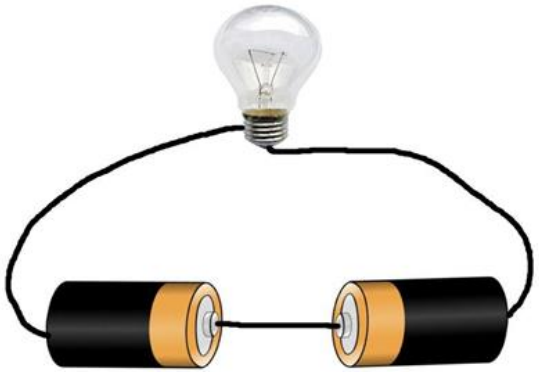
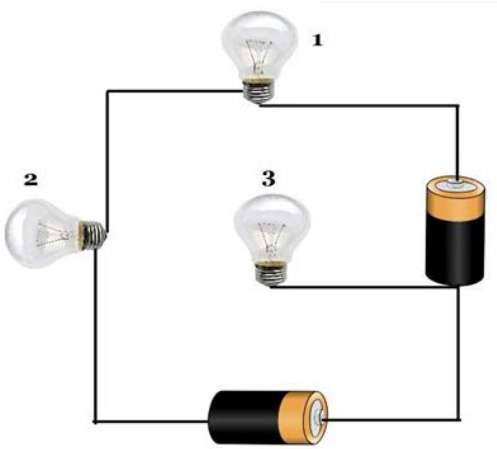
Will this circuit work?

- I do not think that this circuit will not work.
- I think that this circuit will work.



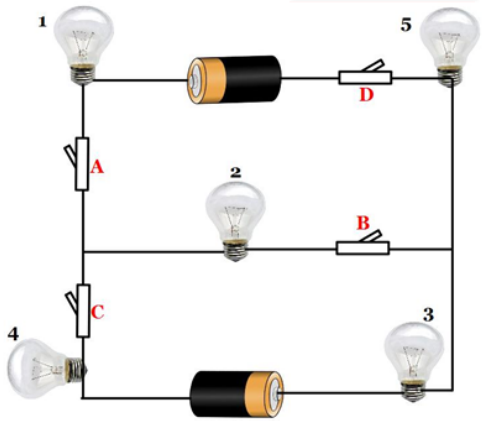
Which bulb(s) will light?

- Bulb 1
- Bulb 2
- Bulb 3



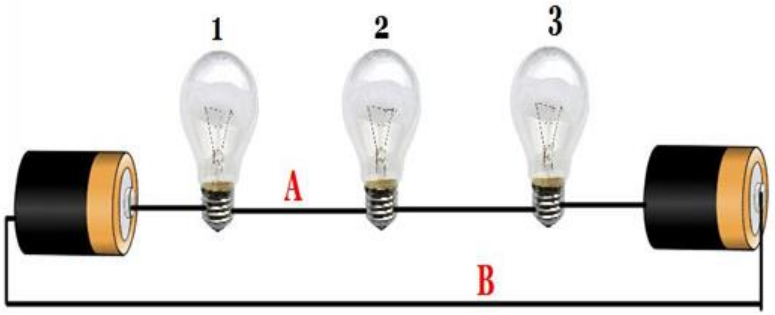
If all of the switches were open, which ones would you need to close in order to turn on bulbs; 2, 3, AND 4?

- Switch A
- Switch B
- Switch C
- Switch D



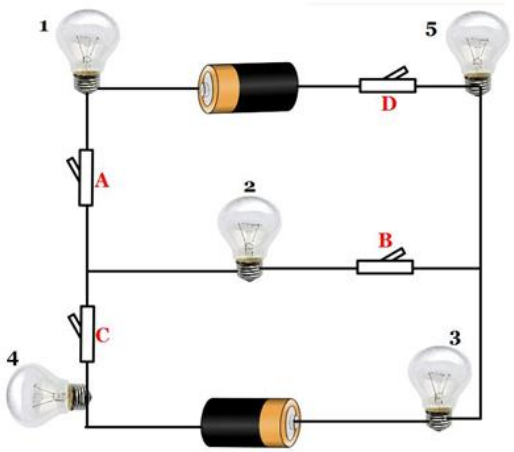
Which bulb(s) will go out if you cut at point "A" ?

