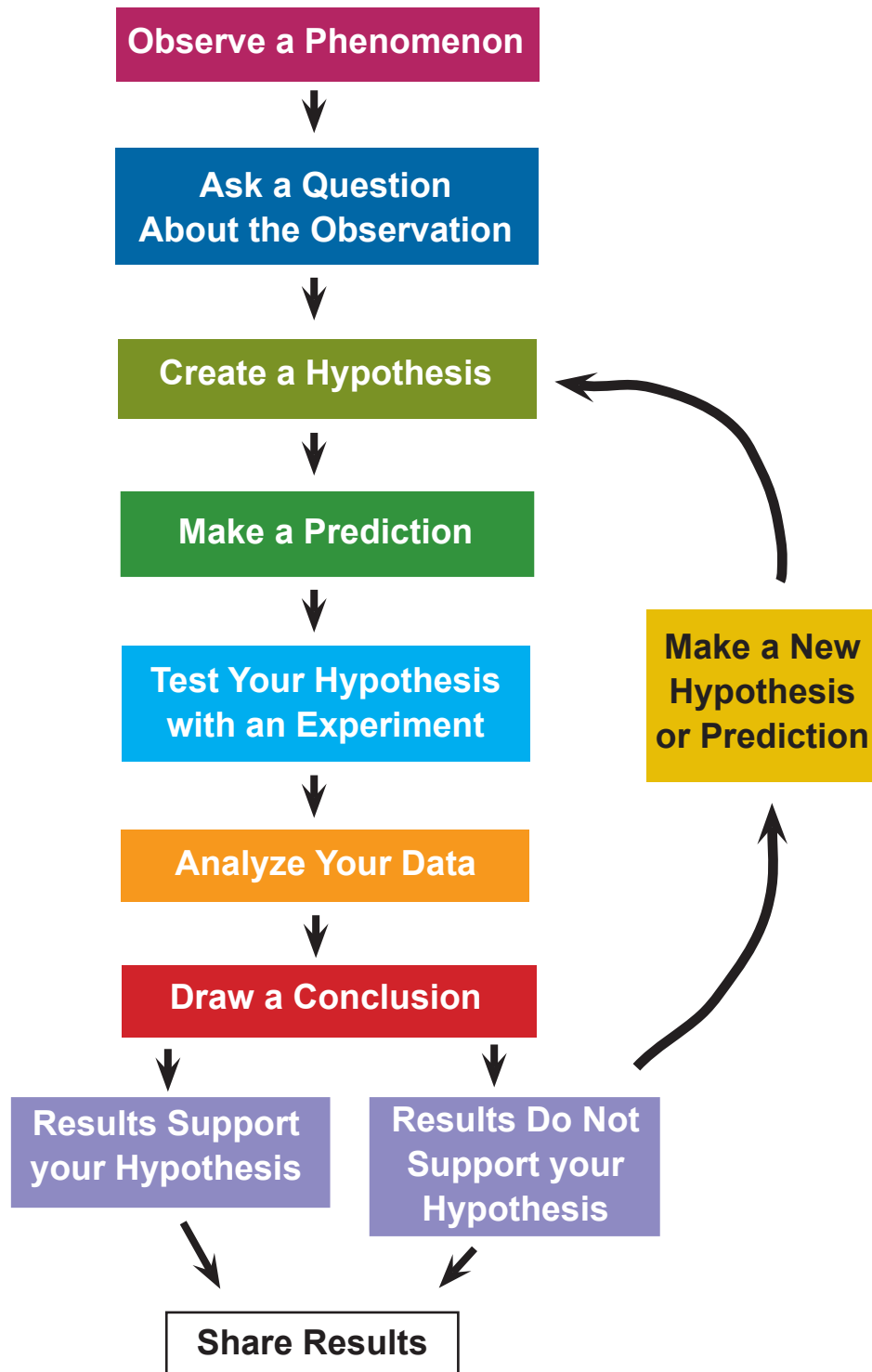


# Scientific Method

The scientific method is the process scientists have used over time to answer questions about the world. Though there are many variations to how scientists “do science,” there are some basic steps that can be applied to the process to create a logical problem-solving approach. That said, these are not set in stone and scientists often use a variation of this approach.

