THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

STAGE 5 · SCIENCE · WORKING SCIENTIFICALLY

Working scientifically

How to ask a question, set up something that answers it, and say honestly what the answer was.

WHAT IS INSIDE

- The five kinds of enquiry
- One enquiry written out
- A page to plan on
- Enquiry 1
- Enquiry 2
- Enquiry 3
- Enquiry 4
- Enquiry 5
- When you think you have finished

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No answers at the back. These are enquiries to run.

Written for a parent teaching at home. No training assumed, and nothing else to buy.

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One enquiry written out

This is the shape. Yours should have the same rows in it.



ONE ENQUIRY, WRITTEN OUT IN FULL

The question	Does water evaporate faster somewhere warm?
Which kind of enquiry	A fair test, because I can change one thing on purpose.
Prediction, and why	It will evaporate faster somewhere warm, because evaporation happens faster when it is warmer.
The one thing changed	Where the saucer is: one warm place, one cool place.
Kept the same	The same saucer, the same amount of water, the same number of days, both out of the wind.
What was measured	How far the water level has dropped, in millimetres, every day for four days.
What happened	Day 1: warm 2mm, cool 1mm. Day 2: warm 5mm, cool 2mm. Day 3: warm 7mm, cool 2mm. Day 4: warm 10mm, cool 3mm.
Conclusion	The water in the warm place went down more than three times as far. That supports the prediction.
What was wrong with it	I only did it once. Doing it three times would show whether the result repeats, and one of my saucers was wider than the other, which I did not notice until afterwards.

The last row is the one most people leave out, and it is the one a scientist writes first. Saying what was wrong with your own enquiry is not admitting failure. It is the difference between a result and a claim.

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A page to plan on

Fill this in before you touch anything. Photocopy it, or copy the headings into a book, and use it every time.



PLANNING AN ENQUIRY

MY QUESTION

One question, and one that an enquiry could actually answer.

WHICH KIND OF ENQUIRY

Fair test, sorting, watching over time, pattern seeking, or looking it up?

MY PREDICTION, AND WHY

What do you think will happen, and what makes you think it?

THE ONE THING I WILL CHANGE

Only one. Write it down before you start.

THE THINGS I WILL KEEP THE SAME

List them. These are the ones that would spoil the result.

THE THING I WILL MEASURE

What exactly, in what units, and how often?

Enquiry 3

WATCHING OVER TIME



Watch the Moon for a month and draw its shape every clear night.

Plan it on the page before, then use this page for what you did, what you measured and what happened. Write the numbers down as you get them, not afterwards.

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SAMPLE PAGES

You have read a few pages. The pack is longer.

What you are holding is a short sample, taken from different parts of the pack so that you can see how a week is planned and what a child is actually asked to do, before you decide.

The complete pack, and the rest of the academic materials, are on our website: schemes of work for a parent teaching at home, and practice packs for the skills children get stuck on.

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Islamic and Academic Education

Members of the homeschool community do not buy these. If you have joined the community, the pack for the term you are working on is given to you at no cost.

Our Islamic Education classes are free. These packs are part of what pays the teachers who teach them.