- Bulb1
- Bulb 2
- Bulb 3



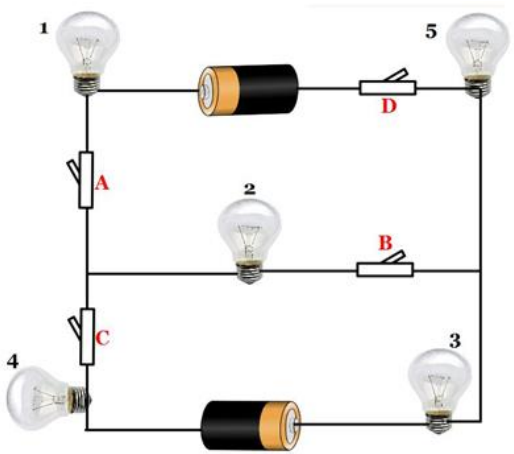
If all the switches were open, which ones would you need to close to turn on bulbs 1 and 3?

- ☐ Switch A
- ☐ Switch B
- ☐ Switch C
- ☐ Switch D



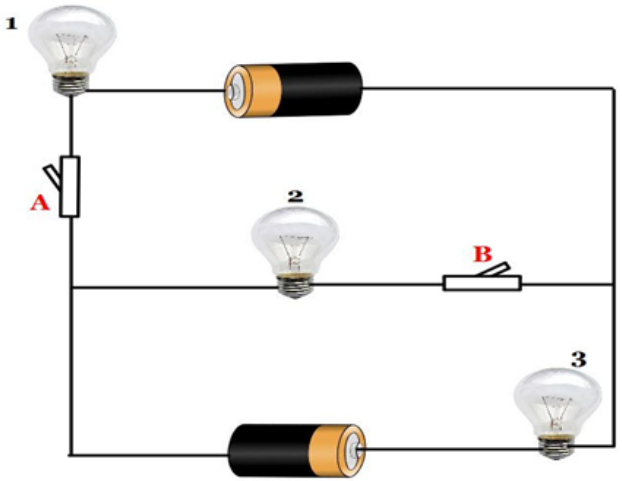
If all the switches were open, which ones would you need to close to turn on bulbs 2 and 4?

- ☐ Switch A
- ☐ Switch B
- ☐ Switch C
- ☐ Switch D



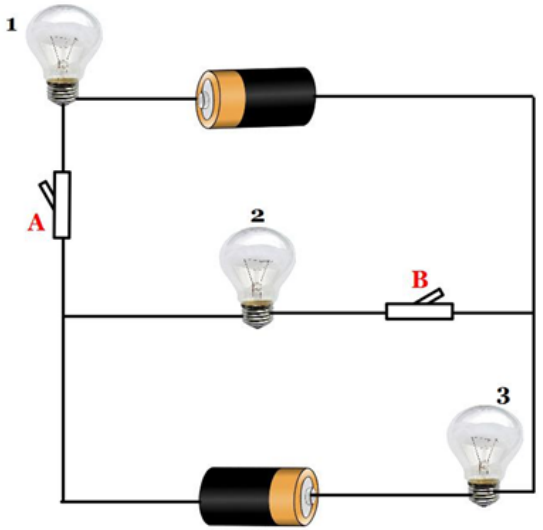
Which bulb(s) will light if switch A is open and switch B is closed

- ☐ Bulb 1
- ☐ Bulb 2
- ☐ Bulb 3



Select the bulb(s) that will light up if switch B is open and switch A is closed

- ☐ Bulb 1
- ☐ Bulb 2
- ☐ Bulb3

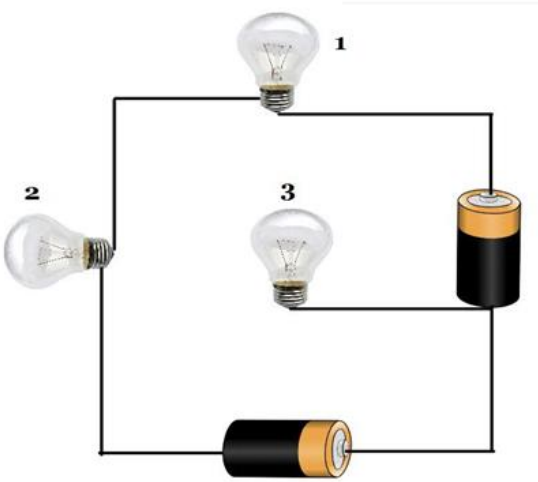


Will this circuit work?

