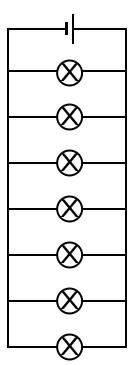
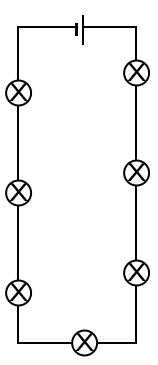
**Lesson 7: Adding Extra Loops**

**—**

**TASK 1: DIFFERENT TYPES OF CIRCUITS**

1 The two diagrams below show two different models of fairy lights.

Circuit 1 Circuit 2

1. Which circuit is a series circuit? ......................................................
2. Which circuit is a parallel circuit?.....................................................
3. On the parallel circuit, highlight a branch and circle a junction.
4. If a bulb breaks current **cannot** flow through it.

What will happen to Circuit 1 and Circuit 2 if **one** of the bulbs breaks?

.....................................................................................................

.....................................................................................................

.....................................................................................................

2 Here are two different circuits that can be made with one battery and three identical resistors.

**Circuit A Circuit B**

Look at each of the circuit diagrams below. For each, put a tick in one box to show if you think the circuit it shows is the same as Circuit A or Circuit B.

**a. b.**

**B**

**A**

**B**

**A**

**c.**

**B**

**A**

**d.**

**B**

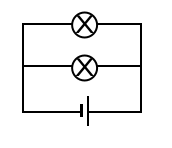
**A**

**B**

**A**

**e.**

**TASK 2: PARALLEL CIRCUITS**

****

1. A 3V battery is connected to 2 identical bulbs, as shown.
   1. What is the potential difference across bulb 1?

.......................................................

3V

* 1. What is the potential difference across bulb 2?

.......................................................

* 1. Explain your answer.

......................................................................................

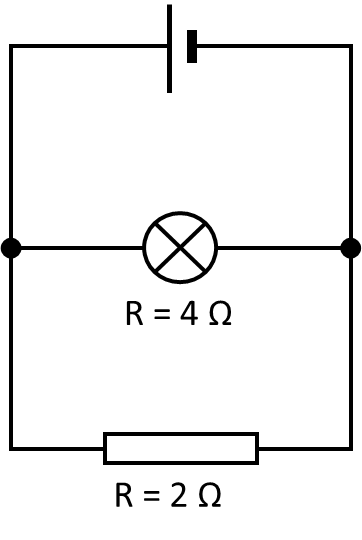
......................................................................................

* 1. The current through the battery is 2A. What will the current in each bulb be? Explain your answer.

......................................................................................

......................................................................................

1. Ali makes a circuit as shown in the diagram below.



Read the statements about current in this circuit.

What do you think about each one?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | I am **sure** this is right | I think this is right | I think this is wrong | I am **sure** this is wrong |
| **A** | Current through the resistor is the same size as the current through the bulb. |  |  |  |  |
| **B** | A bigger current flows through the bulb than the resistor because it is closer to the battery. |  |  |  |  |
| **C** | A bigger current flows through the resistor than the bulb because it has a smaller resistance. |  |  |  |  |