Radioactivity Space School

Nuclear reactions and applications.

1. Fission and fusion are two types of nuclear reactions. Describe each nuclear reaction .	2. A fission reaction can be started by the uranium nucleus absorbing a slow neutron. What is the name of this fission reaction?	**3.** Explain why there are no fusion reactors working to produce electricity.
4. In a nuclear reactor there are control rods and moderators. Explain what each does in the reactor.	**5.** Explain how the radioisotope Americium-241 is used in a household fire alarm	**6.** Beta particles are used in a system which controls the thickness of paper when it is being manufactured. Explain why gamma rays are not used instead.
7. Write down the name of the radiation that is used to sterilise surgical instruments.	**8.** Explain why alpha particles are not used in the treatment of cancer.	**9.** Radioactive material can be used in medical tracing. Explain what a tracer is and how it helps doctors diagnose illnesses.
10. Write down three facts about fusion and fission	**11.**. *"Radiation is used in insect control. This will help feed the world"* Do some internet research and in your own words from the research you have found, explain the underlined headline.	**12.** Aircraft wings are welded onto the main frame of the plane. Explain how beta radiation can judge if a weld is the correct safe thickness.

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