Stronger Together

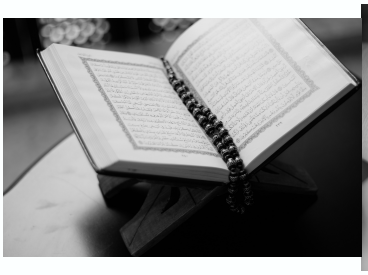
A GATHERING OF KINDRED SPIRITS

AN IDEA BOOK

BY BRAVE LEARNERS &

ISLAMABAD HOMESCHOOLERS

Contents



Education is an atmosphere, a discipline, a life.

About

STRONGER TOGETHER

A gathering of kindred spirits

Our Creator in His infinite wisdom has laid out numerous lessons for us to reflect upon and draw wisdom from.

Birds flying in the V-formation pull off an amazing feat that allows them to travel and endure gruelling distances. They strategically place themselves in aerodynamically optimum positions, synchronize the flapping of their wings and take turns in the lead. All these moves make an arduous journey collectively easier.

I've heard someone say that homeschooling is "a work of hearts". It truly is, because it is the love in our hearts that has compelled us to make deliberate choices for our children to be free to learn in their special and unique ways.

However, we all know that hearts can get weary and hearts can get sad because, as rewarding as this journey is, it can also be very difficult.

We need not feel alone – like the birds, we can be stronger together. We can open up our hearts, make room for one more and carry one another when the going gets rough.

I pray that this curriculum fair will be the first of many… I hope that this gathering will give birth to many more efforts that will help our special patchwork family soar.❊

**The Stronger Together Curriculum Fair & Idea Book are collaborative projects of Brave Learners & Islamabad Homeschoolers.*

Calibrate

FINDING YOUR PURPOSE & DIRECTION

Crafting a Mission Statement

MAPPING YOUR COURSE
BY SHIRIN BINTI JOHARI

You might be a complete newbie to homeschooling or you might be starting a new year. Perhaps you are overwhelmed by Pinterest or up to your eyeballs in curriculum catalogues. You end up researching for hours and at the end of it, discover that you still have not found the *perfect* curriculum that will make your homeschool a magical and wondrous experience.

Analysis paralysis has set in and you cannot get on with the task at hand – educating your child. It all feels frustrating and futile.

What can help is to go back to your starting point and to get your bearings straight. Recalibrate – think about what you want to achieve in the long run. This is where drawing up a mission statement comes in handy.

A mission statement is basically what spells out the vision, purpose and values of your homeschool. Consider your goals and methods thoughtfully. Your family can only benefit from this soul searching – this statement will be a roadmap that will keep you guided on your journey.

As you go along, your mission statement will take on more clarity and definition. My mission statement started out with just a *name*. When I started out home educating my now 19-year-old some 12 years ago, we named our little set up “Ilm Quest”. It summed up our love for the pursuit of knowledge. Unbeknownst to me, this name would come came in handy in other ways too.

Back then, homeschooling was an even bigger oddity – Maryam was often interrogated as to why she was not in school. She didn't like locking horns with elders, so if asked where she was studying, she would say, not without a twinkle in her eye, "Ilm Quest". She would even sometimes say "IQ" in that confident, airy tone as if anyone who knew anything would and should know about her school! This name not only helped us avoid unnecessary debates, but also reminded us of our mission. It gave us a stronger sense of resolve.

Having a mission statement will help you zero in on what is *most important* to your family and your goals. It will keep your targets realistic and help you focus on *your own personal journey.* You won't worry about keeping up with the Joneses and you won't flit from one trend to another. Best of all, it will help you make better curriculum choices – you will select and settle on activities and resources that have passed through your mission 'filter'.

For example, you may have committed to devote more time to learning the Quran or exploring nature. These would not be possible if you have scheduled far too many other activities/classes throughout the week. With a mission statement, you can nip these conflicts in the bud and what will result is a home-school that not only runs smoothly, but is unique and special.

Crafting your mission statement:

1. Write down what matters most to you and your family.
2. Plan out your long-term goals.
3. Consider your teaching style and your children's learning style.

Your final statement may be written in a paragraph or bullet point form. Either way, be sure to display it or have it handy in a planner or journal so you can refer to it often and be reminded of your targets.

I have included our mission statement here in this article. It has gone through many revisions. It might sound a little lofty and here, I'd like to emphasize that these are our *aspirations*, not our achievements. We are, as always, a work in progress. ❊

| OUR MISSION STATEMENT |

WE PROMISE TO STRIVE TO...

