Summary

The temperature of an object depends upon how much its particles are vibrating.

Internal energy (thermal energy) is the total amount of energy in an object.

Heat energy travels from a hot object to a cold object.

Absolute zero is the coldest possible temperature at $-273\,°C$. Temperature in kelvin = $°C + 273$.

▶ **Questions**

1. Copy out and fill in the missing words:
   a) Thermometers are used to measure . . . . which depends on how much the . . . . are vibrating. Internal energy is the amount of . . . . in an object.
   b) The coldest possible temperature is . . $°C$, called . . . .

2. Copy out and complete the rhyme:
   Thermometers were often made
   With marks described as c . . . .
   But modern times have seen a fuss
   To change the name to C . . . .

3. Copy out and place ticks in the table to show which liquid is better in each case:

	Mercury	Alcohol
Expands more evenly		
Expands more		
A better conductor of heat		
Useful at higher temperatures		
Useful at lower temperatures		

4. Explain the difference between heat and temperature.

5. *Professor Messer blows his top. Tell him why he's such a flop:*

6. Describe and explain the features of a thermometer which will make it
   a) sensitive, b) quick-acting.

7. a) Convert $10\,°C$ to kelvin.
   b) Convert $300\,K$ to $°C$.
   c) What is your body temperature in kelvin?

8. Professor Messer was taken ill. The table shows how his temperature varied:

Time (hours)	0	1	2	3	4	5	6	7	8	9	10
Temperature (°C)	37	39	40	40	40	39.5	38.3	37.7	37.3	37	37

   a) Plot a graph of his temperature (for the range 36–40 $°C$) against time (in hours).
   b) What was his highest temperature?
   c) When did this happen?
   d) When do you think an ice-bath was used to cool him?
   e) For how long was his temperature above normal?
   f) At what times do you think his temperature was $38\,°C$?
   g) When was he cooling fastest?