

Nuclear Model of the Atom Worksheet

Name: _____

_____/ 25 marks

Student Instructions

Use the interactive animation of the nuclear model found at <http://www.chemicalformula.org/atom> to complete the following. 1 mark each unless otherwise indicated.

1. What three sub atomic particles are found in an atom?
2. Where is the nucleus found in an atom?
3. What sub atomic particle orbits the nucleus of an atom?
4. What charge is an electron?
5. Complete the sentence. Atoms are made mostly of _____ _____
6. What two sub atomic particles that are found in the nucleus of an atom?
7. What charge is the nucleus of an atom?
8. What is the number of protons in an atom called?
9. What is the Atomic Number of Helium?
10. What sub atomic particle helps make the nucleus stable?
11. What is the relationship between the number of protons and the number of electrons in an atom?

12. Complete the table. 6 marks

Sub atomic particle	Charge	Relative mass	More information. Complete
Proton		1800	The number of protons in the nucleus determines what _____ it is.
Neutron		1801	Neutrons help _____ the nucleus.
Electron		1	The outer electrons are involved in chemical _____

13. Draw a diagram of an atom of Helium.

3 marks.

Include the electrons, protons and neutrons.

1 mark for the correct number of particles.

1 mark for the correct position of the particles.

1 mark for including labels

14. What is the Mass Number of an atom?

15. What is the Mass Number of Helium?

16. What is an isotope?

17. What causes an unstable nucleus?

18. What type of isotope releases nuclear radiation from its nucleus?

Nuclear Model of the Atom Worksheet

Name: **ANSWERS**

____/ 25 marks

Student Instructions

Use the interactive animation of the nuclear model found at <http://www.chemicalformula.org/atom> to complete the following. 1 mark each unless otherwise indicated.

1. What three sub atomic particles are found in an atom? *Proton, neutron and electrons*
2. Where is the nucleus found in an atom? *In the center of an atom.*
3. What sub atomic particle orbits the nucleus of an atom? *The electron.*
4. What charge is an electron? *Negative.*
5. Complete the sentence. Atoms are made mostly of *empty space.*
6. What two sub atomic particles that are found in the nucleus of an atom? *Proton and neutron*
7. What charge is the nucleus of an atom? *Positive*
8. What is the number of protons in an atom called? *The Atomic Number*
9. What is the Atomic Number of Helium? *2*
10. What sub atomic particle helps make the nucleus stable? *The neutron*
11. What is the relationship between the number of protons and the number of electrons in an atom?

The number of protons is equal to the number of neutrons

ANSWERS

12. Complete the table. 6 marks

Sub atomic particle	Charge	Relative mass	More information. Complete
Proton	<i>Positive</i>	1800	The number of protons in the nucleus determines what <i>element</i> it is.
Neutron	<i>Neutral</i>	1801	Neutrons help <i>stabilize</i> the nucleus.
Electron	<i>Negative</i>	1	The outer electrons are involved in chemical <i>reactions</i>

13. Draw a diagram of an atom of Helium.

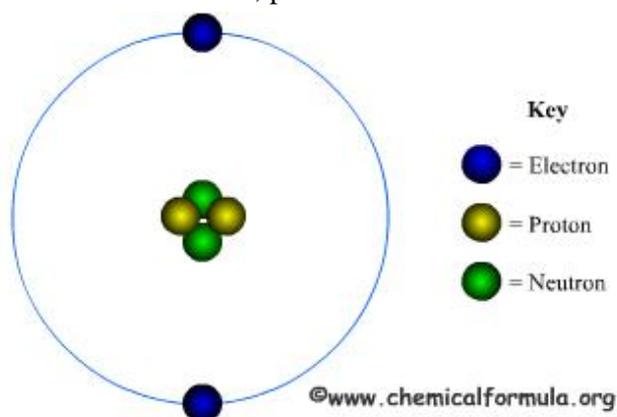
3 marks.

Include the electrons, protons and neutrons.

1 mark for the correct number of particles.

1 mark for the correct position of the particles.

1 mark for including labels



14. What is the Mass Number of an atom? *The number of particles in the nucleus. ie. The number of protons and neutrons.*

15. What is the Mass Number of Helium? *4*

16. What is an isotope? *An atom of an element that has a different number of neutrons,*

17. What causes an unstable nucleus? *Too many or too few neutrons.*

18. What type of isotope releases nuclear radiation from its nucleus? *Radioisotope*