 Kinetic energy is the energy of a moving object. Potential energy is the energy stored in an object. **Classify** each example below as having either kinetic or potential energy.

(a) A slingshot about to fire _____

(b) A ball at the highest point of a bounce _____

(c) A swimmer about to dive from a high platform _____

(d) A swimmer hitting the water from a dive _____

(e) A teenager skating along a footpath _____

(f) A hamburger with the lot sitting on a plate _____

(g) A stone rolling along a road _____

(h) A new packet of AA batteries _____

(i) A bowl of cereal with milk _____

(j) A leaf on a tree _____

5.2 Energy changes

Science understanding

Visual/Spatial Verbal/Linguistic

Energy makes things happen. When something happens, energy may be passed, or *transferred*, from one object to another. This happens when you hit a tennis ball. Some of the kinetic energy of the racquet is transferred to the ball. Energy can also be *transformed* into another type of energy. In order to hit the tennis ball, chemical energy from food that you ate was transformed into kinetic energy in your arm.

1 For each example below, the source of the energy is given. **State** the recipients of this energy and **identify** whether energy was transferred or transformed in the process.

Example	Source of energy	Receiver of energy	Is energy transferred or transformed?
(a) Tom runs in a race.	chemical energy (food)		
(b) A shirt hanging on a washing line dries in the sun.	heat energy (the Sun)		
(c) An aeroplane takes off.	chemical energy (fuel)		
(d) A golf club hits a golf ball.	kinetic energy (the club)		
(e) A cat warms up by an open fire.	heat energy (the fire)		
(f) A ceiling fan is switched on.	electrical energy		

2 An energy flow diagram is a way of showing the energy changes that happen. **Construct** an energy flow diagram for the following energy changes.

(a) A petrol lawn mower cuts some grass.

(b) A solar cell is used to operate an outside light.

(c) An electric knife is used to carve a roast.

(d) A wind-up beetle is released and scuttles across the floor.

5.9 Literacy review

Science understanding

Verbal/Linguistic

1 **Use** the clues to **identify** the missing words.

CLUE	WORD
(a) We measure energy using this unit.	j_____
(b) Energy of movement	_i_____c
(c) Energy that warms you up	____t
(d) Energy that enables us to see	l____t
(e) This energy is caused by vibrations	____nd
(f) Energy that powers a television	e___ct_____
(g) Stored energy	_ot_____
(h) Stored energy due to height above the ground is called	g____it_____ potential energy
(i) The stored energy found in food and fuel	_h_m_____
(j) Energy stored in a stretched rubber band	_____tic
(k) Energy stored inside the particles that make up matter	n_____
(l) A measure of the proportion of useful energy that is produced by a device is its...	_f_____
(m) A law that states that energy can never be created or destroyed is called the law of _____ of energy.	____s_____
(n) A label showing a number of stars that is used to compare energy efficiency of appliances is called the energy _____ label.	___t____