THE Ebbsfleet ACADEMY
Aspire, Excel

Subject: Power, the environment and designers
Year: 11
Term: 2

Lesson Sequence
1. Fuels
2. Batteries
3. Sir Norman Foster
4. Philip Starck
5. Alec Issigonis
6. K.O Test

Key Assessments
Term 2 Exam.

Core Texts
Ebbsfleet Revision Pack 2

Key Words: See the list below.

Knowledge Area	What You Must Know
Fossil fuels	Are fuels which are buried in the ground, formed over millions of years, release high CO2 and will run out.
Non renewables	All fuels such as fossil fuels which cannot be readily replaced or re-grown and will run out.
Renewable energy	All fuels which can be sustained by either occurring naturally (wind and solar) or re-grown such as timber.
Solar power	The energy derived from the sun, usually through photo-voltaic electric generating cells or water heating.
Hydroelectricity	Water is held back by a dam then released to use gravity to make it drive turbines which generate electricity.
Wind power	Using the force of the wind to drive turbines (windmills) which generate electricity similar to an alternator.
Nuclear power	In nuclear fission, atoms are split apart to form smaller atoms, releasing energy. Fission takes place inside the reactor of a nuclear power plant. The heat is used to create steam which drives electrical turbines.
Why is renewable energy needed?	Because fossil fuels (oil, coal, gas) will obviously run out and we can't wait one million years for more to form.
Who is against renewables?	The oil and gas companies want us to rely on oil and gas to make as much money as they can.
Fossil fuel uses	Coal, oi and gas are currently the cheapest way to create heat by burning and thus steam which drives turbines.
Types of pollution from F Fuels	Fossil fuel burning creates CO2, Hydrocarbons, Carbon Monoxide and other pollutants such as soot.
Why is electricity demand rising?	More products use electricity to run including computers, domestic appliances, iCT. And new vehicles.
Mains power	This is the power supplied by power stations to your home / office through the national grid network.
Disposable alkaline batteries	These are not rechargeable and use a chemical reaction to make electricity in the battery. Environmentally bad!
Sealed Lead /acid batteries (SLA)	These usually are in cars and other vehicles and can be recharged daily by the main engine.
Nickel Cadmium Batteries (NiCD)	These are rechargeable usually used in cordless tools and other portable devices.
Lithium Ion Batteries (LI+)	More modern and hold more charge than NiCD in tools etc. and are also used in electric cars.
Why battery power is good	It is portable and can be used away from a socket allowing phones and tablets to work.
What is bad with batteries?	They do not last forever and will eventually pollute the earth if not recycled / disposed of properly.
Sir Norman Foster	He is one of Britain's most prolific architects of his generation.[2] In 1999, he was awarded the Pritzker Architecture Prize, often referred to as the Nobel Prize of architecture
Sir Norman's philosophy	Norman Foster quickly earned a reputation for high-tech industrial design based on modernist principles.
Sir Normans greatest work	1979–1986, HSBC Main Building, Hong Kong 1992–1998, Hong Kong International Airport, Chek Lap Kok, Hong Kong, 2004, The Millau Viaduct, near Millau, France, 2002–2007, Wembley Stadium, London, UK
Features of Sir Norman's work	Foster's designs reflected a sophisticated, machine-influenced high-tech vision. His style has evolved into a more sharp-edged modernity.
Philip Starck	**Philippe Starck** is a French designer known since the start of his career in the 1980s for his interior, product, industrial and architectural design including furniture
Stark's philosophy	Through his "democratic design" concept, **Starck** has campaigned for well-designed objects that are not just aimed for upper-tiered incomes.
Stark's work	The prolific work of **Philippe Starck** has progressively touched all areas where design can be applied: furniture, interior decoration, architecture, street furniture, industry. His work includes home equipment (kitchens, utensils, coverings, sanitary-ware, etc.), lighting, household appliances, office equipment (from television to lemon squeezer and toothbrush to stapler, etc.), tableware, clothing and accessories. His philosophy is **best illustrated in his juicer.**
Features of Starck's work	Stark's work is usually **MODERNIST** as he adopts the rules of **form follows function**, **truth to materials** functional design **lacking needless decoration.**
Alec Issigonis	The designer of the original Mini car. The Mini went on to become the best selling British car in history with a production run of 5.3 million cars. This ground-breaking design, with its front wheel drive, transverse engine, sump gearbox, 10-inch wheels, and phenomenal space efficiency, was still being manufactured in 2000 and has been the inspiration for almost all small front-wheel drive cars produced since the early 1960s.