- I do not think that this circuit will not work.
- I think that this circuit will work.

Which bulb(s) will light?

- Bulb 1
- Bulb 2
- Bulb 3



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- Switch A
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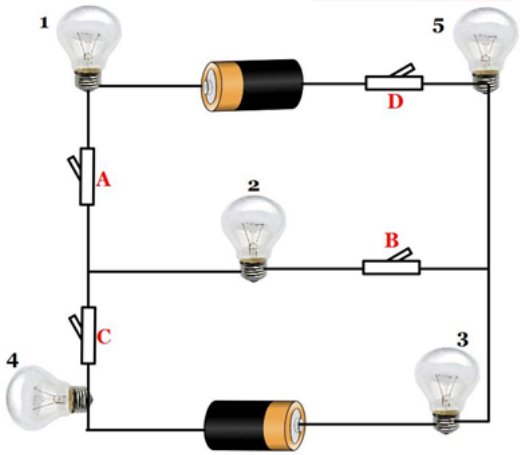
- Switch C
- Switch D



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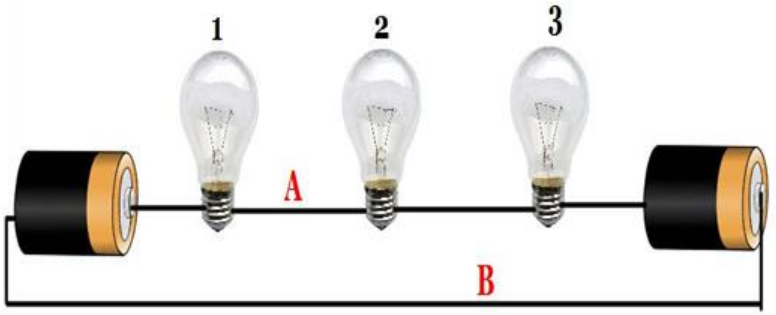
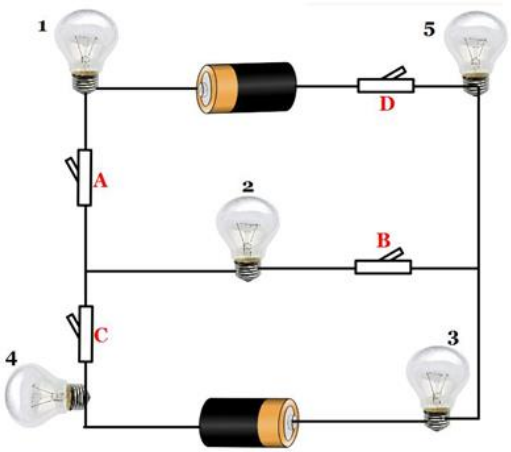
- Bulb 3



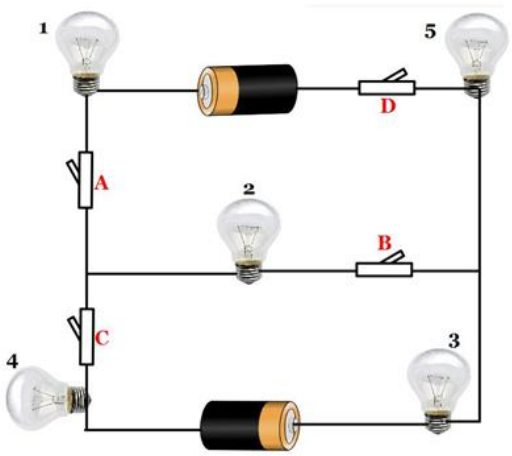
If all the switches were open, which ones would you need to close to turn on bulbs 1 and 3?

