

To teachers We have prepared worksheets to accompany the experiments in the instructions, which you can copy and use in your teaching.



## Let's turn on the light (Type B) Worksheet

Name \_\_\_\_\_ Year \_\_\_\_\_ Class \_\_\_\_\_

How can the miniature bulb be lit?



### 1 Turn on the miniature bulb

- Find out how to connect the wires to the different parts of the battery to turn on the light.
- Check if the light is on even if the direction of the battery is reversed.

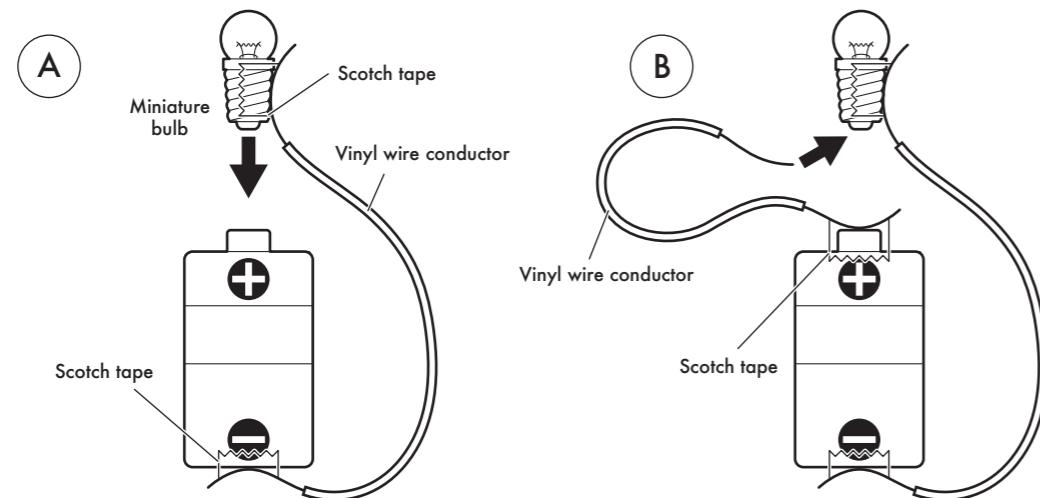
☆ In the boxes, write ○ when the light is on and ✕ when it is not.

method of connecting						
prediction						
results						



### 2 Turn on the light without a socket

- You can find out how to connect the battery and the wire to which part of the miniature bulb to turn on the light.



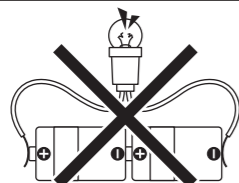
☑ A Does the miniature bulb come on?

Prediction	Result
Light up / Does no light up	Light up / Does no light up

☑ B Does the miniature bulb come on?

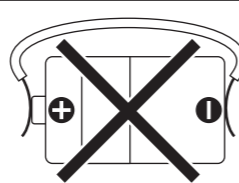
Prediction	Result
Light up / Does no light up	Light up / Does no light up

CAUTION



Do not connect  
two rechargeable  
batteries!

