THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

SCHEME OF WORK · THIRTY SIX WEEKS

Mathematics at Home

A full year planned, in two tracks: Primary 1 to 6, and Junior Secondary 1 to 3. Thirty six weeks, with what to do, what to check, and what to do when it does not land.

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 · two tracks in one book

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 · number, and what the digits mean				
1	**Place value**	Build three digit numbers with bottle tops in three piles: hundreds, tens, units. Say each number aloud as you build it.	Read, write and build any number to 1000 and say what each digit is worth.	They say "three five two" for 352 instead of three hundred and fifty two. Go back to the piles before any written work.
2	**Comparing and ordering**	Write six numbers on paper slips and have them arrange them smallest to largest, then explain their order aloud.	Order any six numbers and use the words greater and less correctly.	They compare the last digit instead of the first. Cover all but the hundreds column with your hand and ask again.
3	**Addition without carrying**	Column addition, two numbers, no carrying. Ten a day, five minutes, marked together immediately.	Add two three digit numbers correctly in columns.	Their columns drift. Give them squared paper, one digit per square. It is handwriting, not arithmetic.
4	**Addition with carrying**	Do one with them, talking through the carry out loud, then let them do five in silence while you watch.	Add with carrying and explain where the carried digit went.	They write the whole answer under one column. Show the carry as a small one above the next column, in a different colour, every time.
5	**Subtraction**	Start with no exchanging, then introduce it with the bottle tops: break a ten into ten units in front of them.	Subtract three digit numbers with exchanging.	They take the small digit from the large one whichever way round they are. This is the commonest error in primary maths. Go back to the tops.
6	**Word problems, one step**	Read the problem aloud, ask what is happening before asking what the sum is. Draw it.	Turn a one step word problem into a sum and solve it.	They guess the operation from a keyword. Ask them to retell the problem in their own words first, every time.
7	**Times tables, 2, 5 and 10**	Five minutes of chanting, then five minutes of random asking out of order. Order is the trap.	Answer any 2, 5 or 10 fact in under three seconds, out of order.	They can recite but cannot answer out of order. They have learned a song, not a table. Only ask out of order from now on.
8	**Multiplication as groups**	Lay out four groups of three objects. Ask the question in both directions before writing anything.	Explain what 4 × 3 means with objects, and write it.	They can calculate but cannot show it. Keep the objects out for another week; the meaning is the point, not the answer.

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WK	TOPIC	WHAT YOU ACTUALLY DO	BY FRIDAY THEY CAN	IF THEY CANNOT
Term three · graphs, data and the year together				
17	**Pythagoras**	Draw a 3, 4, 5 triangle and measure. Let them discover it before you name it.	Find a missing side in a right angled triangle.	They use it on a triangle with no right angle. Ask them to point at the right angle before starting.
18	**Coordinates and graphs**	Plot points, join them, see the line. Table first, graph second.	Plot a straight line from an equation.	They plot the x and y the wrong way round. Along the corridor, then up the stairs. Say it every time.
19	**Gradient and intercept**	Draw three lines with the same gradient and three with the same intercept. Compare.	Find the gradient and intercept and write the equation.	The sign of a negative gradient. Ask whether the line goes up or down as you read left to right.
20	**Simultaneous equations**	Elimination first, substitution after. One method secure beats two half learned.	Solve a pair of simultaneous equations and check both.	They solve for one and stop. The answer is a pair; say so each time.
21	**Transformations**	Tracing paper is the whole lesson. Reflect, rotate, translate, enlarge.	Carry out all four transformations and describe one fully.	They describe it incompletely. A full description needs the type and its details; list what each one needs.
22	**Area and volume**	Find the volume of a real box, then of a cylinder, with a ruler.	Find areas of compound shapes and the volume of a cuboid and a cylinder.	They mix up area and volume units. Ask what the units are before they calculate anything.
23	**Statistics: averages**	Use real data from the family: ages, heights, minutes of reading.	Find mean, median, mode and range and say which is most useful.	They find all four and cannot say which to use. Give them a set with one extreme value and ask again.
24	**Charts and tables**	Draw a frequency table, then a bar chart, then a pie chart from the same data.	Draw and interpret a frequency table and the charts from it.	Pie chart angles. Remind them the whole is 360 degrees and check the total before drawing.

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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.



They were fine last week and cannot do it today

This is normal and it is not a sign of anything. Learning is not a straight line, and sleep, food and worry affect arithmetic more than anything else.

What to do. Do five easy questions from a topic they have secured, then stop for the day. Come back tomorrow.

They can do it with you and not alone

They are following your prompts rather than their own method. This is the commonest invisible problem in home teaching, because it looks like success.

What to do. Sit beside them and say nothing at all for ten minutes. Whatever they do in that silence is what they can actually do.

They cry, or refuses

Almost always because they have been asked to do something that is two steps above where they are, for long enough that it has become frightening.

What to do. Stop the lesson. Do not negotiate. Tomorrow start two topics lower, where they are certain, and build back up over a week.

They are fast and careless

They find it easy and have learned that finishing first is the point.

What to do. Give them fewer questions and mark on working, not on answers. Three right with working beats twenty right with none.

Their tables are not secure and everything is slow

This blocks division, fractions, ratio and algebra. It is the single most common cause of a child falling behind in mathematics.

What to do. Five minutes a day, out of order, with a chart they tick themselves. Six weeks. Do not skip it and do not do it in long sessions.

You do not understand the topic yourself

This happens to every homeschooling parent and it is not a failure. You are not expected to hold a whole curriculum in your head.

What to do. Learn it the night before, from the week's row and one free video. Then teach it. A parent who learned it yesterday often explains it better than one who learned it twenty years ago.

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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.