- [ ] Switch A
- [ ] Switch B
- [ ] Switch C
- [ ] Switch D



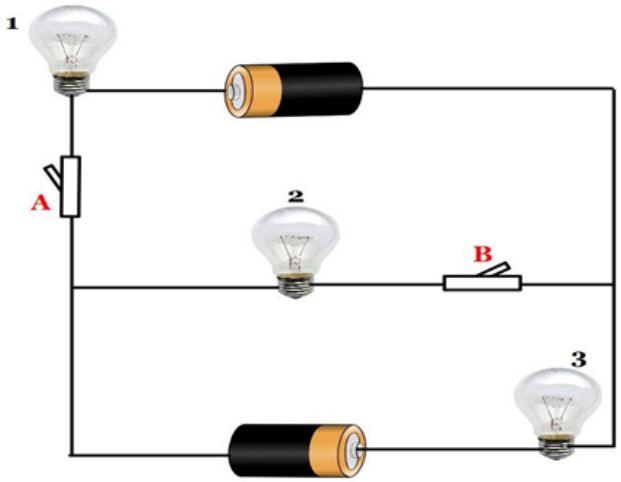
If all the switches were open, which ones would you need to close to turn on bulbs 2 and 4?

- [ ] Switch A
- [ ] Switch B
- [ ] Switch C
- [ ] Switch D



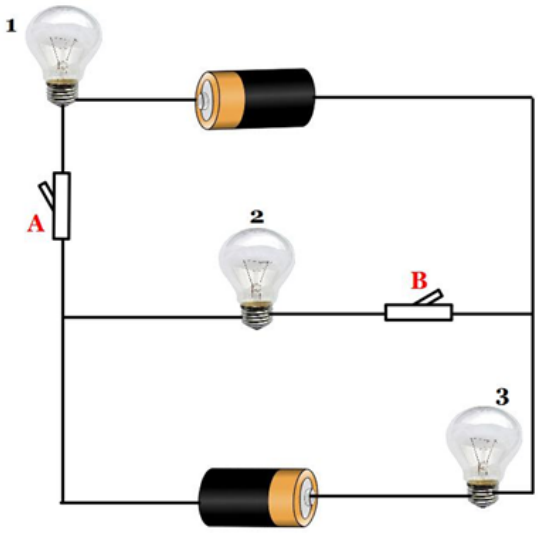
Which bulb(s) will light if switch A is open and switch B is closed

- [ ] Bulb 1
- [ ] Bulb 2
- [ ] Bulb 3



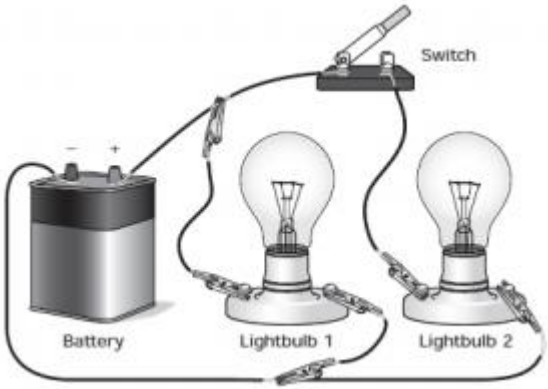
Select the bulb(s) that will light up if switch B is open and switch A is closed

- [ ] Bulb 1
- [ ] Bulb 2
- [ ] Bulb3



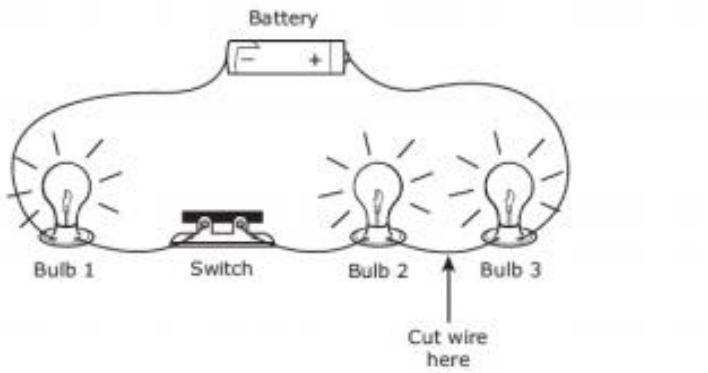
Analyze the diagram and discuss the following questions.

- What would happen to light bulb 2 if the wire was cut?
- What would happen to light bulb 1 if the switch was open?