CAUTION



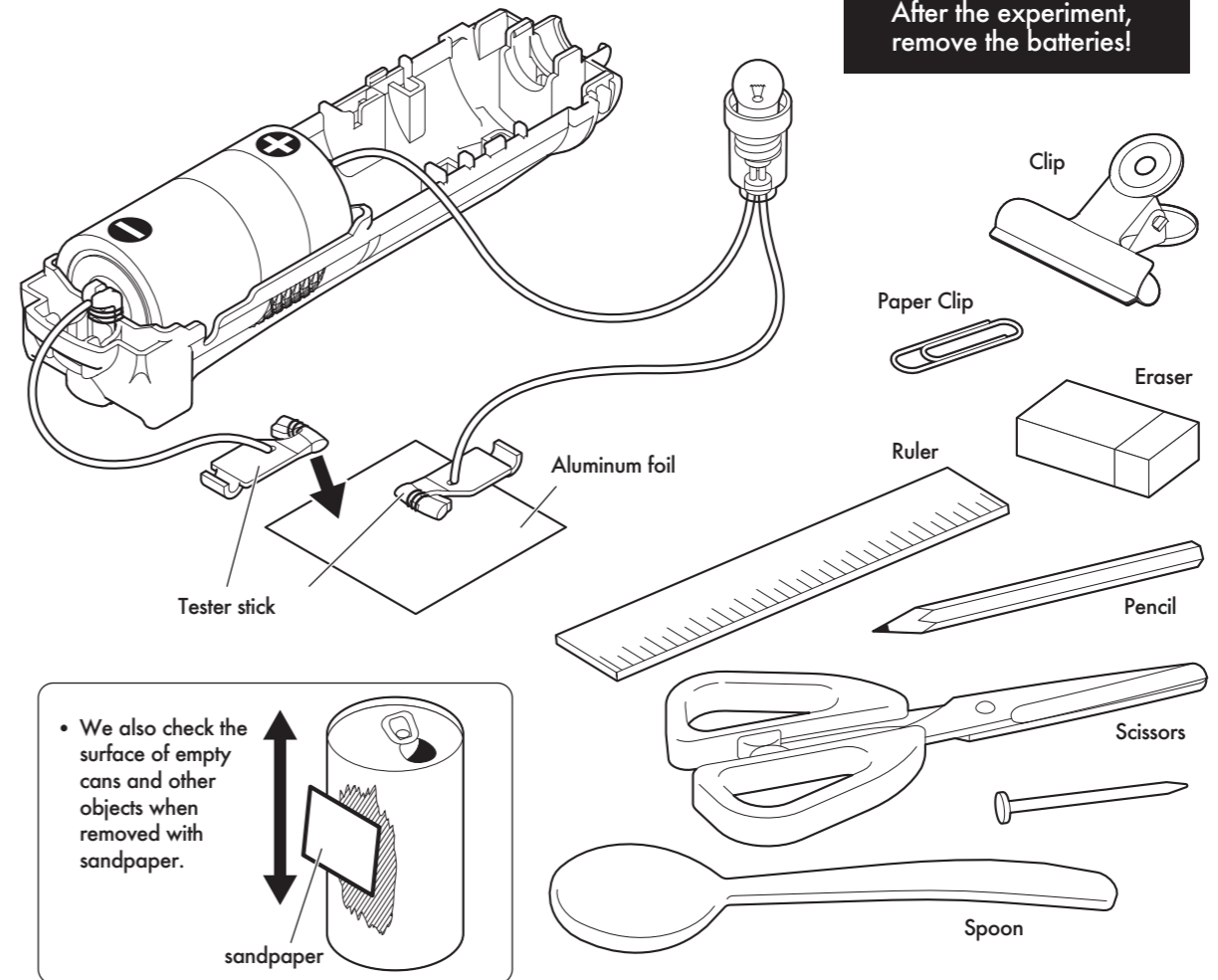
Don't just connect  
the wires to the  
batteries!

Let's find out what lights up and what doesn't.

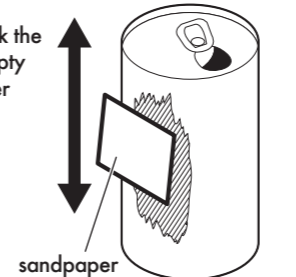


### 3 Things that conduct electricity and things that don't (tester experiment)

- Connect the wires as shown in the diagram and determine which ones light up and which ones don't.



- We also check the surface of empty cans and other objects when removed with sandpaper.



☑ In the boxes below, write ○ for the ones that light up and ✕ for those that don't.

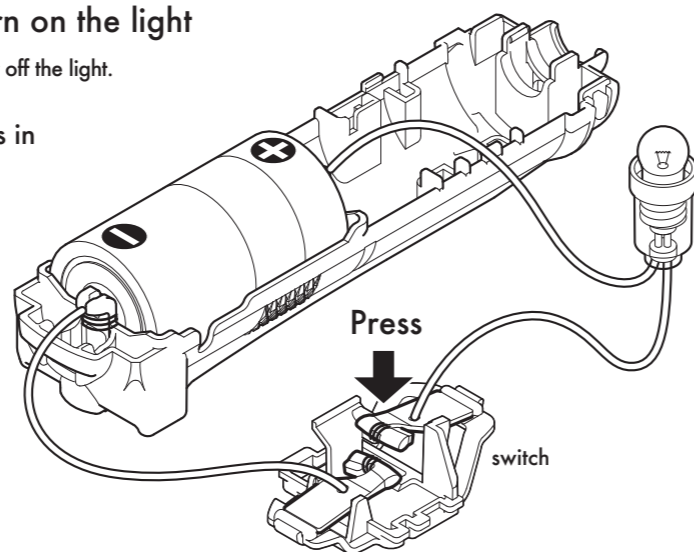
Checklist	Prediction	Result	Checklist	Prediction	Result
Aluminum foil					



## 4 Connect the switch and turn on the light

• Connect the switch shown in the figure to turn on or off the light.

