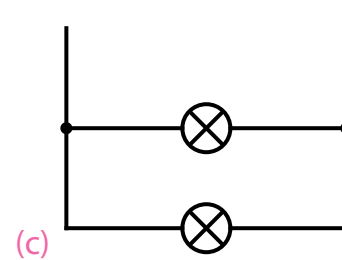
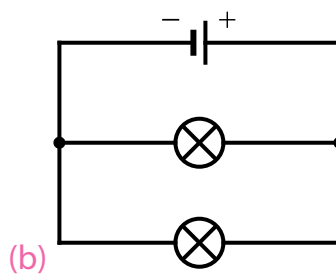
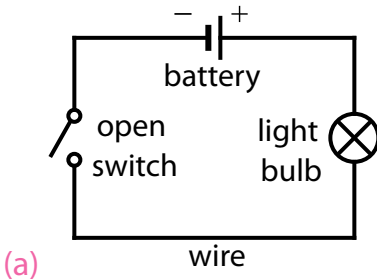


## Current and Circuits

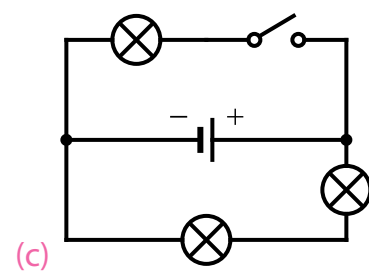
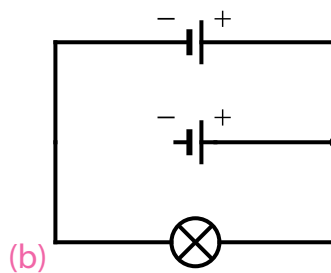
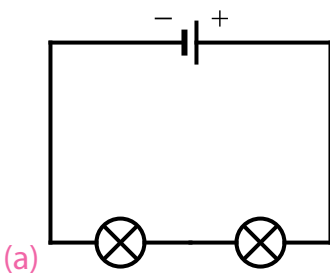
**Electric charges** travel round a circuit to create a \_\_\_\_\_. Current is measured in \_\_\_\_\_ (A).  
 The charges can be \_\_\_\_\_ or \_\_\_\_\_.  
 Electric charges are the \_\_\_\_\_ "material" in a circuit.  
 For a \_\_\_\_\_ to flow in a circuit, the circuit must form a \_\_\_\_\_. We say it is \_\_\_\_\_.  
 If the circuit is **open**, the current is \_\_\_\_\_.

- 1 Which of these four situations are closed circuits?
- (a) The bedside lamp is off. (c) The toaster is toasting bread.
- (b) The phone is charging. (d) A remote control has a missing battery.

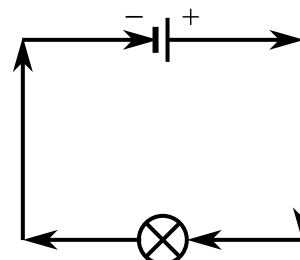
- 2 Which of these circuits are closed?



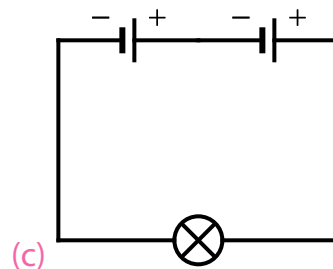
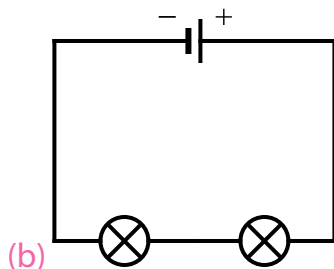
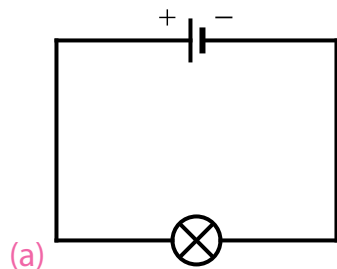
- 3 Draw around the closed loop in these circuits.