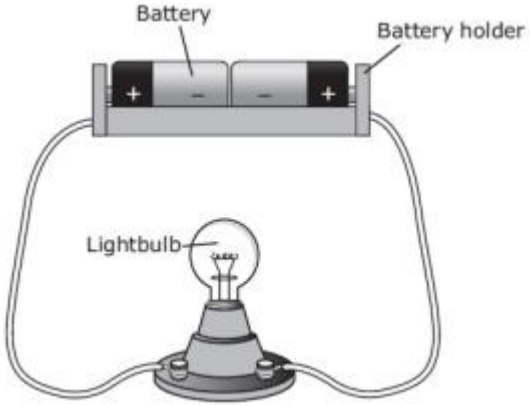
Analyze the diagram and discuss the following questions.

- What would happen to light bulb 2 if the wire was cut?
- What would happen to light bulb 1 if the switch was open?



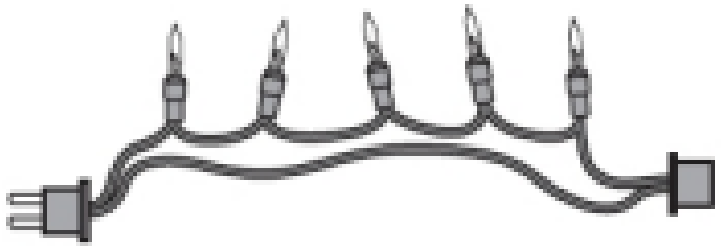
Analyze the diagram and discuss the following questions.

- What is wrong with this circuit?
- Explain if the bulb will or will not light up.



Analyze the diagram of the holiday lights and discuss the following questions.

- The Holiday lights are a series circuit. What would happen to the circuit if one light was removed. Explain your answer.

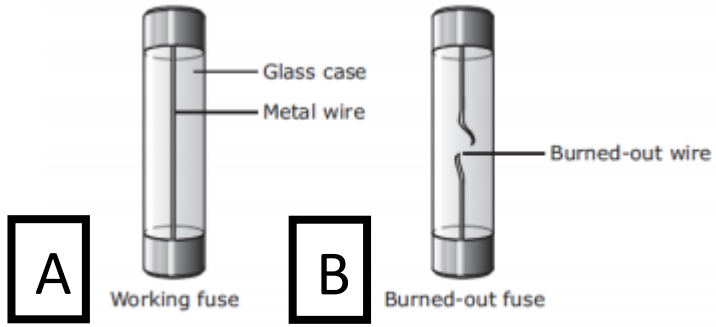


Analyze the diagram of the battery and discuss the following questions.

- What would happen if only one wire in a circuit was touching the metal post?
- Would the circuit produce energy? Why or why not?

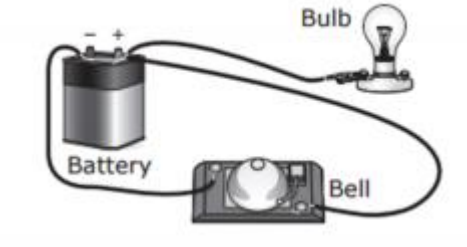
Analyze the fuse diagram and discuss the following questions.

- There are two fuses below. Fuses are used to close a circuit.
- What do you notice about the two fuses?
- If you had to use a fuse to close a circuit which fuse would you choose and why?



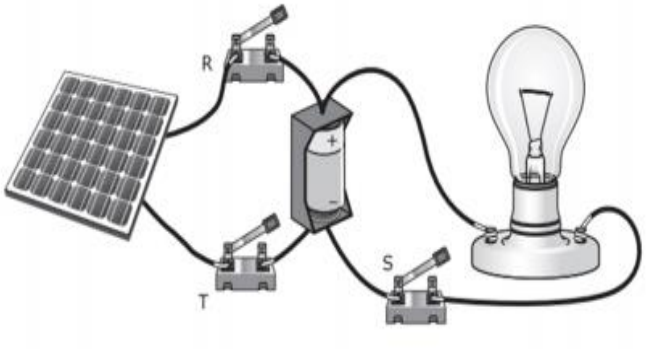
Analyze the diagram and discuss the following questions.

- What forms of energy will this circuit produce? Please explain your answer.