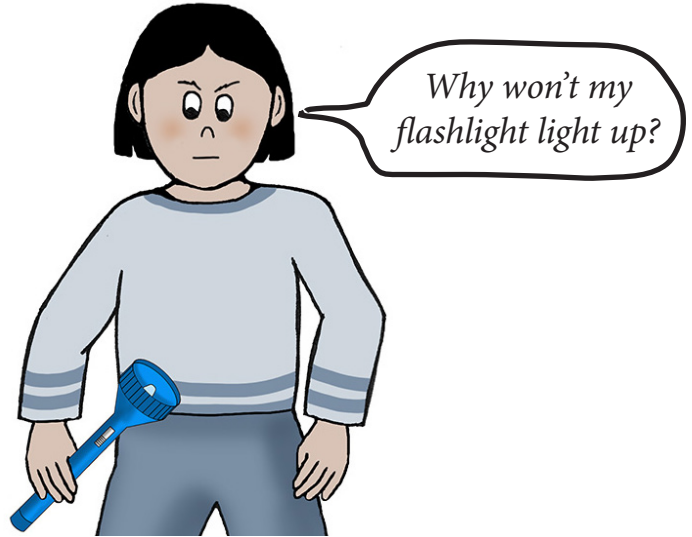


# Scientific Method Illustrated

## 1) Observe a Phenomenon

You see something interesting.

*I turned on my Flashlight, but it doesn't light up?*



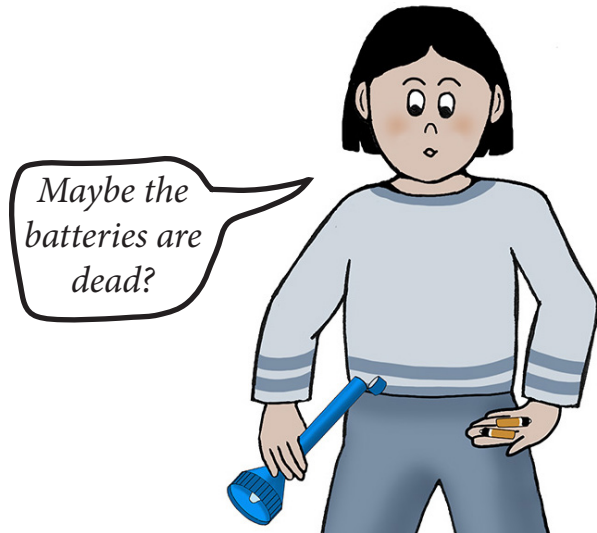
## 2) Ask a Question about the Phenomenon

You ask a question about why it happened.

*Why won't my flashlight light up?*

## Do Background Research

Rather than starting from scratch, it is always worth researching what others have found out about this phenomenon. Do an internet search.



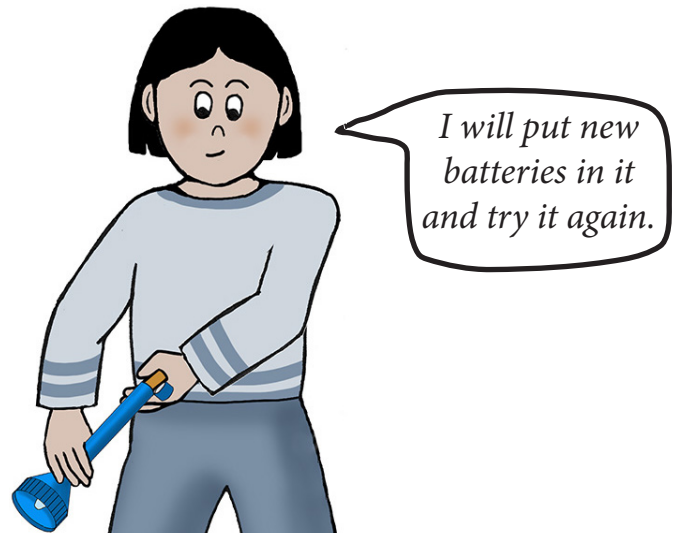
## 3) Create a Hypothesis

This is a possible answer to the question that can be tested. In this phenomenon, it would be: ***Maybe the flashlight doesn't light up because the batteries are dead.*** If, after testing, it is wrong, we can create a new hypothesis (e.g. the bulb may be broken?)

## 4) Make a Prediction

This is what we expect to see if the hypothesis is correct - that the batteries are dead.

***If I put new batteries in my flashlight, it will work.***



## Scientific Method Illustrated continued...

### 5) Test your Hypothesis

To test your hypothesis, you run a test (an experiment) about your prediction.

