

## Year 7 Science – Unit Overview

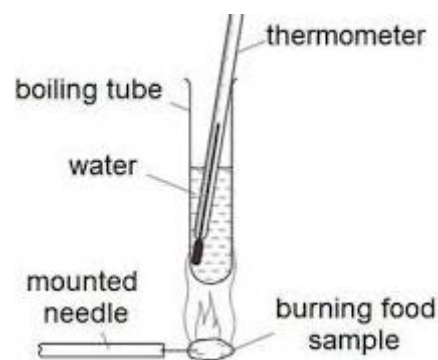
### Energy

#### Unit Summary

In this unit, students will learn that energy is something that can be measured, stored and transferred between objects. Students will compare how energy is transferred in different scenarios, such as moving objects, stretching springs, or heating substances. They will investigate the energy values of different foods and how energy from food is used by the body. Finally, the unit looks at different types of fuels and energy resources, their benefits, disadvantages and how they are used.

20 questions to ask, or encourage your child to turn them into flashcards.  
Answers on the reverse.

1. What is the name for the energy stored in a moving object?
2. What is the energy store in a stretched spring?
3. Give an example of an object that has a lot of gravitational potential energy.
4. What is the law of conservation energy? 'Energy can be \_\_\_\_\_, but not \_\_\_\_\_ or \_\_\_\_\_.'
5. What is the name for the energy stored in food and fuels?
6. What is energy measured in? (Also called the unit of energy)
7. What is one way that a fire transfers energy to the surroundings?
8. If a box is being pushed, how is energy being transferred from the person to the box?
9. When shopping, how would you know how much energy is in a food item?
10. If small pieces of different foods are placed under a boiling tube of water and set alight, as shown in the diagram, what would you measure to work out the amount of energy stored in the food?
11. If the 'independent variable' is the thing we change in an experiment (in this case the type of food), what do we call the thing we're measuring?
12. Name three types of fuel.
13. When a fuel is burned in a power station, what is this used to generate?
14. What are fossil fuels made from?
15. Name a renewable energy resource.
16. Name a non-renewable energy resource.
17. What is a disadvantage of using fossil fuels?
18. Which energy resource requires big dams to be built that destroys habitats?
19. Which energy resources are reliant on the weather?
20. Which energy resource means we have less land to grow food crops on?



Further information on this topic:

<https://www.bbc.co.uk/bitesize/topics/zc3g87h/articles/zg2sn9q#zjf4cmn>

<https://www.bbc.co.uk/bitesize/articles/z2wkcmn#zyttm39>

<https://www.bbc.co.uk/bitesize/topics/zc3g87h/articles/zdycr2p#zww4cmn>

## Answers

1. Kinetic energy
2. Elastic potential energy
3. Anything above ground level, or that could move to a lower position – a flying plane/helicopter, a person climbing, a car at the top of a hill, a book on a shelf...
4. Transferred, created / destroyed
5. Chemical energy
6. Joules (J)
7. By heating / by light
8. By forces
9. By checking the nutrition label
10. The change in temperature of the water (or the temperature at the start, and at the end)
11. The dependent variable
12. Three from: oil, coal, gas, wood, biofuel, uranium/nuclear fuel
13. Electricity
14. The remains of plants/animals that died millions of years ago
15. One from: Solar power, wind power, tidal / wave power, hydroelectric, geothermal, biofuels
16. One from: Oil, coal, gas, uranium/nuclear fuel
17. One from: They release carbon dioxide/greenhouse gases, they are non-renewable/will run out one day
18. Hydroelectric power
19. Solar power, wind power, wave power
20. Biofuels