

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

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

## ACTIVITY SHEET

## Activity 1.1

1 Explain three clearly stated observations using the kinetic particle model of matter.

a

b

c

2 Give reasons for the belief that absolute zero, or 0K, is the coldest temperature attainable.

3 Draw a diagram to show what is different about the water molecules in two beakers of water; one at 25°C, the other at 75°C.



4 Think of an analogy for thermal equilibrium between two systems. Describe your analogy in a sketch and explain it to someone without a physics background.

5 Does a skateboarder gain energy when getting faster going down a steep hill? Explain your answer by referring to a law of physics. Ignore any friction effects.

6 Penguins, when standing on ice or snow, have very little blood flowing through their feet. Give reasons for this.





- 7 How could heat energy be made to transfer faster from one system to another?
- 8 Outline one use of cryogenics.
- 9 Young children tend to get cold very quickly if they are wet after a swim and standing on the sand at the beach when the wind is blowing. If they dry themselves, they do not feel as cold. Why would this be?
- 10 An electric kettle takes 2 minutes to boil the water in it. If it stays on, the water does not get hotter than  $100^{\circ}\text{C}$ , so where is the energy going?

