

SCIENTIFIC METHOD

- Guideline to the Scientific Method
- Worksheet to fill in with your own experiment
- Easy instructions
- Fun way to learn STEM techniques

A **STEM**fulmind

Note to parents: This worksheet is intended to be used in combination with the [STEM experiment: Why do things float or sink?](#) The materials in this worksheet can be used as they are, or you can use them as inspiration to adapt them to your child. Feel free to skip parts or to use only the ones that your children are more interested in.

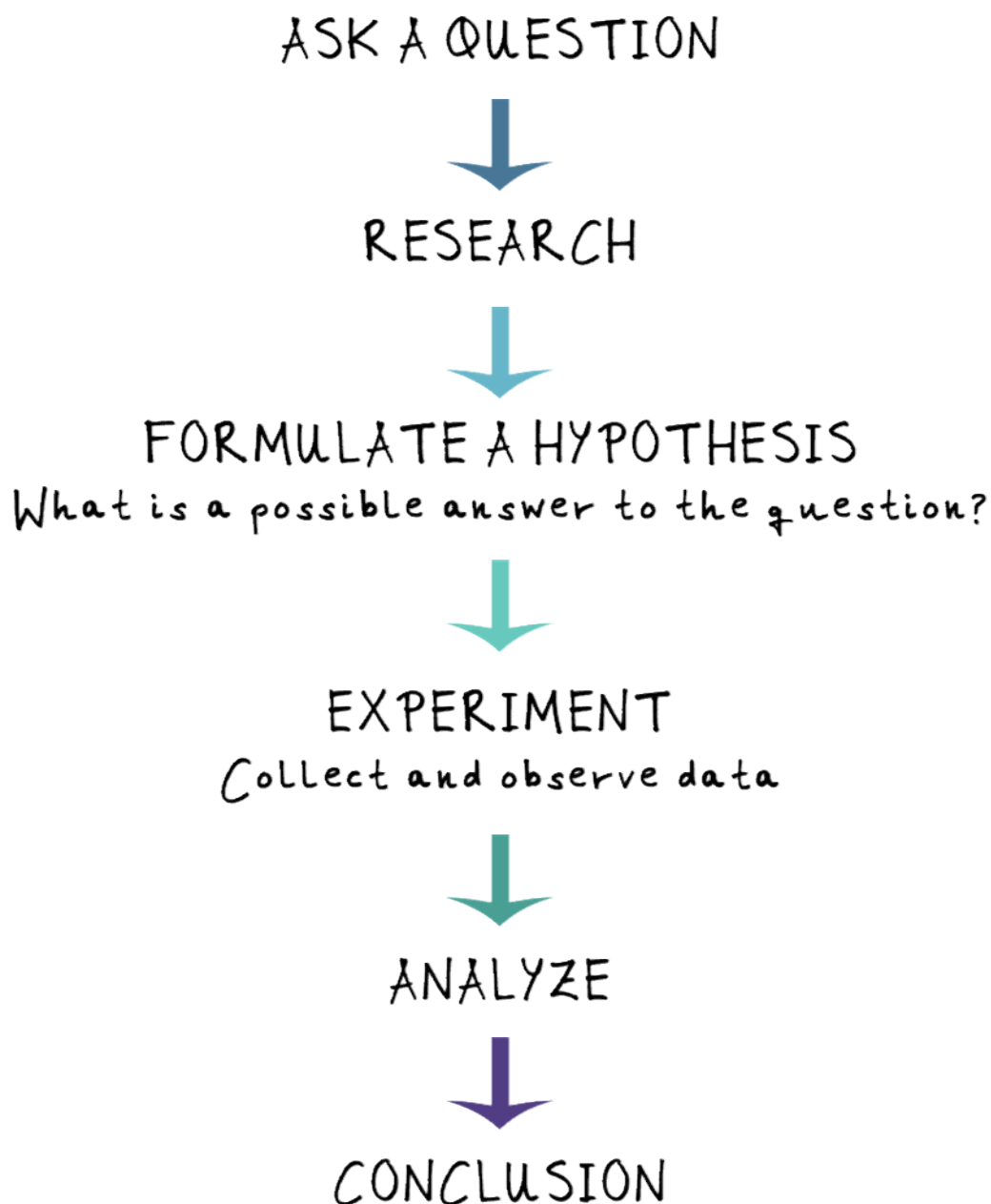
Happy STEM learning!

A **STEM**fulmama

SCIENTIFIC METHOD

The scientific method is a tool used by scientists to structure their research when trying to answer questions about the world. The aim of the scientific method is to make the process of experimenting and discovering more efficient and effective. It is a structured approach to finding out how the world works and scientists use it all the time.

It involves the following steps:



QUESTION

Write down some ideas or anything that comes to mind about the following question:

Why do things float or sink?

RESEARCH

Write down things that float:

Object	How big is it?	What is it made of?	Other observations

Materials checklist (check the materials you think float in water):

- Wood: does a stick float?
- Plastic: does an empty water bottle float?
- Cloth: does your T-shirt float?
- Metal: do coins float?
- Sand
- Stones
- Leaves
- Glass: does a glass cup float?
- Cotton
- Paper

Does size matter? (think of a boat and a coin)

Do big things float or sink?

Do little things float or sink?