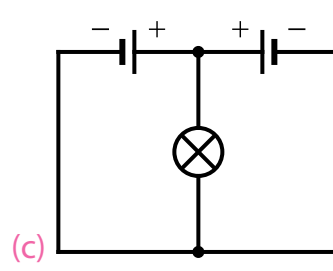
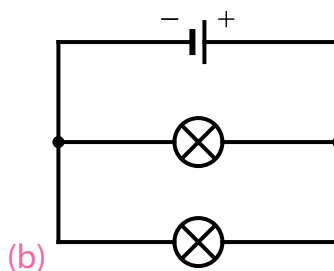
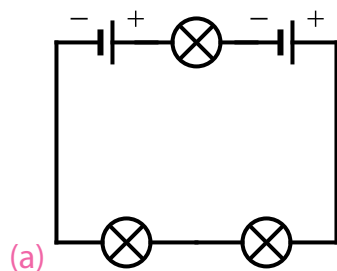
The direction of the \_\_\_\_\_ in circuits is the same as the \_\_\_\_\_ in which \_\_\_\_\_ charges would move.  
 \_\_\_\_\_ charges will be \_\_\_\_\_ (pushed away) from the \_\_\_\_\_ (+) terminal of the battery. They are \_\_\_\_\_ to (pulled towards) the \_\_\_\_\_ (-) terminal of the battery.



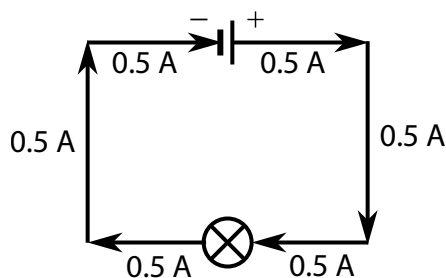
4 Draw arrows on the circuits in the direction of the current.



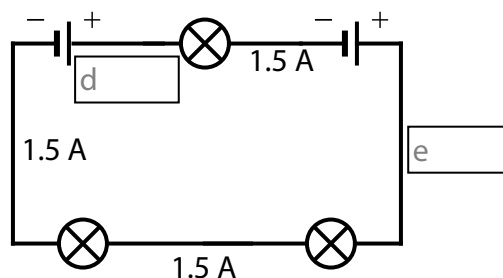
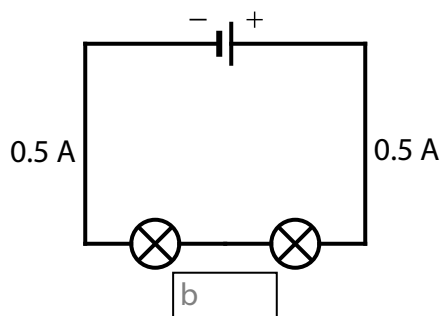
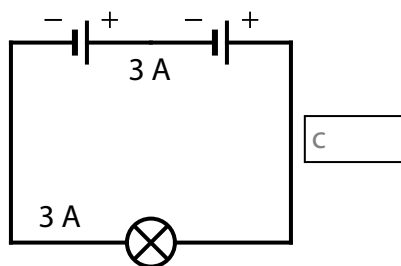
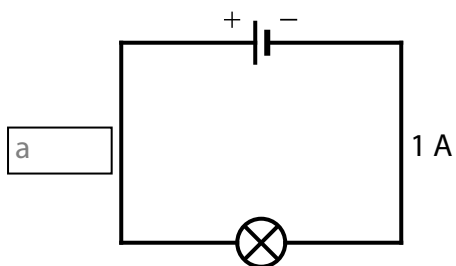
5 Draw arrows on the circuits in the direction of the current. Each line needs an arrow.