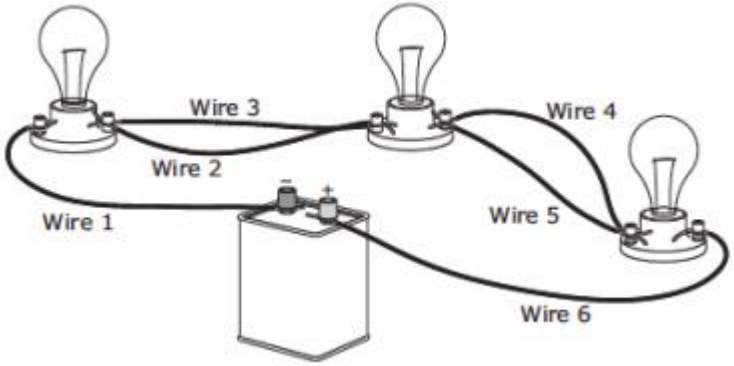
Analyze the diagram and discuss the following questions.

- The panel on the left is a solar panel.
- What would happen to the circuit if only switch S was closed?
- What would happen to the circuit if only switches R and T were closed?



Analyze the diagram and discuss the following questions.

- Which wires could be removed and still light all three light bulbs?

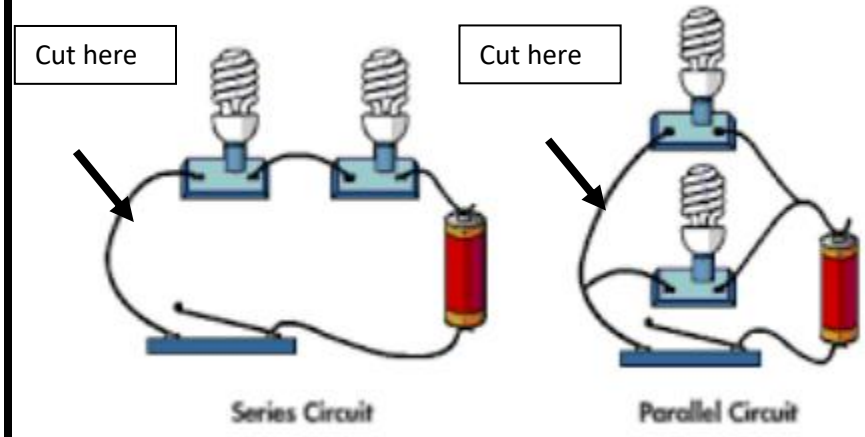


Analyze the diagram and discuss the following questions.

- What would happen if only switch 1 was closed?
- What would happen if only switch 2 was closed?
- What would happen if only switch 3 was closed?

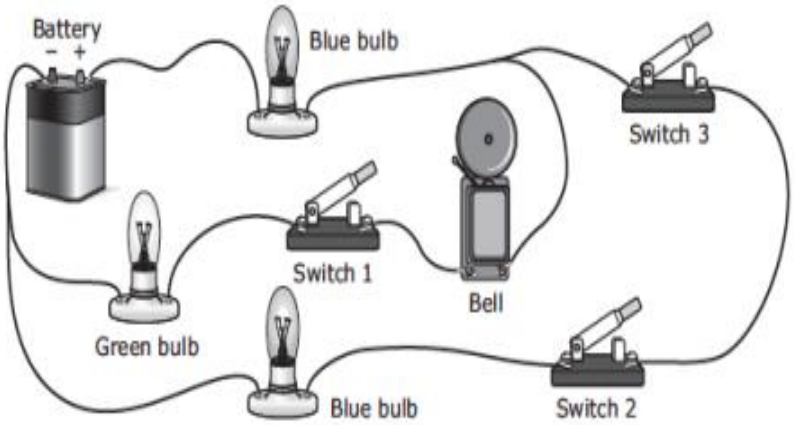
Analyze the diagram and discuss the following questions.

- Explain the difference is between a series and parallel circuit.
- If both switches were closed, what would happen if the wire were cut at the arrow for each diagram?



