



# Y9 Trilogy

## Energy Resources

### Unit P1b

# Science homework booklet

## Core questions

### How to use:

- 1 - **Copy** the answers once into your **knowledge organiser** to help you to learn them.
- 2 - Fold the page in **half** so that you can only see the questions, and write the answers out **again from memory**.
- 3 - Show your knowledge organiser to your teacher on the specified due date. You should show them **TWO** sets of answers to each question.

That's it!

Teacher's name: \_\_\_\_\_

**Date Due** \_\_\_\_\_

	Question	Answer
1	What is the source of most of our naturally occurring energy resources?	The sun
2	Name the three fossil fuels	Coal, oil and natural gas
3	What type of energy store do fuels have?	Chemical energy store
4	How is the energy stored in fossil fuels released into useful energy?	Combustion (transferred into thermal store)
5	How does a fossil fuelled power station work?	<ol style="list-style-type: none"><li>1. Fuel combusts releasing thermal energy</li><li>2. Thermal energy used to heat water</li><li>3. Water turns into steam and turns a turbine</li><li>4. The turbine is connected to a generator which generates electricity</li></ol>
6	Name the three main uses of fossil fuels	Generating electricity, heating and transport
7	Fossil fuels are non-renewable, what does it mean?	They will run out

**Date Due** \_\_\_\_\_

8	Why is burning fossil fuels bad for the environment?	They release CO <sub>2</sub> and sulfur dioxide into the atmosphere
9	Why is carbon dioxide bad for the environment?	It is a greenhouse gas and contributes to global warming
10	Why is sulfur dioxide bad for the environment?	It causes acid rain
11	What are the other disadvantages of using fossil fuels, other than the gases released?	Coal mining causes disruption to the landscape. Oil spillages cause serious environmental problems
12	What are the two main nuclear fuels?	Uranium and plutonium
13	What is a benefit of nuclear fuel?	Does not release greenhouse gases
14	What is the main disadvantage with nuclear power?	Produces nuclear waste which is hard to dispose of

**Date Due** \_\_\_\_\_

15	State four renewable energy resources directly linked to the sun's energy	Solar, wind, wave and biofuels
16	What other renewable energy resources are there that don't rely on the sun?	Geothermal, tidal
17	Where does geothermal energy come from?	Volcanic regions or where hot rocks that are near the surface
18	Give two advantages of geothermal energy	Very reliable and causes very little environmental damage
19	Give two disadvantages of geothermal energy	Very limited availability, very expensive to build power plants

Date Due \_\_\_\_\_

20	How does hydro-electric power generate electricity?	Water falling from height spins a turbine, connected to generator
21	Give two benefits of hydro-electric power	Immediate response to a sudden demand (no start up time) Very reliable
22	Give two disadvantages of hydro-electric power	Loss of habitat when dams are built, very expensive to build
23	What is the difference between a solar cell and solar panel/heater?	Solar cells use light energy to generate electricity and solar panels use heat from the sun heat water
24	Why are wind turbines and solar cells <b>unreliable</b> ?	They depend on the weather
25	What are the advantages of both wind turbines and solar cells?	Produce no pollution (i.e. carbon dioxide), no fuel costs
26	What are the disadvantages of wind turbines?	Power output is unreliable, can be noisy, cause visual pollution

Date Due \_\_\_\_\_

27	What is a bio-fuel?	A fuel made from plant material or animal waste
28	What is meant by the term "carbon neutral"?	Activities that do not add <b>extra</b> CO <sub>2</sub> into the atmosphere
29	Bio-fuels made from plants are said to be carbon neutral why?	CO <sub>2</sub> released when the fuel burns is removed from the atmosphere when the plants grow
30	What is a disadvantage of bio-fuels?	Loss of habitat used to grow plants for bio-fuels, land could be used for growing crops for food instead
31	Give three reasons for using more renewable energy in the future	Non-renewables are running out Combat global warming Higher demand for energy due to population growth
32	What are the main reasons we are not using more renewable fuels?	They are expensive to build and companies/governments don't want to pay. Infrastructure for fossil fuels is already there Many renewable energy resources are unreliable