- *hold fast to the Book of Allah subhanahu wa ta'ala and the Sunnah of Rasulullah sallallahu `alayhi wa sallam*
- *forge strong relationships as a family*
- *live with purpose and strive for mastery*
- *have curiosity, joy and gratitude*
- *be articulate and have a sense of humour*
- *read widely and think deeply*
- *have courage and stand for justice*
- *give more than we receive and be of service to others*

Word of the Year

BETTER EVERY YEAR

BY SHIRIN BINTI JOHARI

Some of us may have gotten the hang of this homeschooling business. Enough at least to have our mission statement, goals and strategies neatly laid out. We have the classes to rush to, co-ops to prepare for, books to read and chores to complete. We have our good days and our bad days and we're rolling with them. It often feels like each day blends with the next, though. Before we know it, a whole season… no… a whole year has passed.

We wonder if we can do *better*… maybe tweak things a little to keep our perspectives fresh and our spirits glad.

One way to go about this is to have a word of the year – this will be the lens through which we approach our journey.

Word of the Year

Incidentally, in the past couple of months, we have had several new challenges. We have had to deal with major house repairs and consequently, mess, missing books and mayhem all around.

Classes for my eight-year-old son have also become more demanding – woodwork, for example, is difficult and often frustrating, but it has taught him to be more patient and meticulous. At karate, the *sensei* is strict and pushes the kids hard – he repeatedly tells them to "make the effort".

I've also had to step out of my comfort zone – with more co-ops and community work, I've had to learn to graciously give up time to and for myself. Fellow introverts will understand the struggle!

A discussion with my son led us to a quick decision – our word for next year (we begin our new school term in January) will be "STRIVE".

This means that we will *strive* to fulfil our mission statement, in shaa Allah. We will do our very best to be consistent and to put in our best effort even when there are days when we don't feel like it… and life *is* such that there will be days when we won't feel like it!

Strive is about doing hard things because it is in struggling that our characters can be honed. Allah has given us example after example of the righteous who put hope in Him and carried out difficult deeds. Ayyub `alayhis salaam endured severe illness and loss with patience; Nuh `alayhis salaam persistently preached and built his Ark despite years and years of mockery and Rasulullah sallallahu `alayhi wa sallam bore assault, persecution and disloyalty with restraint and steadfast obedience to his Lord.

I pray that, in shaa Allah, this motto will help us cultivate habits that build character. What will your word be? ❊

Taking the Plunge

BY AISHA FARHAN

Homeschooling can seem to be quite intimidating for a newbie, right? One hardly knows where to begin, how to teach, which curriculum to choose and the list goes on. Here is a concise, practical and comprehensive guide which will walk you through the steps.

Step 1: Research, research and research!

This step is really important because it is going to lay down the foundation of your future home school. You must earnestly research about home education; explore its history, approaches, problems, and applications; and study the lives and contributions of homeschoolers across the globe.

So do spend your time on the internet reading books, articles, blogs, Facebook pages and educational forums related to homeschooling topics.

Step 2: Get in touch with the homeschoolers around you.

Once you have gathered enough information and know what homeschooling is all about, it is time to meet the real people out there! Locate homeschoolers in your area and connect with them. Every major city in Pakistan has a homeschooler community. You can search via Google, Facebook, YouTube channels, and WhatsApp groups to get the contact information. Getting acquainted with different types of homeschoolers will allow you to understand what homeschooling looks like practically.

Step 3: Get your family on your side!

You are certain that homeschooling is going to be the best choice for your children. Now it's time to convince your spouse and your extended family members (if you have a joint family system).

If your spouse and family members are already with you in this, then you can skip this step, but if they are not, you need to persuade them and win their trust. This can be done through frank conversations, open discussions, and inviting practicing homeschoolers at your place for your family to meet. Having family on your side will provide you a supportive and calm environment for homeschooling. Plus, it will give an extra boost to your overall performance.

Step 4: Choosing a curriculum

Now comes the dreaded part! Which curriculum to choose for your child? Get access to your child's age-appropriate curricula of some reputable schools. You can get this directly from schools, select bookstores, and websites.

Once you have the various curricula; thoroughly examine the syllabi and skim through the course materials and resources. This will be very helpful in determining the learning goals, objectives and outcomes for your child. You can select a complete ready made curriculum or you can customize one by picking, choosing, and blending subjects and study material from various curricula.