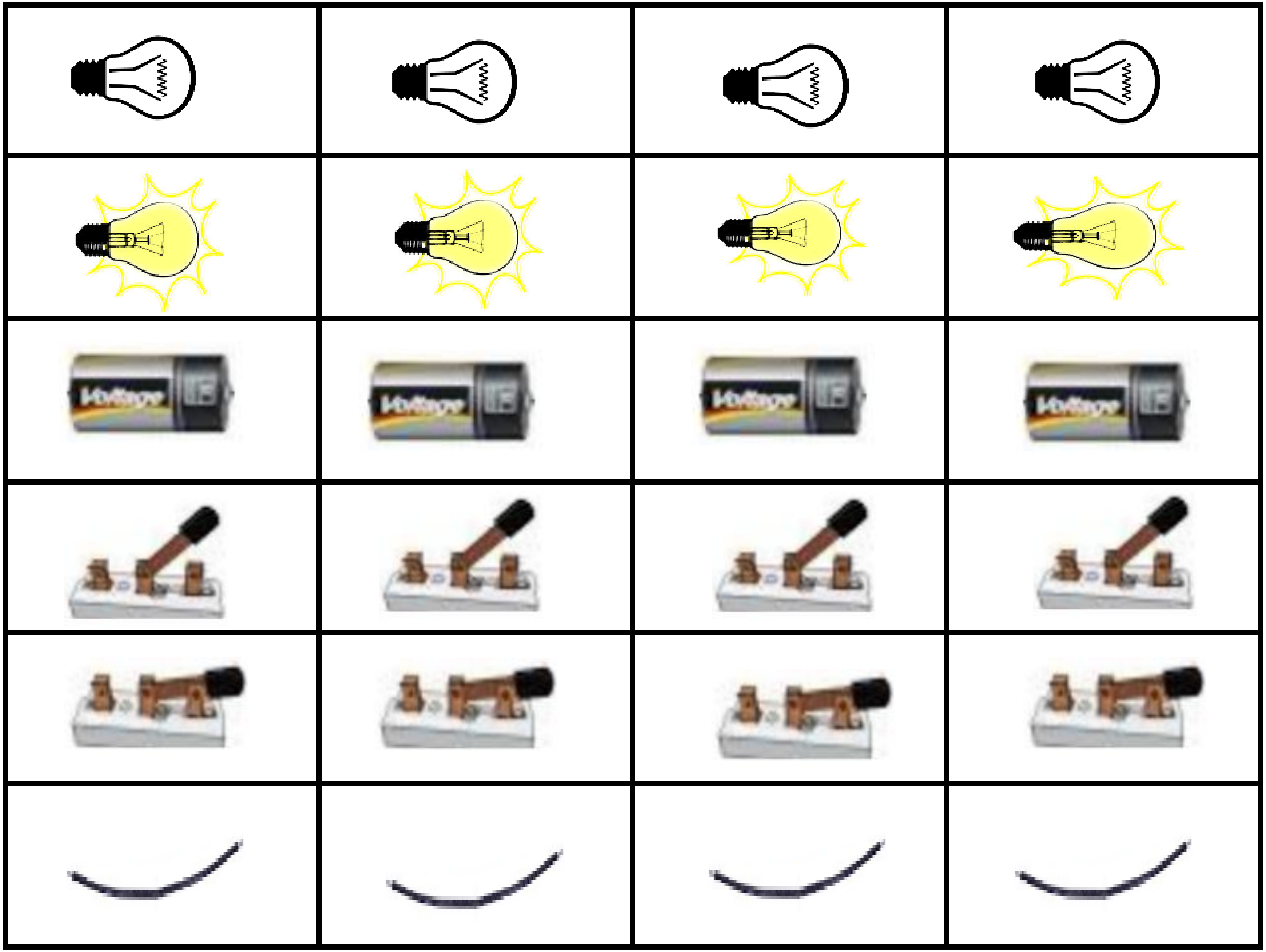
Analyze the diagram and discuss the following questions.

