

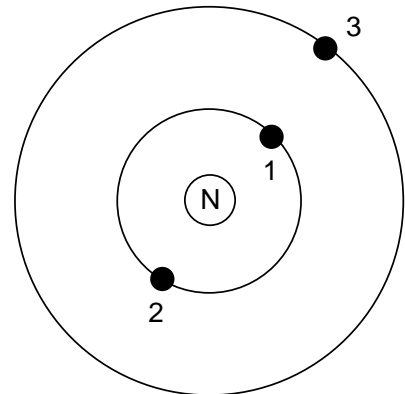
The atom and the solar system

The diagram on the right shows a simple model of an atom.

N is the nucleus, and there are three electrons, labelled 1, 2 and 3.

The electrons are attracted to the nucleus.

Below are some questions about the model of the atom shown in the diagram.



1. What type of force attracts the electrons towards the nucleus? _____

2. Is electron 3 attracted to the nucleus by a stronger force, a weaker force, or the same size force as electron 1?

Why do you think this? _____

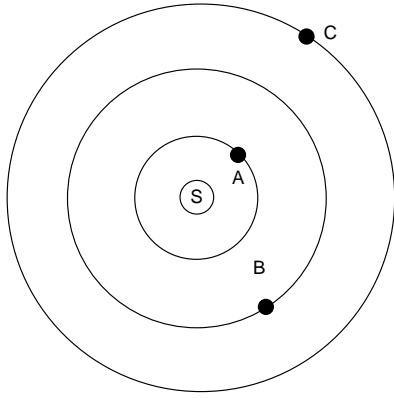
3. Which statement do you think is correct (✓)?

- The force attracting the nucleus to electron 2 is larger than the force attracting electron 2 to the nucleus.
- The force attracting the nucleus to electron 2 is the same size as the force attracting electron 2 to the nucleus.
- The force attracting the nucleus to electron 2 is smaller than the force attracting electron 2 to the nucleus.
- There is no force acting on the nucleus attracting it to electron 2.

Why do you think this? _____

4. Is there any force between electron 1 and electron 3? _____

Why do you think this? _____



The diagram on the left shows a simple model of a solar system. S is the sun, and there are three planets, labelled A, B and C. The planets are attracted to the sun.

Below are some questions about the solar system shown in the diagram.

5. What type of force attracts the planets towards the sun? _____

6. Is planet C attracted to the sun by a stronger force, a weaker force, or the same size force as planet A?

Why do you think this? _____

7. Which statement do you think is correct (✓) ?

- The force attracting the sun to planet B is larger than the force attracting planet B to the sun.
- The force attracting the sun to planet B is the same size as the force attracting planet B to the sun.
- The force attracting the sun to planet B is smaller than the force attracting planet B to the sun.
- There is no force acting on the sun attracting it to planet B.

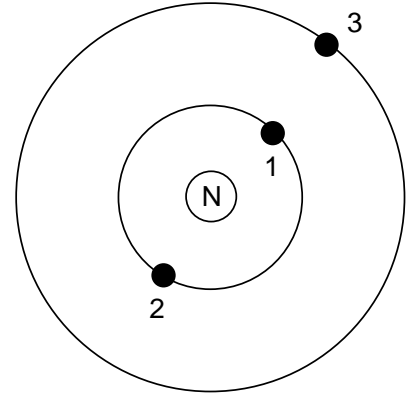
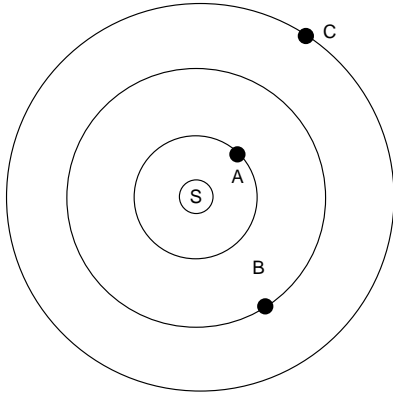
Why do you think this? _____

8. Is there any force between planet A and planet C?

Why do you think this? _____

Comparing the atom with the solar system

Look at the models shown in the diagrams, and try to think of ways in which the atom and the solar system are similar, and ways in which they are different:



List the similarities and differences you can think of.

In which ways are they similar?

In which ways are they different?
