

## B4 ACTIVITY 2: SPINNING SPIRAL

### Background

This activity uses a candle to heat the air, which then rises. The position of the candle enables this hot air to rise up through the spiral that is free to rotate and so spins. Students may be familiar with some decorations based on this principle. Either before or after the activity, students could research how hot-air balloons operate, as well as the oriental custom of releasing hot-air lanterns for significant occasions.

### Equipment required (per group):

- One A4 sheet of light card or paper
- 15 cm length of string
- Retort stand and clamp
- Scissors
- Candle (ideally a tea light)
- Matches
- Drawing compass with pencil



Figure 16

### What to do:

1. Using the compass, draw a circle of approx. 8 cm in diameter on the card or drawing paper as shown in Figure 17.
2. Cut a neat spiral leaving a small circle in the middle to attach the thread as shown in Figure 18.
3. Make a small hole in the centre of the circle and thread the piece of string through, securing it with a knot.
4. Hang the spiral from one of the claws on the clamp, ensuring that the spiral has plenty of room to move up and down without touching the bench.
5. Before you put the flame under the spiral **predict** what will happen.
  - ② *Will the spiral bob up and down?*
  - ② *Will it spin in a clockwise direction or perhaps anticlockwise?*
6. Allow the spiral to hang freely and then position a burning candle underneath it making sure it is not touching any part of the spiral.  
**Observe** the spiral's behaviour.  
**Explain** any differences from your initial prediction.

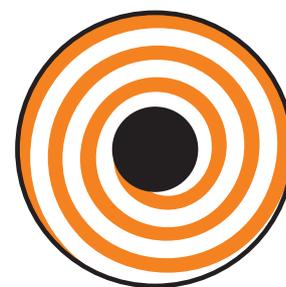


Figure 17

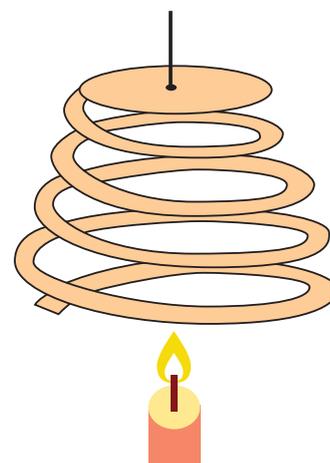


Figure 18