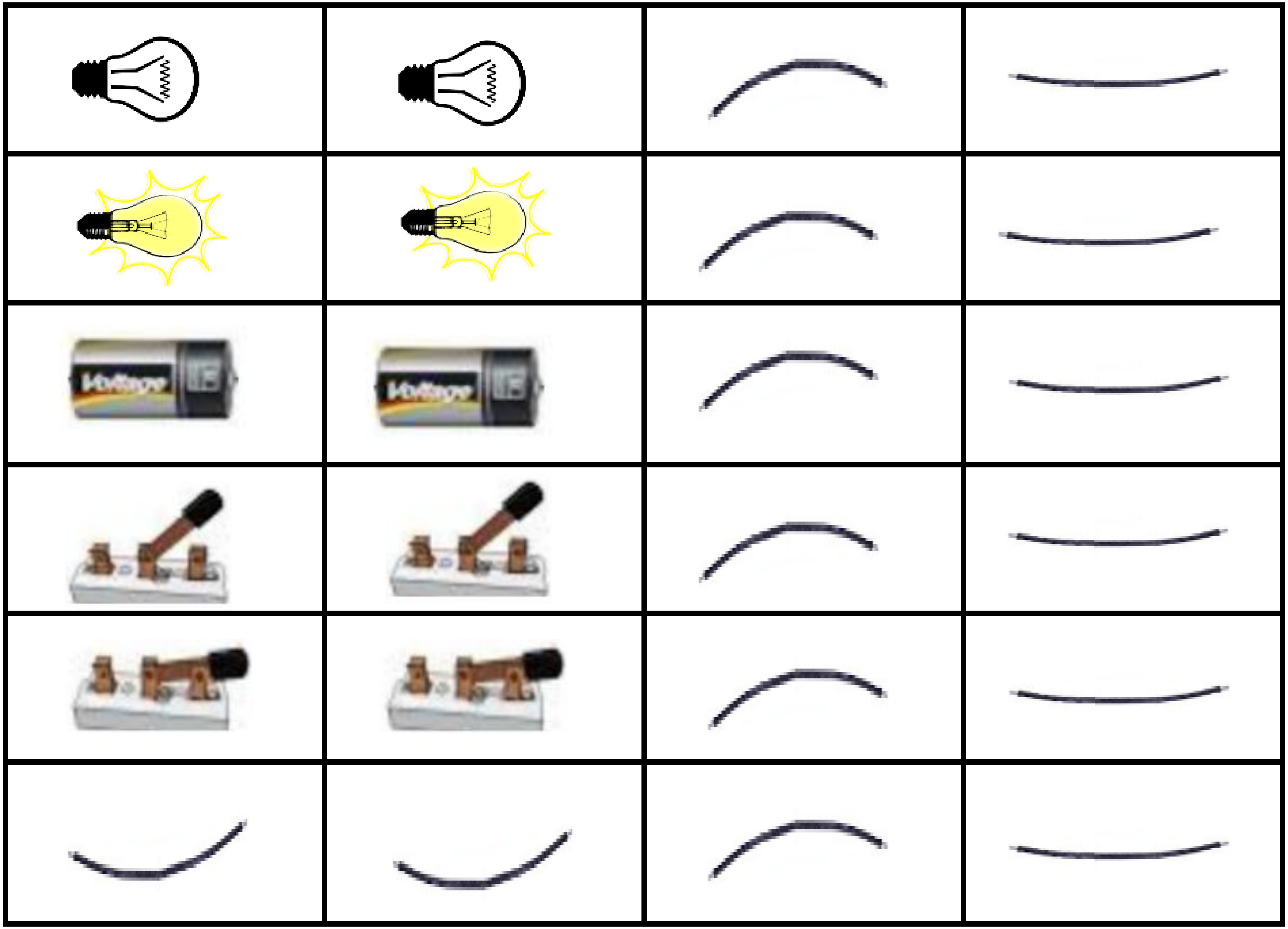
- What would you have to do to only light blue bulbs?
- Would it be possible to only produce sound energy in this circuit?
- What would you have to do to produce sound energy, blue, and green light?



Steps for circuits

1. Use the circuit cutouts to build the circuit in the picture. (Remember that the wires will not appear to touch on the cards. Teachers can also substitute wire cards with small pieces of wire.)
2. Label each component of the circuit.
3. Determine if the circuit is an open or closed circuit.
4. Say this circuit is a(n) (open, closed) circuit because_____.
5. Answer the question on the card.





LABELS

ON LIGHT BULB	ON LIGHT BULB	ON LIGHT BULB	ON LIGHT BULB
OFF LIGHT BULB	OFF LIGHT BULB	OFF LIGHT BULB	OFF LIGHT BULB
BATTERY	BATTERY	BATTERY	BATTERY
OPEN SWITCH	OPEN SWITCH	OPEN SWITCH	OPEN SWITCH
CLOSED SWITCH	CLOSED SWITCH	CLOSED SWITCH	CLOSED SWITCH
WIRE	WIRE	WIRE	WIRE
WIRE	WIRE	WIRE	WIRE