S1 Science
Energy and Heat - Homework

Name ……

Class ……

PROGRESS LOG – Heat & Energy

Homework	Due Date	What did I do well?	What do I need to improve upon?	Have I corrected my mistakes?	Parent signature
1. Energy Changers					
2. Generating Energy					
3. Heat Transfer					

End of Unit Assessment percentage:

Where are my 'learning gaps'?

How will I 'fill' them?

Energy and Heat Homework 1 – Energy Changers

1. List the 8 forms of energy

2. State the useful and wasted energy we get from a hair dryer.
   Useful –
   Wasted -

3. Cars only use 20% of the energy we put into them for movement. Give examples of how the other 80% is used.

4. Write the energy flow diagram for the following

a. Using a microphone

b. Turning on a light bulb

c. Fireworks

d. Climbing a mountain

e. Releasing an arrow

Energy and Heat Homework 2 - Generating Energy

Some research skills are required for this homework

1. Copy and Complete the table below

Source of Energy	One Advantage	One Disadvantage
Solar		
Geothermal		
Tidal		
Hydroelectric		
Nuclear		
Coal		

2. The Source of Scotland's Electricity Generation is given in the table below.

Source of Energy	Percentage (%)
Coal	30
Oil	4
Gas	16
Hydro	7
Wind	10
Bio Mass	2
Nuclear	31

a) Calculate the percentage that comes from renewable energy sources.

b) Calculate the percentage that comes from non-renewable.

c) State the fossil fuels.

3. A lot of opinions are expressed on the building of windfarms in Scotland. Give two reasons why some people may be in favour of building windfarms and two reasons why some people object to them.

Energy and Heat Homework 3 - Heat Transfer

1. Choose words from the box to complete the sentences that follow

conduction	*convection*	*radiation*

Heat energy is transferred through water mostly by_____

Heat energy passes through a metal pan by _____

Think of heat travelling from the Sun to Earth.

The energy passes through space by _____

2. a) By which process is most heat transferred:

   i) from a gas flame to water in an aluminium pan?

   _____

   ii) throughout the water in the pan?

   _____

   b) Name a suitable substance for the handle of the pan

3. The colour of surfaces on a material can affect how well they absorb or emit heat rays.

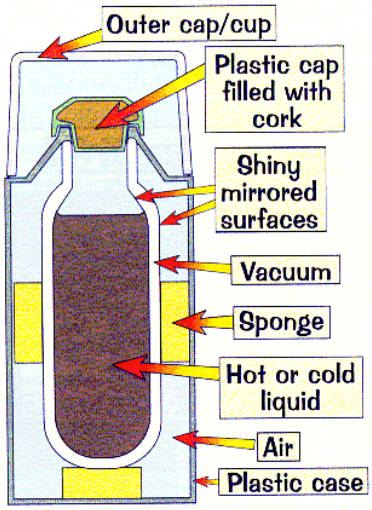
Explain why:

a) Houses in warm countries like Greece are often painted white on the outside?

b) High street shops often make their summer clothing in very bright colours rather than black?

4. The diagram below shows a vacuum flask, which is used to keep drinks hot or cold. Copy the table into your jotter.

Write down the ways in which a vacuum flask reduces heat transfer in the table below:



part of flask	processes reduced (eg 'conduction')