***Put in new batteries and try it.***

### 6) Analyze your Data

Look at your results compared to your prediction and hypothesis.

***Did the flashlight work after adding new batteries?***

### 7) Draw a Conclusion

Did the results match your hypothesis?

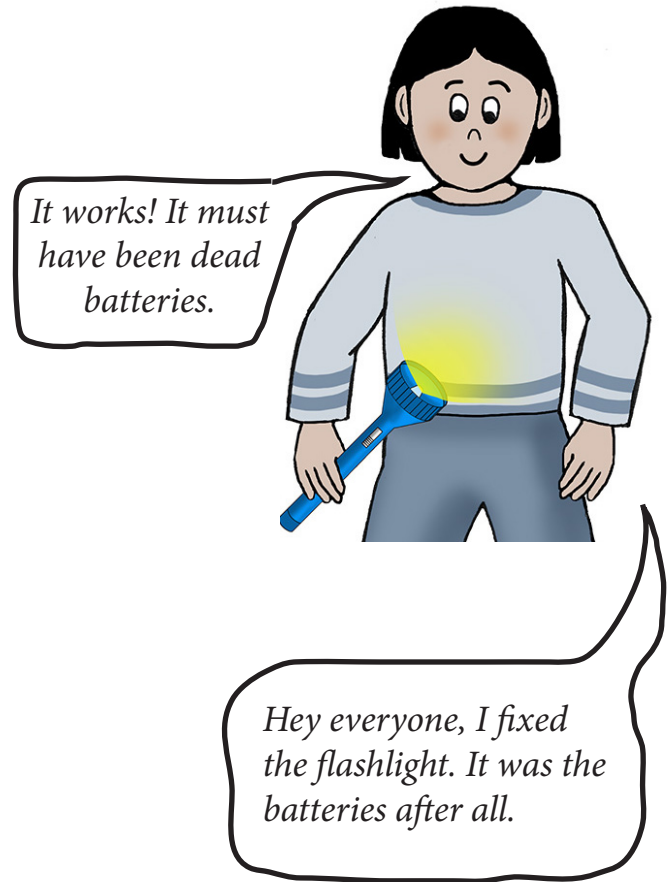
***It worked! The battery's were dead.***

If the flashlight works with new batteries, then the hypothesis is supported by the evidence.

If the flashlight still does not work, then the hypothesis is not supported by the evidence and is probably incorrect.

### 8) Share Your Results

Whether your hypothesis was supported or not, scientists share their results.



### 7a) Create a New Hypothesis and Prediction

This is another possible answer to the question that can be tested.

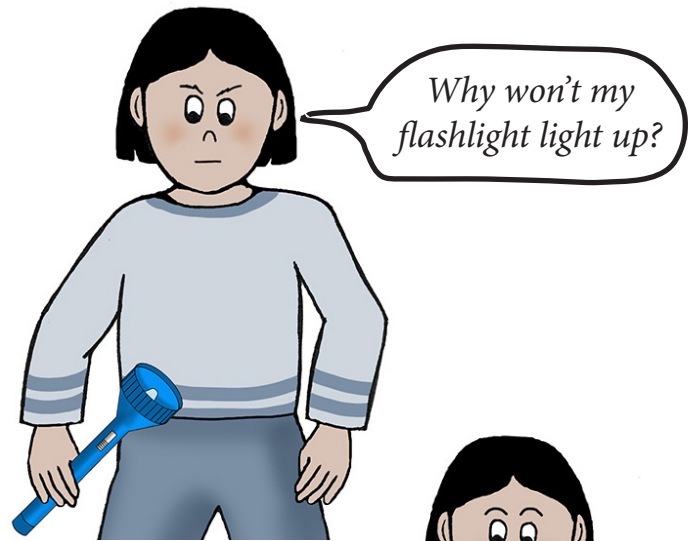
**Maybe the bulb has burned out?**

# Scientific Method Illustrated

## 1) Observe a Phenomenon

You see something interesting.

*I turned on my Flashlight, but it doesn't light up?*



## 2) Ask a Question about the Phenomenon

You ask a question about why it happened.

*Why won't my flashlight light up?*

## Do Background Research

Rather than starting from scratch, it is always worth researching what others have found out about this phenomenon. Do an internet search.

## 3) Create a Hypothesis

This is a possible answer to the question that can be tested.

*Maybe the flashlight doesn't work because the batteries are dead.*

## 4) Make a Prediction

This is what we expect to see if the hypothesis is correct.