Planning your curriculum gives you more flexibility. It is important to keep pen and paper handy during this step. Make a rough draft – write down the subject outline, give details of the topics and mention the resources you are going to use. Once you are satisfied, prepare a final version of the curriculum with all the details and print it out. Some people like to make a twelve-month long curriculum plan, whereas others prefer a six-month curriculum plan.

Step 5: Make a homeschool planner

Now it is time to unleash your creativity and make a home school planner. This is a personal organizer in the form of a register, notebook, folder or a digital planner to record curriculum details, homeschooling goals, lesson plans, daily progress and time table. You can add in your meal plans, outing plans, extracurricular activity plans, important meeting plans as well. I like to add a few motivational quotes and stickers in my planner.

Step 6: Choose a homeschooling approach

You are almost ready to start your homeschooling journey. It is time for you to decide which approach is going to be right for you and your family. It is not necessary to stick to only one approach and follow it all along. You can try out various methods and see which one works best.

Step 7: Set up your family's routine

The success of home education largely depends on routines. It is crucial that you make a feasible schedule for yourself and your family. Irregular routines can make your homeschooling journey very unpleasant. You can also draw up a chart and task list for your family.

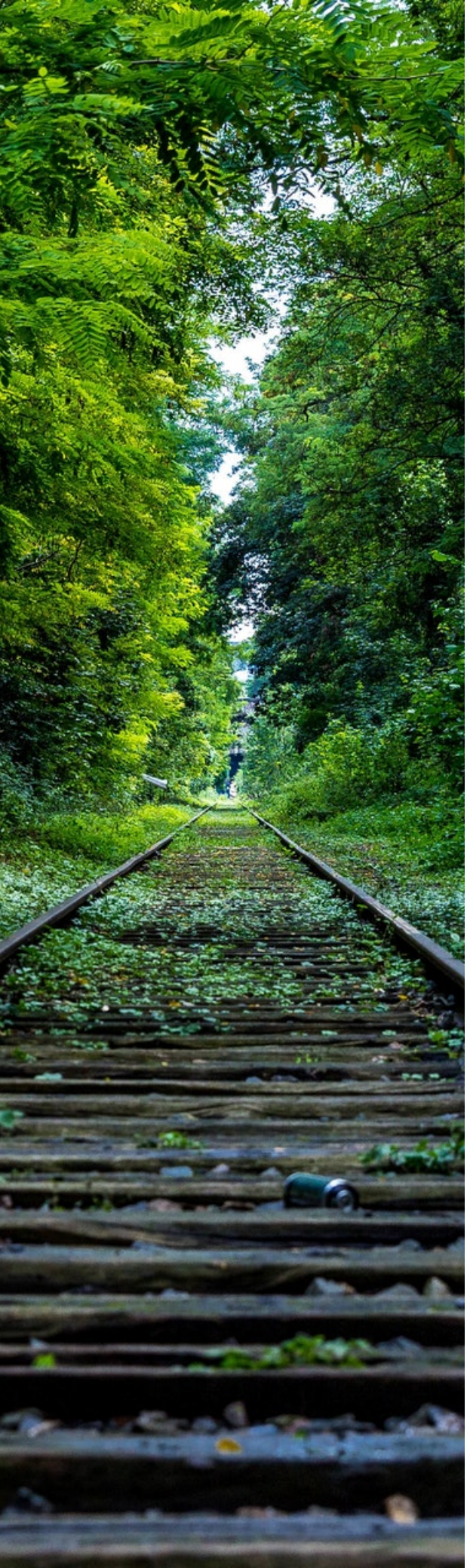
Step 8: Leap!

You are good to start your homeschooling journey. Remember that you will have good days and bad days. Sometimes you will get sick, some unexpected guests will arrive, some family problems will arise and many other things will happen to derail your schedule. The key is to be steadfast and not to lose hope.

I pray that Allah makes your journey a smooth one. ❇

Gather

READYING FOR THE LONG HAUL



Who am I?

I am your constant companion.
I am your greatest helper or heaviest burden.
I will push you onward or drag you down to failure.
I am completely at your command.
Half the things you do
might just as well be turned over to me;
and I will be able to do them quickly and correctly.
I am easily managed –
you must merely be firm with me.
Show me exactly how you want something done,
and after a few lessons I will do it automatically.
I am the servant of all great people
and, alas, of all failures, as well.
Those who are great, I have made great.
Those who are failures, I have made failures.
I am not a machine,
though I work with all the precision of a machine
plus the intelligence of a person.
You may run me for profit or run me for ruin –
it makes no difference to me.
Take me, train me, be firm with me,
and I will place the world at your feet.
Be easy with me, and I will destroy you.

