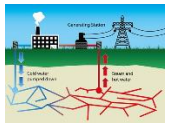
2.1 - Energy Stores – Objects with energy in this store.	
Kinetic	All **moving objects**.
Gravitational Potential	All objects. The **higher** the object is **lifted up**, the **greater** the energy.
Thermal	All objects. The **hotter** the object, the **greater** the energy.
Elastic Potential	Anything that has been **stretched** or **squashed** and will **return** to its **original shape**.
Chemical	Anything that can **release** energy by a **chemical reaction**. e.g. **food, fuels, batteries**.
2.2 - Energy Transfer Pathways	
Mechanically	When a **force** acts.
Electrically	When an **electrical current** moves.
By Heating	When energy is transferred from a **hotter** to a **colder** object.
By Radiation	By **sound** or **light** waves.
2.3 – Energy Conservation & Efficiency	
Law of Conservation of Energy	Energy **cannot** be **created** or **destroyed**. It can only be **transferred** from **one store** to **another**.
Efficiency	A **measure** of how good an appliance is at **transferring energy usefully**. A **percentage** between **0%** and **100%**.
Efficiency Equation	$\text{Efficiency} = \frac{\text{Useful energy out}}{\text{Total energy in}} \times 100\%$
2.4 - Non-Renewable Energy Resources – Limited supply and will run out.	
Fossil Fuels (Coal, oil and gas)	Fuels are **burnt** to **heat water** which makes **steam**. Steam turns a **turbine** which turns a **generator**.
	Pros – Releases **lots of energy**, **reliable**.
	Cons – Releases **carbon dioxide** which causes **global warming**.
Nuclear (Plutonium and Uranium)	**Nuclear reactions** release energy to **heat water** which makes **steam**. Steam turns a **turbine** which turns a **generator**.
	Pros – Releases **lots of energy**, **reliable**.
	Cons – Produces **dangerous radioactive waste**.

2.5 - Renewable Energy Resources - Will not run out.	
Wind Turbines 	Wind spins **turbine blades**.
	Pros – No **pollution**.
	Cons – Spoils **landscape**, only works when **windy**, **noisy**.
Solar Cells 	**Light** hits **solar cells** and **generates electricity**.
	Pros – No **pollution**.
	Cons – Only works when **sunny**.
Geothermal 	**Hot rocks** underground heat water to form **steam**, which turns **turbines**.
	Pros – No **pollution**.
	Cons – Not many places are **suitable**.
Tidal 	**Water flows** through **turbines** in an **estuary** as the **tides** go in and out.
	Pros – No **pollution**.
	Cons – **Costly** to set up. May affect **wildlife**.
Wave 	**Waves** in the **sea** turn a **turbine**.
	Pros – No **pollution**.
	Cons – **Costly** to set up.
Hydroelectric 	**Water falls down** and turns **turbines** in a **dam**.
	Pros – No **pollution**.
	Cons – **Costly** to set up. Can cause **flooding** and **destroy habitats**.
Biofuels 	**Burning crops** or **animal waste** in a power station.
	Pros – **Carbon neutral**.
	Cons – Crops need to be grown which takes up **a lot of land**. Crops could be used to **feed people** instead.

Y7 Science Cycle 2 - Sheet 2

Energy