

## P3 X-Rays and Ultrasound Quiz

1. Explain why it would not be safe to use X-rays to produce an image of an unborn child.
2. Give one use of ultrasound for medical treatment.
3. Before switching on the X-ray machine, a radiographer goes behind a screen. Why?
4. Explain the advantage of a CT scan compared to an X-ray.
5. Explain why a radiographer might wear an apron lined with lead.
6. Why can X-rays be used to take pictures of bones?
7. What is ultrasound?
8. What is the range of frequencies most humans can hear?
9. Explain why ultrasound can be used to clean jewellery immersed in cleaning fluid.
10. Give an industrial use for ultrasound.
11. What happens to ultrasound which reaches the boundary between two different media and is not reflected?

12. Why can a dog hear a dog whistle but humans cannot?
13. Explain how ultrasonic waves are used to produce the image of an unborn baby.
14. Write down the equation that links frequency, wavelength and wave speed.
15. Why is it important to have a very narrow beam of ultrasound waves when taking an ultrasound?
16. Why is it possible to produce a very narrow beam with ultrasound but not with normal sound waves?
17. Give two important pieces of information about an unborn baby which can be gained from the image produced by an ultrasound scan.
18. Sound travels through air, water and glass at different speeds. Through which of these materials does sound travel fastest/slowest?
19. Why can ultrasound be used to measure the thickness of a layer of fat on a pig?
20. Why are we able to see the different parts of the foetus in an ultrasound scan?