Who am I?

Laying Down the Rails

TRAINING FOR GOOD...
A CHARLOTTE MASON PERSPECTIVE
BY SHIRIN BINTI JOHARI

Were you able to guess the answer to the riddle? The answer, quite obviously, is "HABIT".

There is a beautiful saying that resonates with me:

"Sow a thought, reap an action;
sow an action, reap a habit;
sow a habit, reap a character."

Habit training is a key feature in the Charlotte Mason approach. She likened good habits to rails on which our children's lives can run smoothly. The early years are thus for laying these down.

They include:

- Proprietary habits like cleanliness, tidiness, and good manners in general
- Moral habits like obedience, self-control and integrity
- Religious habits like having God consciousness, regularity in devotions
- Physical habits like keeping oneself healthy and strong

According to Charlotte Mason, good habits should be so well ingrained that they would be like the air that the child breathes. I am inspired by this as it is very much in line with the teachings in the Sunnah of the Prophet sallallahu `alayhi wa sallam.

We will have to take pains for sure. It might feel as if our litany of instructions and reminders to our children are in vain and we may be sorely tempted to throw in the towel. We have to step back and look at the big picture. It is only then that we can appreciate that *these little habits are actually building up towards our children's character*.

So how can we inculcate good habits in our children?

STEPS FOR EFFECTIVE HABIT TRAINING

1. Determine which habits we want to instill in our children.

It is crucial that our thoughts are clear on the virtues we wish our children to develop. This will influence the atmosphere we cultivate in our homes and the direction our homeschool will take. As parents, we know our children's strengths and weaknesses best, so it is upon us to take on this business of habit training.

2. Intentionally teach and train our child in the trait that we desire to be a habit.

Reminders benefit the believer. A child will not simply *grow out* of his faults, so we must reckon with him for his offences. Left unchecked, faults of character will fester.

If we identify any bad habits in our children, we should deal with them *immediately*. As Frederick Douglass said, "It is easier to build strong children than to repair broken men."

3. Surround the child with good examples.

We should surround the child with good habits. If we want our children to have kindness, then we should cultivate a culture of gentleness and charity in the home.

Children also learn well through stories. One of my best memories is an afternoon I spent with my girls. It was a cold winter's day and armed with snuggly blankets and snacks, we read a book about our pious predecessors – there were beautiful accounts of charity, valour, justice and repentance. We finished the book in a sitting and – the stories made us reflect on our own need for better habits and deeds.

4. Let it come from them.

"If I've told you once, I've told you a million times to pick your things up…" This might be a common refrain in our homes. We know it does not work, but we do it anyway – we nag and we nag some more.

When we see something undone (for the umpteenth time!), we tell our children to get to it, but here's the thing: we are reinforcing that they should do what mum tells them to do. Therefore, they will most likely only do *when mum says so*.

| HABIT & CHARACTER |

"Character is the result of habits.
A person who is honest and truthful
habitually *tells the truth.*
He does not do this only once in a while.
Truthfulness is a habit ingrained in his life."

(Sonya Shafer, Smooth & Easy Days)

What would work better is to get them to initiate what needs to be done… instead of telling them to pick up their things, ask, “Have you completed *all* your chores?” When our children make the mental effort or connection and take the initiative, it makes all the difference.

5. Be the example.

We might fret over our own faults – would they not disqualify us from pointing out our children’s mistakes? Would we not seem like hypocrites? The fact is that our personal struggles and successes will be prime opportunities to demonstrate that it is never too late to change and that we should never tire of seeking Allah’s help.

Of course, we may stumble and fall along the way. Umm Salamah (radhiallahu ’anha) was asked which du’aa the Prophet (sallallahu alayhi wa sallam) would supplicate the most while in her presence. She said that it was:

يَا مُقَلِّبَ الْقُلُوبِ ثَبِّتْ قَلْبِي عَلَى دِينِكَ

“O Turner of the hearts, turn our hearts to Your obedience.”

So we pick ourselves up, dust ourselves off and keep trying. And there lies another beautiful habit we can strive for: ***Istiqamah***. ❊

Provisions for My Journey

ASMA AQEEL *writes about the steps she has taken to homeschool and the 'supplies' she has prepared for her journey.*

Clueless – the word I would use to describe how I started my homeschooling journey a year ago. I'd heard this term "homeschooling" over the years, so the concept wasn't alien to me, but honestly, I didn't fully understand what it entailed.

