



Name:		
Class:		

## **ACTIVITY SHEET**

## **Chapter 4: Revision**

1	Describe how protons are kept together in the nuclei of atoms despite the force of electrostatic repulsion
	between them.

- **2** a Explain how you would make a model of an atom, such as helium, that shows the position of the particles and their relative sizes.
  - **b** Identify the limitations of the model you have described.
  - **c** Explain why models such as the one described are useful in science.
- **3** Explain how the binding energy for a nucleus can be calculated.

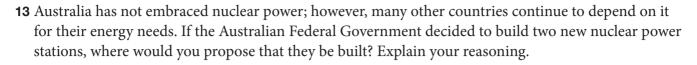


4	Using a diagram, compare the processes of fusion and fission.		
5	Outline the events that lead to an uncontrolled fission chain reaction of uranium.		
•	0.0000		
6	What are the differences between the moderator and the control rods in a thermal nuclear reactor?		
U	what are the differences between the moderator and the control rods in a thermal nuclear reactor:		
7	Why is harnessing the power from controlled nuclear fusion to generate electricity still years or even		
-	decades away?		



8	Explain why a person who receives a dose of radiation of about 1 Sv must have their health monitored for many years afterwards.
9	Define 'ionising radiation'.
10	Calculate the absorbed dose of radiation if 4.5 J of energy is absorbed by a 500 g tumour.
11	How can beta-minus emission result in a more stable nucleus?
	Compare the original doses of radiation received by a 50 kg person and a 100 kg person if they both receive an equivalent dose of 1.4 Sv, with the radiation being slow neutrons.





**14** Outline the potential advantages of fusion power over fission power.