

# Year 9

# Powering Life



Science Covered in this project

Science Covered	Completed
burning fuels	
fossil fuels	
saving energy	
renewable energy	
circuits	
sedimentary rocks (oil/coal)	
thermal conduction & insulation	
reducing heat loss	
conserving energy	
Sankey diagrams	
burning/oxidation	
chemical energy (batteries)	
types of energy	
electricity & energy	
national grid, paying for electricity, power ratings	
generating electricity	
wasting energy	

*This work is the most basic and can be covered in levels 3-6*

*This work is more complex and is level 4-6*

*These are the most challenging topics and will be covered at levels 4-7*

## Project Aim

The world is going to have to radically change the way its energy needs are met over the course of your lifetime. The world reserves of oil and gas are running short, and that which remains is proving more and more difficult to extract. There are new technologies such as wind turbines and solar panels that go some way to reduce our need for fossil fuels, but is it enough?

This project is about understanding all aspects of where our energy comes from, how we use it, how we lose it, and what we can do to make the limited fossil fuel resources last longer.

Over this half term your teacher will share with you all of the materials covered on the previous page. You should tick each box when you covered the work in your lessons. This work will help you to have the knowledge needed to complete your assignment. The assignment will be due to handed in during the last week of each half term. If you do not have access to the internet, remember the Academy has homework clubs that run during the week and the library is available after school for all students.

Full details of the assignment will be posted in the Science area of the Academy website.



## Your Assignment

The Academy is committed to raising standards of literacy across all areas of the curriculum, so you should remember to use the VCOP strategies you have met in your lessons.

At any time you can ask your teacher for advice and guidance on how to complete your project assignments.

You have this half term to complete the following:

- Design a brand new house of the future. Show in your drawing all the ways in which energy can be saved, how new technologies can be used to provide heat, light and power for your house and how water can be recycled. You should also write a short description of each design feature explaining the science of your modification.
- Use the internet or books to research and find information about renewable energy. You should make a Word, Publisher or Powerpoint document on the following renewable energy sources; *Geothermal energy, tidal energy, solar energy, wind energy and the use of algae to produce fuel.*
- Write a story about a world where there is no crude oil left. This means there will be no petrol, diesel, jet fuel, plastic, paint, fabrics like nylon and polyester! Remember that no plastic means no CD's, mobile phones, Xbox or PSP's. In fact, there probably wouldn't be any television! Think about how we travel, communicate and spend leisure time in this world of the future.

It is expected this assignment will take you between 6-10 hours over the course of this project.