So, when I decided to homeschool my children, I started researching the meaning of the term. I was bombarded with information and felt truly overwhelmed. It was information overload.

After months of researching and following various homeschooling web pages and channels, I began to slowly join the dots and things began to make a little more sense.

I spent a long time researching before pulling my children out of school. In fact, I took one whole year. Take your time – it's not a quick decision!

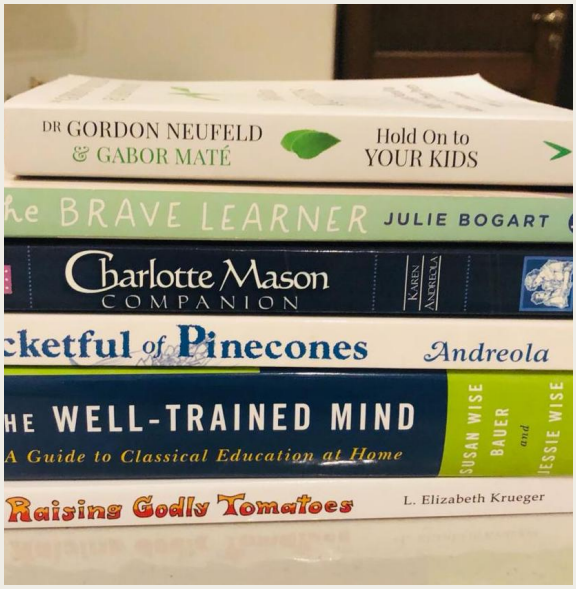
I hope that by sharing my experience with you, it might help you find your right direction.

Step 1: First, understand the basic concept of homeschooling. It is an alternative way to provide education to your child.

Step 2: I'd always thought that homeschooling is the same everywhere. I was under the impression that one just takes the curriculum taught at school and teaches one's child the same thing at home – like creating a school at home. I quickly realised that my knowledge of homeschooling was sparse.

I came across a multitude of homeschooling styles:

- Traditional
- Classical
- Charlotte Mason
- Unit study
- Unschooling
- Waldorf



I won't go into detail regarding what each style consists of. I'll leave you to carry out your own research as it is so important to find a style and approach that truly suits you. In the picture above are some of the books I read to understand the different homeschooling styles. These books also helped me to understand the different methods and approaches we can use to acquire knowledge.

Charlotte Mason was the one that I felt would suit my personality and would benefit my children the most.

***Step 3*:** Once I picked the homeschooling style for my family, I began researching in detail. Rather than follow many bloggers, I focused on a choice few.

- Dr Gemma Elizabeth (*Our Muslim Homeschool*)
- *www.simplycharlottemason.com*
- *www.ambleside.org*

I would suggest from my own personal experience that you do not follow too many bloggers as this would most likely confuse you. Pick one or two bloggers and follow them for some time until you feel confident enough to make your own curriculum choices.

Step 4: Here, I will highlight the daily and weekly routines I have planned for my children. I have taken inspiration from Simply Charlotte Mason. These include book suggestions for read-alouds, nature study, Scripture, picture study, poetry as well as History and Geography.

Once you have established a good routine with daily and weekly subjects, then you can introduce the following subjects to be taught once a week:

- Shakespeare
- Foreign Language
- Handicraft

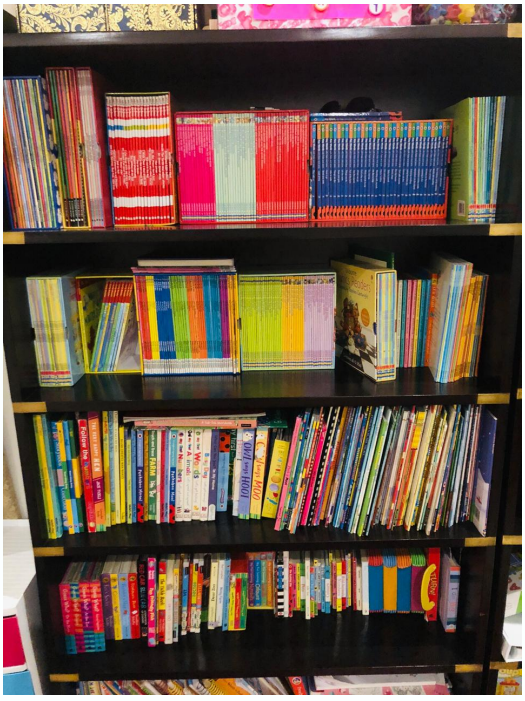
Daily Routine

LITERATURE

READ-ALOUD: *The parent reads books to the child. These are some of the books I read to my children. When you read to your child, pick a book above their reading level. Read a few chapters a day. You may start reading 2-3 books simultaneously.*