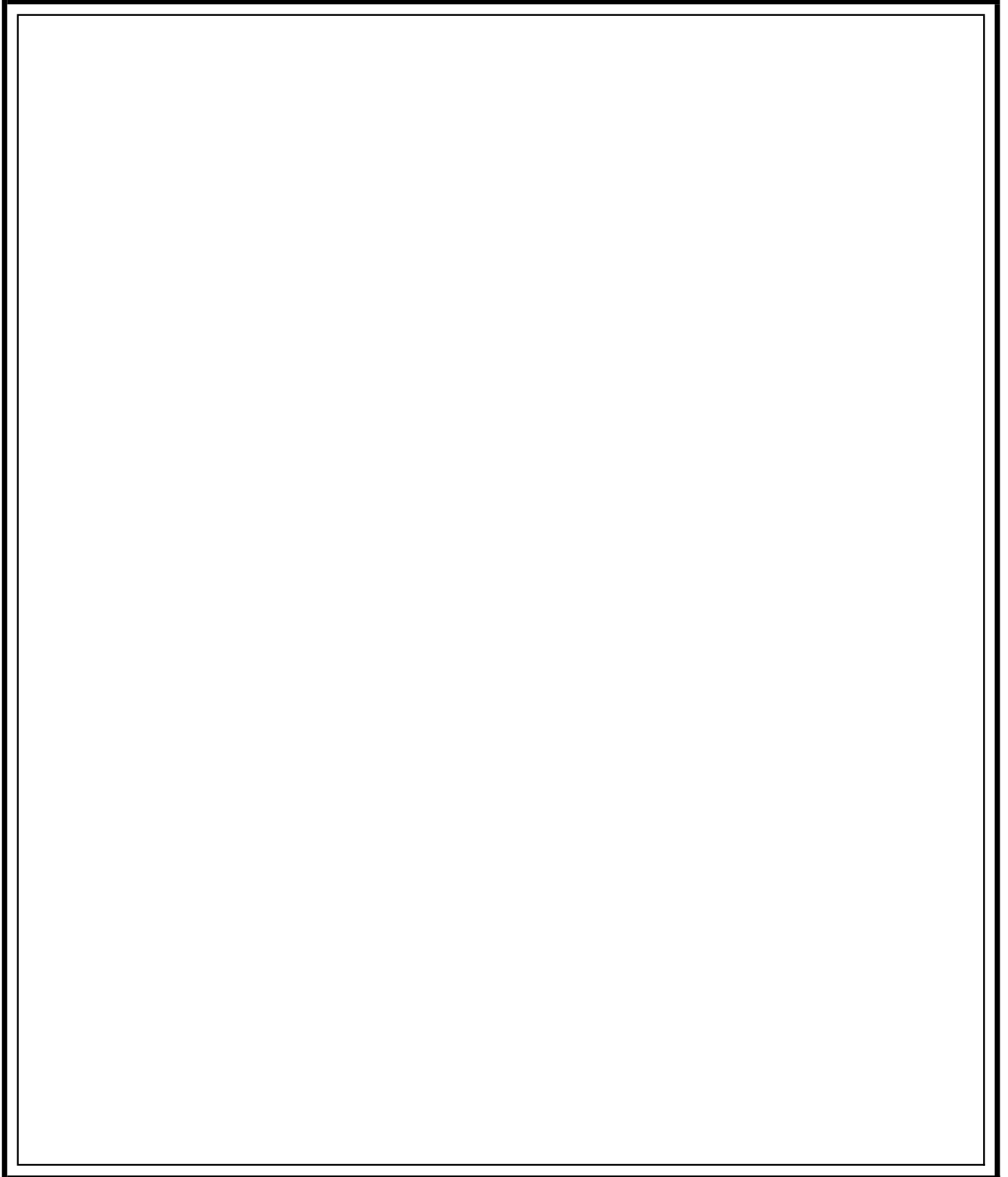
Does shape matter? (think of a piece of paper)

Does the paper float when it is flat?

Does the paper float when it is made into a ball?

RESEARCH

Here you have more space to write down more research and observations:

A large, empty rectangular box with a double black border, intended for writing research and observations. The box is positioned below the introductory text and occupies most of the page's vertical space.

HYPOTHESIS

Look at your research and observations and formulate a hypothesis:

What is a hypothesis?

- A hypothesis is an idea or explanation for something that needs to be proved
- A hypothesis tries to answer the question of your research
- A hypothesis is proved through experiments and testing

A hypothesis is expressed in simple and easy forms, you can choose one of the following:

- Things made out of _____ float/sink
- Things that are _____ float/sink
- Floating depends on _____

To fill in the blank here is some suggested vocabulary:

plastic

full of air

size

wood

no air inside

big

heavy

weight

shape

light

material

small

Time to write down your hypothesis (you can write down more than one):

CONCLUSION

- Your experiment helped answer the question
- You were able to find an answer to why things float or sink
- Your hypothesis was tested (it is now a true or false statement)
- Nothing could be changed
- Nothing could be improved
- Nothing could be done differently
- There is no way to make the research better

*If you have checked all the boxes above you are done! **CONGRATULATIONS!** The experiment you designed to test your hypothesis was successful. If any of the boxes are left unchecked you can revisit your experiment and think about what you could do differently to improve your research.*

Reflective analysis: write down your experience and thoughts about the experiment.

Did it go better or worse than expected? Why? Could you have done anything differently?

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Worksheet by:

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