

# Cumbernauld Academy

## CfE Science

### Physics

# *Heat Transfer and Renewable Energy*

Name:- \_\_\_\_\_

Class:- \_\_\_\_\_

*Teacher:-* \_\_\_\_\_

## Homework

Exercise 1 - / 20

Exercise 2 - / 20

# Homework 1

## Thermometers, Conductors and Insulators

1. (i) Name the instrument used to measure temperature (1)  
(ii) What is the unit of temperature (1)
2. Name 2 types of thermometer (2)
3. What is meant by temperature (1)
4. Explain how heat energy travels through a solid (1)
5. What is a conductor of heat. Include an example (2)
6. What is an insulator of heat. Include an example (2)
7. Explain why a saucepan has a plastic handle (2)
8. Explain why it is safer to pick up a hot plate with a dry towel rather than a wet one (2)
9. Construct a table with appropriate headings to sort the following materials into conductors or insulators.  
  
Cork table mat cork, steel frying pan, wooden fish slice, electric iron; feet of a kettle made of plastic; copper boiler. (6)

**Total (20)**

## Homework 2

### Conduction, Convection, Radiation, Insulation and Alternative Energy

For questions 1 - 5 explain the reason behind the statements:

1. Houses in hot countries are usually painted white (1)
2. Car radiators are painted matt black (1)
3. Anyone standing round a bonfire feels heat (1)
4. If you stand in front of an open refrigerator you get cold feet (1)
5. Birds fluff up their feathers in winter (1)
6. ...Describe what is meant by convection currents in a gas. (1)
7. How does heat energy travel to the earth from the sun ? (1)
8. (i) What is another name for heat rays ? (1)
9. (ii) Describe what a thermograph is (1)
10. List 5 ways in reducing heat loss from a house. (5)
11. Explain with aid of a diagram how a thermos flask prevents heat loss by:
  - a) Convection
  - b) Conduction
  - c) Radiation (3)
12. List 3 forms of alternative energy (3)

**Total (20)**