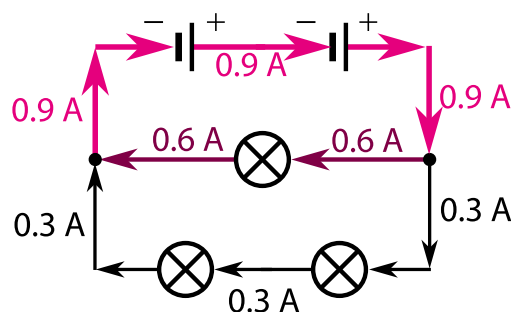
Similar to energy, current is \_\_\_\_\_.  
The total amount of \_\_\_\_\_ in a \_\_\_\_\_ circuit  
stays the \_\_\_\_\_ in all parts of the circuit at one  
time. This is an important rule of charge and  
current.



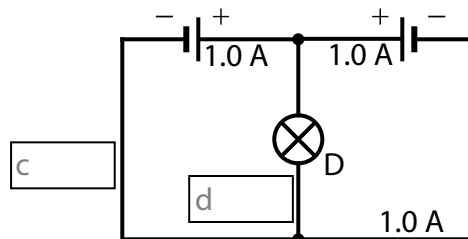
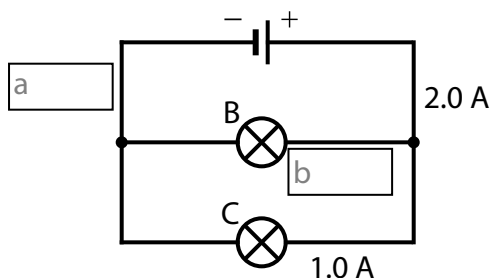
6 Write down the current in each of the boxes.



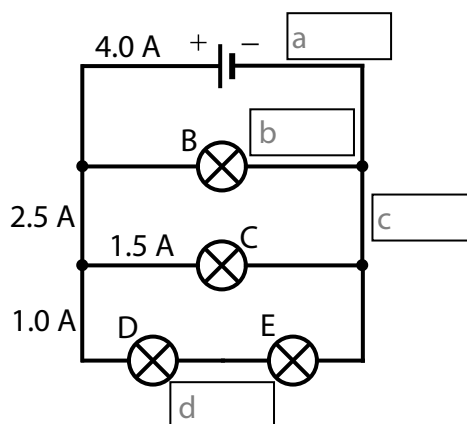
\_\_\_\_\_ circuits have \_\_\_\_\_. The \_\_\_\_\_ current \_\_\_\_\_ a junction must be the \_\_\_\_\_ as the \_\_\_\_\_ current \_\_\_\_\_ of the junction.



7 Write down the current in each of the boxes on the circuits from question 5.



8 Write down the current in each of the boxes.



If \_\_\_\_\_ light bulbs are \_\_\_\_\_ to each other on the \_\_\_\_\_ of the circuit, we say they are in \_\_\_\_\_. The \_\_\_\_\_ is the \_\_\_\_\_ between the two.

If \_\_\_\_\_ light bulbs are on \_\_\_\_\_ of the circuit, we say the \_\_\_\_\_ are in \_\_\_\_\_. The \_\_\_\_\_ is \_\_\_\_\_ through the two \_\_\_\_\_ of the circuit.

When \_\_\_\_\_ moves through a \_\_\_\_\_, the bulb \_\_\_\_\_. For identical light bulbs, the \_\_\_\_\_ current flowing through a bulb, the \_\_\_\_\_ it will be.

9 Fill in the sentences with the words **same**, **shared**, **most**, **brightness**.

(a) The current through two identical light bulbs in **series** will be the \_\_\_\_\_. They will have the same \_\_\_\_\_.

(b) The current through identical light bulbs in **parallel** will be \_\_\_\_\_. The bulb with the \_\_\_\_\_ current will be the brightest.

10 Go back to the circuits in questions 7 and 8. The light bulbs are identical in those circuits. Label which light bulbs will have the same brightness, which will be brightest and which will be dimmest.