

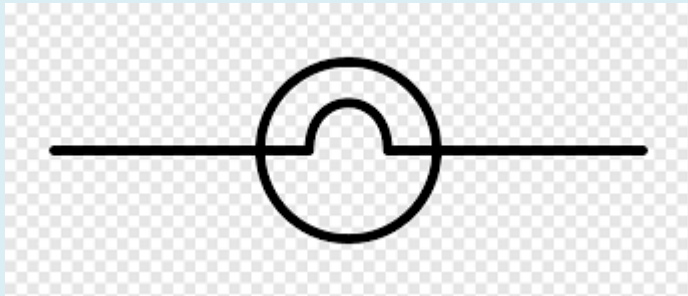
Design and Technology

Alarms

Lesson 3

L/O: To design an alarm system for a particular purpose.

What does this symbol represent in a circuit diagram?



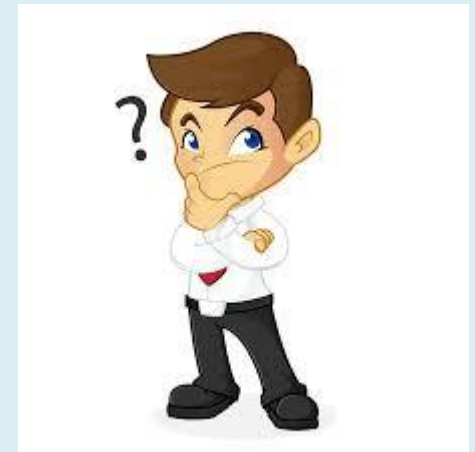
We have found out that alarms are used for a lot of different reasons. What are these used for?



Over the next two lessons you will be designing and evaluating an alarm system of your own.

Firstly, think about the **purpose** of your alarm. What is it for?

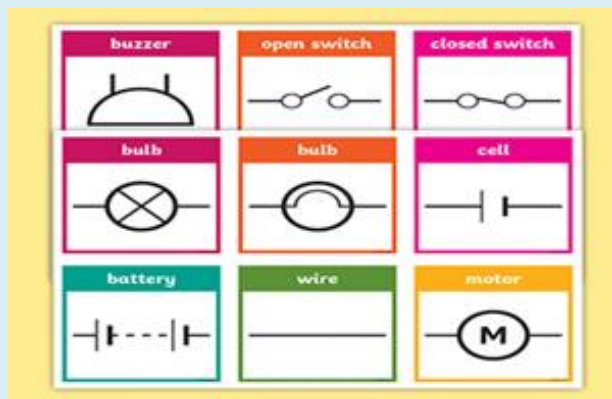
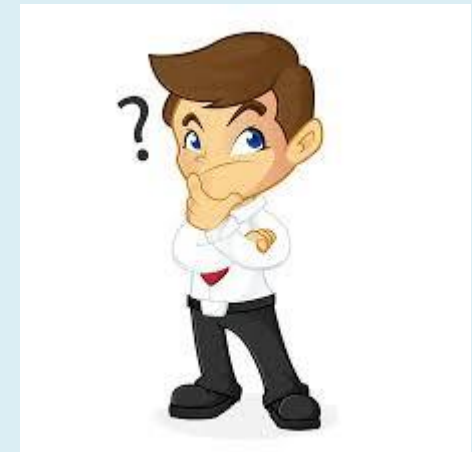
- Is it for danger and will activate to warn you about something?
- Is it a timer alarm, to wake you up?
- Is it a sensor alarm you might use for home security?
- Or is it an anti-burglar device for a museum or bank?



Over the next two lessons you will be designing and evaluating an alarm system of your own.

Secondly, think about the **circuit** for your alarm and which **components** and **switch** will it need?

(There is a reminder about the switches on the next two slides).



Remember the types of switch that might be used.
Here is a quick reminder:

A push-to-break switch

This type of switch breaks the circuit when the button is pressed. In this case, the alarm would sound when an item was lifted off the switch.

What kind of alarm would suit this kind of switch?

A push-to-make switch

This type of switch closes the circuit when the button is pressed so the alarm sounds when the button is pressed. This could be used, for example, to detect when someone steps on something.

What kind of alarm would suit this kind of switch?



A tilt switch

Also known as a mercury switch, this switch contains electrical contacts as well as mercury, which conducts electricity. When the switch is tilted the mercury hits the contacts and so completes the circuit. This kind of switch can be used to detect movement.

An on/off switch

And, of course, there is the simple on/off switch. When the button is pressed, the alarm sounds. When the switch is turned off, the alarm stops.

What kind of alarm system would suit this kind of switch?

Activities

Tricky: Complete sheet 3A to plan your alarm design. It is two-sided (you may not need all of the back page).

Trickier: Complete sheet 3B to plan your alarm design. This is a more detailed plan.

AFL

WWW - What went well with your design?

EBI - How would you improve it? If it is meant to catch a burglar, how will you hide it or make it super sneaky?

(Use a 'push to close' circuit under a carpet like a pressure pad, so when they stand on the floor it sets off).

Caught you!

