THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

SCHEME OF WORK · THIRTY SIX WEEKS

Science at Home

A full year planned, in two tracks: Primary 1 to 6, and Junior Secondary 1 to 3. Every experiment uses what is already in your kitchen. No laboratory, and nothing to buy.

WHAT IS INSIDE

- How to use this scheme
- The year at a glance
- Thirty six weeks, Primary track
- Thirty six weeks, Junior Secondary track
- Checking without testing
- When it is not working
- A record of work for the whole year
- What comes after this year

The Striving Muslim Academy

Primary and Junior Secondary · thirty six weeks · every practical from a kitchen

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

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Primary track

PRIMARY 1 TO 6, ROUGHLY AGES 6 TO 11

WK	TOPIC	WHAT YOU ACTUALLY DO	BY FRIDAY THEY CAN	IF THEY CANNOT
Term one · looking properly at living things				
1	**The five senses**	Put five things in a bag. They identify each by touch, then smell, then sound. Record what each sense told them.	Describe an object carefully using more than one sense.	They say "it is nice". Ask for three words that another person could use to guess the object.
2	**Living and non living**	Sort twenty things from around the house into two piles, then argue about the hard ones: a seed, a feather, a fire.	Say what makes something living, with more than one reason.	They say it moves. Ask about a plant, then about a car. The argument is the lesson.
3	**Parts of the body**	Draw round them on paper and label it together. Add the parts you cannot see as you learn them.	Name the main parts of the body and say what each does.	Naming without function. Ask "what is it for?" after every label.
4	**Plants**	Grow beans in a jar on wet cotton wool. Start this week; you will use it for a month.	Name the parts of a plant and say what a plant needs.	Nothing grew. That is a result, not a failure. Ask what was missing and start again.
5	**Asking a question**	Turn a wondering into a question you could answer by looking. Three of them.	Turn a question into something they could actually test.	Their questions cannot be answered by looking. Ask how they would find out.
6	**Animals**	Watch one real animal for ten minutes: a lizard, an ant trail, a bird, a goat. Record what it did.	Describe where an animal lives, what it eats and how it moves.	They write what they already knew. Insist the record comes from the ten minutes of watching.
7	**Materials**	Sort the kitchen by material: wood, metal, plastic, glass, cloth. Say why each thing is made of what it is.	Name common materials and say why each is used for its job.	They cannot say why. Ask what would happen if the spoon were made of paper.
8	**Hot and cold**	Measure with a thermometer if you have one, or sort by hand into hot, warm, cool, cold.	Compare temperatures and use the right words.	Hot and cold are relative. Have them put one hand in warm water and one in cold, then both in the same bowl.

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Junior Secondary track

JSS 1 TO 3, ROUGHLY AGES 12 TO 14

WK	TOPIC	WHAT YOU ACTUALLY DO	BY FRIDAY THEY CAN	IF THEY CANNOT
Term one · matter and method				
1	**Particles**	Dissolve salt in water, then evaporate it back. Where did the salt go?	Explain solids, liquids and gases using particles.	They think dissolving destroys the salt. The evaporation answers it.
2	**Elements, compounds, mixtures**	Separate a mixture of salt, sand and iron filings using water, a magnet and a filter.	Separate a mixture and explain each method.	They cannot say why each method works. Ask what property each one uses.
3	**Separating techniques**	Filtration, evaporation, and simple distillation with a pot lid and a cold bowl.	Choose the right separation method for a given mixture.	Method chosen by habit, not by the mixture. Give them three different mixtures.
4	**Acids and bases**	Red cabbage water as an indicator. Test lemon, soap, bicarbonate, vinegar.	Test substances and classify them as acid, base or neutral.	The best practical in junior chemistry and it costs one cabbage leaf. Do it.
5	**The cell**	Onion skin under a phone lens or a hand lens. Draw exactly what they see, not what the book shows.	Draw a plant cell from observation and label it.	They copy the textbook drawing. The point is drawing what is actually there.
6	**Scientific method**	Variables, control, fair testing, conclusion. Apply them to a test they design.	Name the variable they changed, the ones they kept the same, and why.	They cannot name the control. Ask what they are comparing their result against.
7	**Measurement and error**	Measure one thing ten times. Calculate the average and discuss the spread.	Record repeated measurements and explain why they differ.	They think a different reading means a mistake. Variation is normal and expected.
8	**Apparatus**	Name and draw the standard apparatus in the conventional way.	Draw apparatus to examination convention.	Marks are lost on drawing convention, not on science. Teach the conventions early and repeat them.

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When it is not working

Every one of these happens to every family. None of them means the child cannot do the subject, and none of them means you are teaching it wrongly.



The experiment did not work

This is science, not a failure of teaching. Most real experiments fail the first time and the reason is usually interesting.

What to do. Ask them why it might not have worked, write down three possible reasons, and test one. That lesson is worth more than the original one.

They can recite the facts and cannot explain anything

They have been taught science as a list to be remembered, which is what happens when the practicals are skipped because they are inconvenient.

What to do. Do the practical, even late, even badly. One real demonstration repairs a term of memorised definitions.

You have no equipment

Almost nothing in this scheme needs any. The few things that do are listed on the year page and cost very little.

What to do. Where something is genuinely impossible, watch a video of it and then say plainly that you watched it rather than did it. Children notice the difference and should.

They are frightened of getting it wrong

Usually because science has been marked right and wrong, like arithmetic, when most of it is observation.

What to do. Mark the recording, not the result. Praise an honest unexpected result loudly, once, in front of the family.

They write the answer they think you want

The commonest and most damaging habit in home science, and it is caused by praise for correct answers.

What to do. Deliberately set up one experiment where you do not know the answer either. Find out together.

You do not understand the topic yourself

Expected, and not a problem. Nobody holds all of junior science.

What to do. Read the week's row and do the experiment yourself the night before. If it fails for you, you have just learned what to warn them about.

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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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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.