- ☒ Let's think about what state the switch is in when the light comes on.

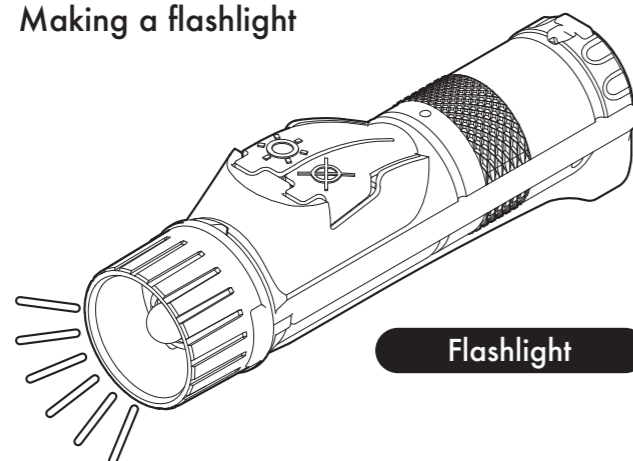


- ☒ Let's see what kinds of things we can find around us to turn on the lights.

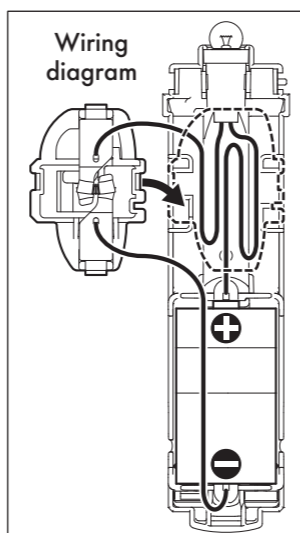
Let's try to make something that uses the mechanism of light.



## A Making a flashlight



Flashlight



Wiring diagram

- ☒ Write the words in the empty space below to indicate the cause and how to fix the problem when the light does not shine.

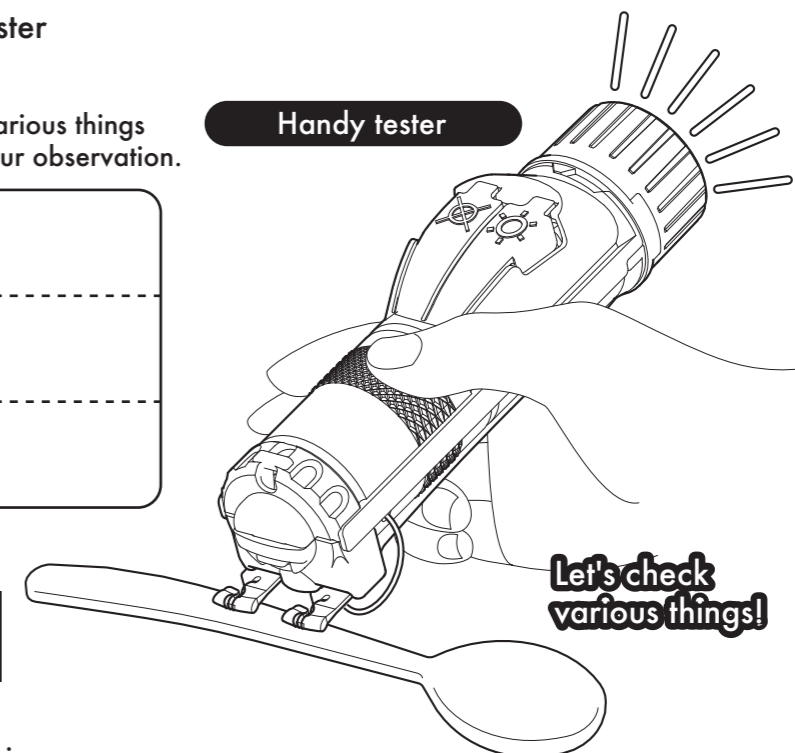
Cause	Solution
Are the wires connected in the wrong way?	→
Are the wires damaged or disconnected?	→
Is the light bulb in the socket loose?	→
How are the wires or switches connected to the batteries?	→
Are the batteries weak?	→



## B Making a handy tester

- ☒ With a handy tester, let's test various things around you and write down your observation.

After experiments, be sure to remove the battery!



Handy tester

Let's check various things!

- ☒ Write your impressions of learning.

- ☒ You can cut out the illustrations and use them in your notebooks for further study.

