Science quiz – electricity and light

Electrical circuits

**What will a circuit with an open switch do?**

* It will not allow electricity to pass through
* It will allow electricity to pass through
* It will resist electricity
* It will make a good electrical insulator

**A material which allows electrical current to pass through it is called what?**

* An insulator
* A cell
* A connection
* A conductor

**Why might a circuit fail to work?**

* It might have a dead battery
* It might have two leads connected to the positive pole of the battery and none connected to the negative
* It might have a break in the circuit
* All of the above

**Besides cells, or batteries, what is another source of electrical power?**

* Lightbulbs
* Motors
* Petrol
* Electricity mains

**Which of these materials would not be a good electrical conductor?**

* Copper
* Glass
* Silver
* Iron

**What is an electrical circuit?**

* A collection of electrical equipment
* A path around which electrical current flows
* A series of conductors and insulators
* A light bulb and battery

**Why are electrical wires covered with plastic or rubber?**

* Plastic and rubber are comfortable materials to touch
* Smooth materials keep wires from getting tangled
* Plastic and rubber are good electrical insulators
* Plastic and rubber can be made in different colours so people can tell different leads apart

**What symbol is used in a circuit diagram to represent a bulb?**

* A circle
* Two parallel lines: one short and one long
* An X inside a circle
* The letter M inside a circle

**With which group of items could you not build a complete circuit?**

* Crocodile leads, bulbs, switch, buzzer
* Bulbs, crocodile leads, cell
* Cell, switch, buzzer, crocodile leads
* Wires, bulb, cell

**You have made a simple circuit with one bulb. If you wanted to add an extra bulb without the first bulb dimming, what would you need to design?**

* A series circuit
* A parallel circuit
* A complex circuit
* An incomplete circuit

Light

**Which of these is not a source of light?**

* A candle flame
* The Sun
* The Moon
* A torch

**Imagine a candle flame. Light from the candle flame travels in which direction?**

* In arcs
* In straight lines
* In random lines
* All of the above

**Light travels slightly more slowly through air than through space. It is slowed down a little bit more by glass and which of the following?**

* Metal
* Water
* Concrete
* Wood

**How will a beam of light shining on a glass prism behave?**

* It will be refracted
* It will be completely reflected
* It will be completely absorbed
* It will not be changed at all, instead being perfectly transmitted

**If you half fill a clear glass with water and place a straw in the glass, how does the straw appear when you look at it carefully?**

* It appears normal
* It seems to change colour
* It appears bent or broken
* It disappears completely

**There are forms of light which are invisible to the human eye. Which of these is an example?**

* Ultraviolet
* Reflections
* Dark matter
* Starlight

**Visible light contains many colours. Which of the following is not one of these colours?**

* Green
* Yellow
* Black
* Red

**Why does a green apple look green?**

* It absorbs green light, but reflects the other colours
* It reflects green light, but absorbs all of the other colours
* It absorbs green light, but transmits all of the other colours
* It transmits all of the light

**A submarine's periscope allows someone on the boat to see objects that are above the water. How is this possible?**

* Light reflecting off the object curves as it enters the periscope
* Light reflecting off the object is transmitted as it enters the periscope
* Mirrors within the periscope reflect the light, enabling it to change direction
* Periscope is another name for window