

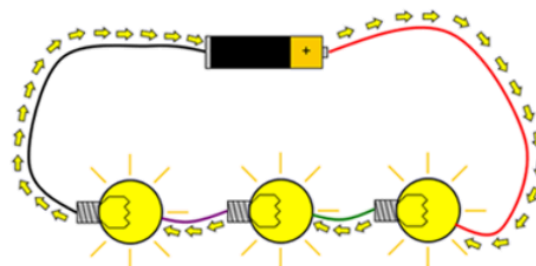


Year 6

## DT - Electrical Systems: More Complex Switches and Circuits

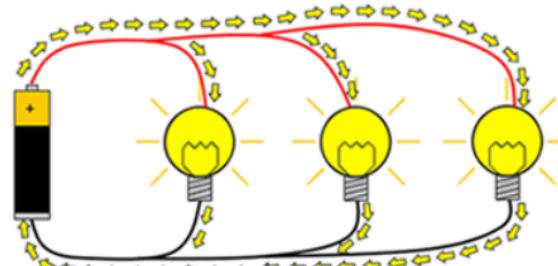
### Key vocabulary

circuit	A path that electricity passes through, wires are used to connect components
conductor	A material which allows electric current to pass through it
insulator	A material which doesn't easily allow electric current to pass through it
prototype	A model made to test whether a design will work
push-to-break switch	A switch turned off by pressing it
push-to-make switch	A switch turned on by pressing it
reed switch	A switch operated by a magnet
toggle switch	A switch operated when a lever is pressed
system	A set of related parts or components that achieve an outcome
output devices	Components that produce an outcome e.g. bulbs or buzzers
input devices	Components that are used to control an electrical circuit e.g. switches
series circuit	Several components run one after each other e.g. two or more lightbulbs in one circuit with no branches
parallel circuit	Different components are connected on different branches of the wire



### Series Circuit

- The lightbulbs (components) run one after another.
- There are **no** branches.
- If one of the components breaks then the whole circuit will no longer work.
- The more lightbulbs added, the

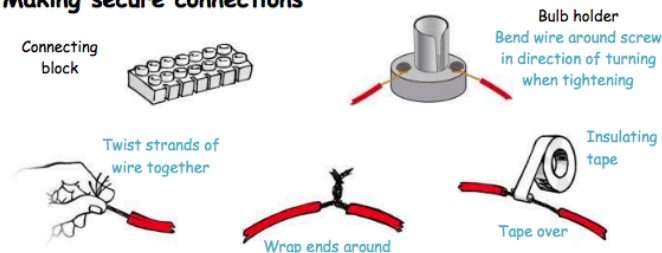


### Parallel Circuit

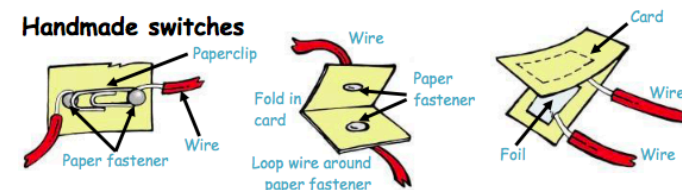
- The lightbulbs (components) are connected to different branches.
- If one of the components breaks then the other branches will still work.
- If more bulbs are added to different branches, it won't effect

### Examples of switches

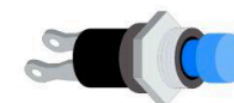
#### Making secure connections



#### Handmade switches



#### Commercial switches



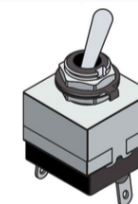
**Push-to-break switch**  
The switch is off while the button is pushed, but returns to its 'on' position when button is released.



**Push-to-make switch**  
When you push, the electricity flows through the circuit, but when you release it the circuit is broken and the switch is off.



**Reed switch**  
Activated by a magnet - this closes the contacts and completes the circuit.



**Toggle switch**  
Simple on/off switch