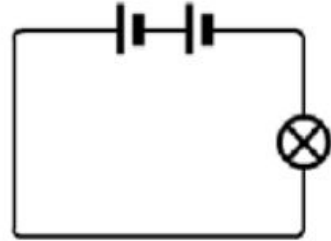
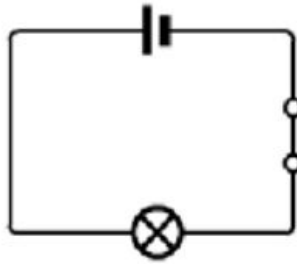
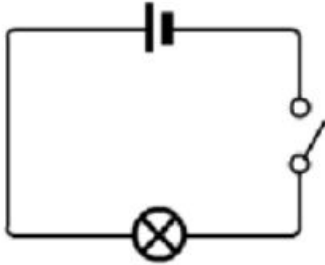


## Warm Up – ‘Spot the difference’

Are these circuits on or off?

Are these circuits on or off? Write your answer under each circuit.

How do you know?




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## Lesson 4.1 - Exploring Circuits

### Student Workbook Component

#### Mini-lesson

*Does technology help or hinder people?*

#### Keyword Review

Match the keyword to its definition

Circuit

Battery

Switch

Electricity

the complete path of an electric current

an electric cell or connected electric cells for providing electric current

a form of energy that is found in nature but that can be artificially produced by rubbing together two unlike things (as glass and silk), by the action of chemicals, or by means of a generator

a device for making, breaking, or changing the connections in an electrical circuit

**Let's Discuss:** *Why do we use symbols instead of images for circuits? In your workbook or with a partner, record, discuss, or share one 'real world' example of an open and closed circuit.*

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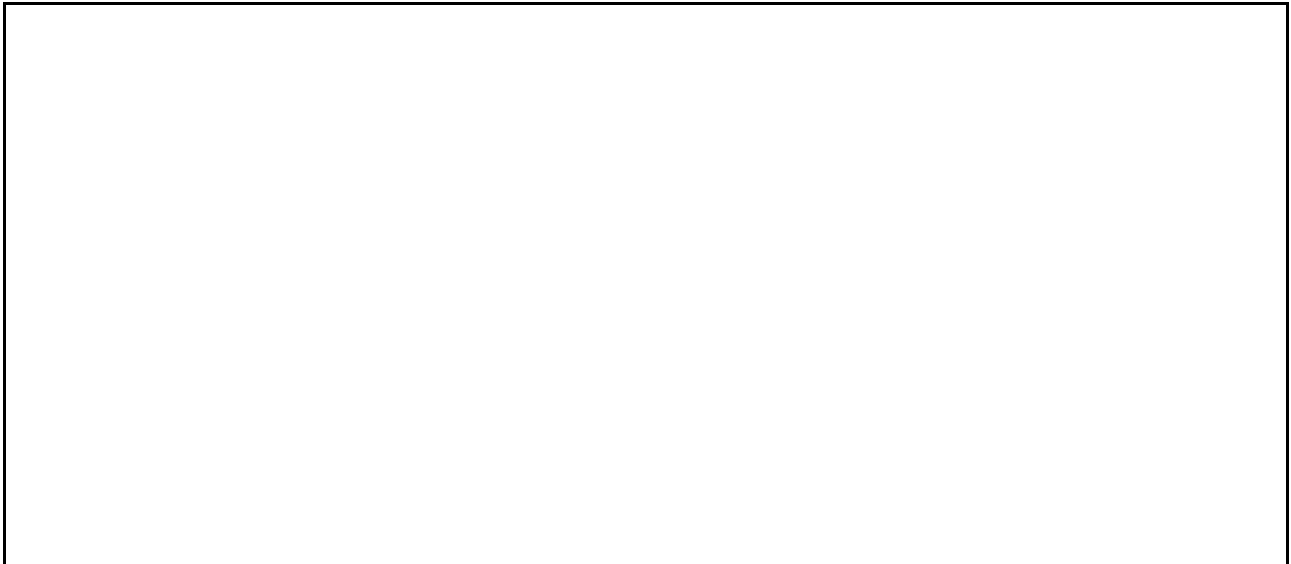


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## Lesson 4.1 - Exploring Circuits

### Student Workbook Component

Draw and label an open and closed circuit below.





### Challenge 2

Create a system that uses a switch to activate the RGB LED and Buzzer (/Sound Player)

#### Plan your system

##### 1. What blocks do you need?

 KEY PRESS	The Key Press block allows you to turn a system on or change any key on your keyboard into an input
 SOUND PLAYER	The Sound Player block enables you to choose and play an audio file. This produces sound when it receives a Boolean True value

**2. Sketch your plan:** Think about the SAM system you want to create and use the space below to draw it out.

- Which are your inputs and outputs? (*Remember inputs on the left connected to your output on the right*)
- How will they be connected together?
- What settings do you need to edit?

## Lesson 4.1 - Exploring Circuits

### *Student Workbook Component*

**We can use transitional phrases to talk about the order events or actions take place. Practice by using transitional phrases to discuss the steps you took to design your circuit.**

Time & Sequence	Compare (+)	Contrast (-)	Cause and Effect
first/second/third	also	but	because
next	equally	however	so
after	likewise	otherwise	therefore
finally/overall/to sum up	in addition	on one hand... ...on the other hand	as a result



## **Lesson 4.1 - Exploring Circuits**

*Student Workbook Component*