*If I put new batteries in the flashlight, it will work.*

## 5) Test your Hypothesis

To test your hypothesis, you run a test (an experiment).

*I will put in new batteries and try it.*

## 6) Analyze your Data

Look at your results compared to your hypothesis/prediction.

*Did the flashlight work after adding new batteries?*

## 7) Draw a Conclusion

Did the results match your hypothesis?

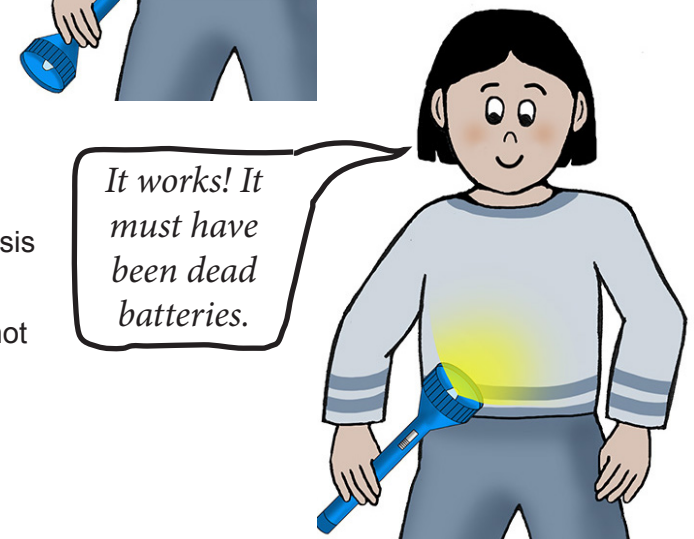
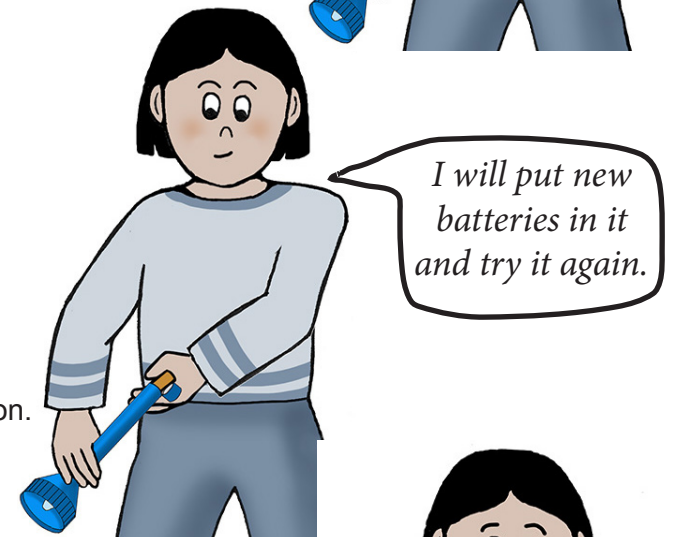
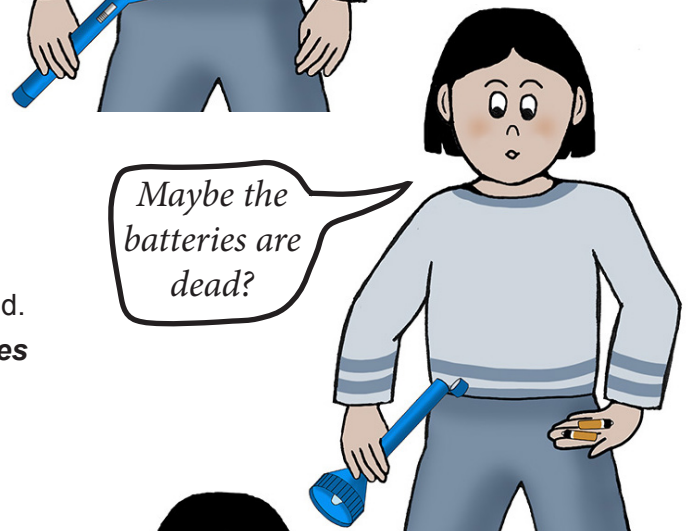
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Whether your hypothesis was supported or not, scientists share their results.



# Scientific Method

**Observe a Phenomenon**

**Ask a Question**

**Create a Hypothesis and Make a Prediction**

**Test Your Hypothesis**

**Analyze Your Data**

**Draw a Conclusion**