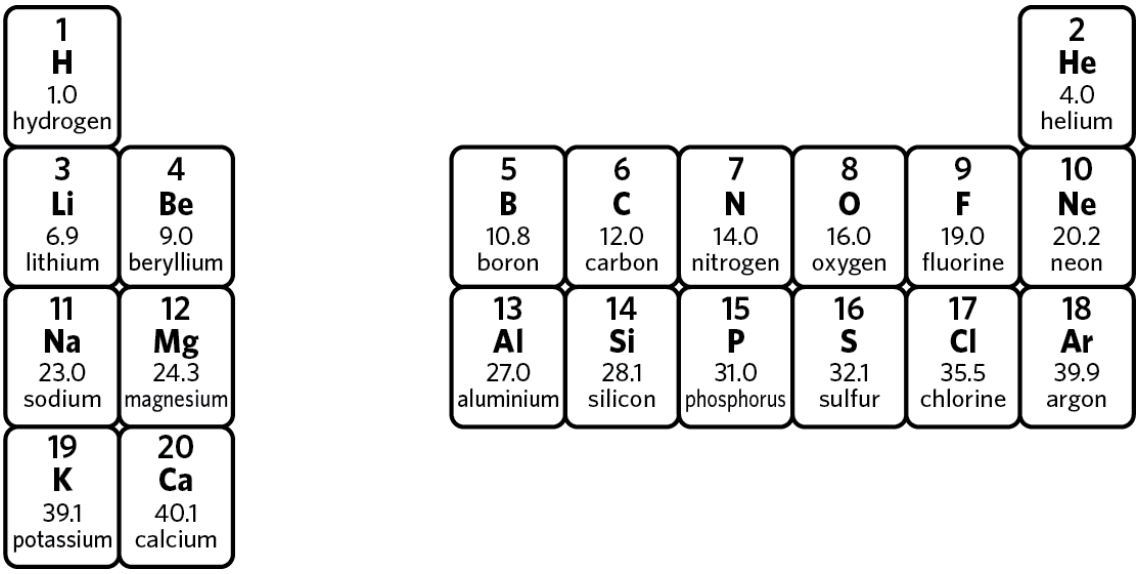
Y9: 3A The structure of the atom

Skill sharpener: Processing and analysing

Skills achievement standards		
Year 8: Select and construct appropriate representations to organise and process data and information.	**Year 9:** Select and construct appropriate representations to organise, process and summarise data and information.	**Year 10**: Select and construct effective representations to organise, process and summarise data and information.

Representing the atom

1. Choose an element from the first 20 and design a model using everyday objects.



Include in your model:

- the subatomic particles – protons, neutrons, and electrons
- the location of each subatomic particle
- the position of electrons on each shell.

2. Submit a labelled drawing of your model.

Extension

Analyse the model you have developed. Come up with a list of advantages and disadvantages of the model when considering all the information and models known about the atom.

Advantages	Disadvantages
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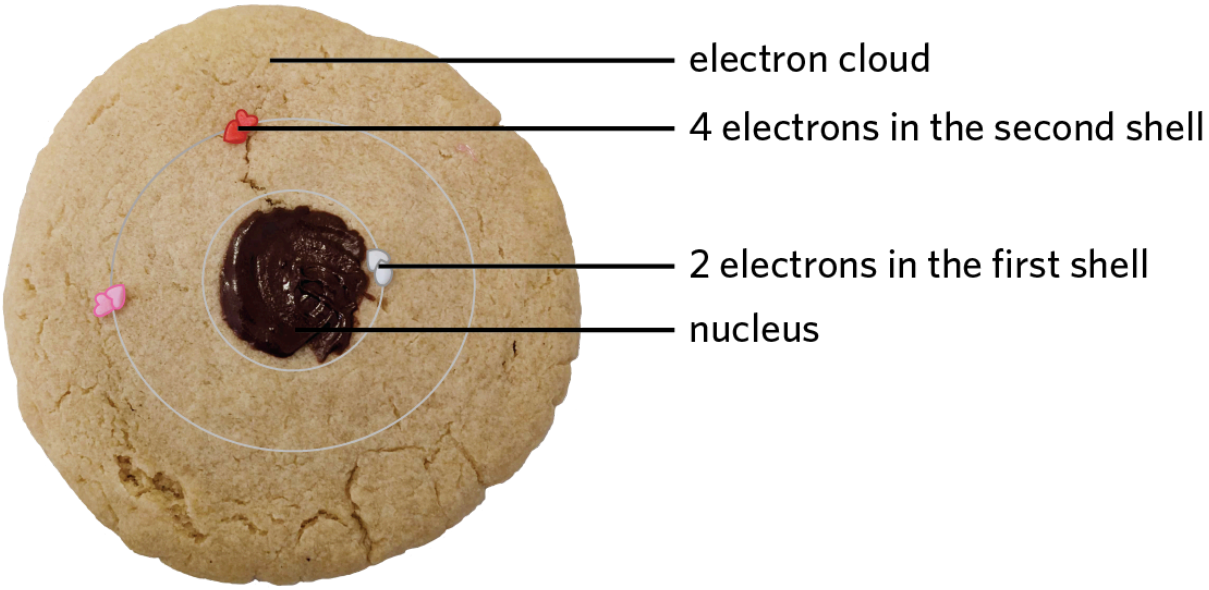
Example answer

Representing a Carbon atom



Extension

Advantages	Disadvantages
• shows the electron cloud as an area where the electrons exist • nucleus is placed in the middle • displays electrons on different levels based on scattered placement	• no display of the protons and neutrons in the nucleus – can't count to make sure that there are the correct number of each subatomic particle • not in motion so the electron movement in the cloud is not modelled • no electron orbits shown either – making it difficult to check the right number of electrons are placed based on 2, 8, 8, 18 rule