READING

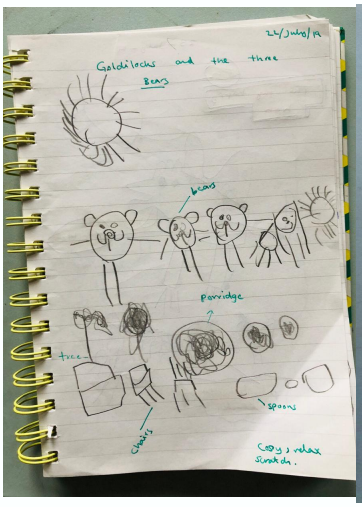
Children can read age-appropriate books themselves. Provide them with a good selection. They may pick what they want to read or you can have a list for them to go through.

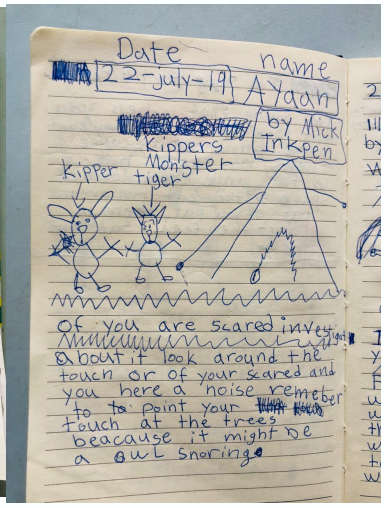


Daily Routine

NARRATION

Once they have read or listened to the book being read to them, they can re-tell the story in their own words. On some days, you can accept oral narration and on others, you can ask them to give you a written narration. Below are the pages from my 5-year-old and 7-year-old's written narrations. You will notice that the 5-year-old only draws pictures whereas the 7-year-old writes a few sentences.





SCRIPTURE MEMORY

Read and memorise simple verses from the Holy Quran and Hadith. Read the verse and ask your children to repeat. Read the same verse daily until they memorise it then move on to the next verse.

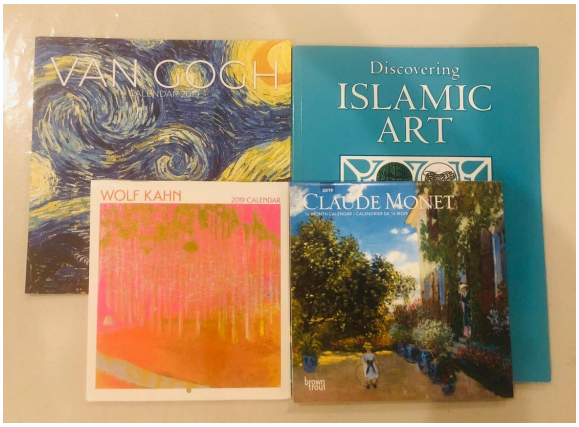
ESTABLISH

Start with literature, narration and Scripture memory. After a couple of weeks, introduce the subjects (weekly) one by one. Do not overwhelm yourself and the children by trying to do everything all at once. Take your time.

Weekly Routine

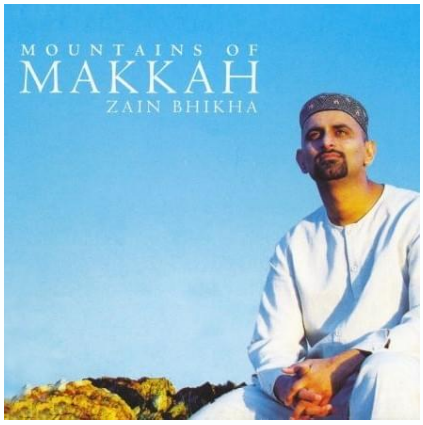
PICTURE STUDY

Pick an artist for 6-8 weeks. Show children the artwork and ask them to observe it. Then put the picture upside down and ask the children to recall all the details of the picture. They can imitate the artwork in their own style or simply talk about it. Display the picture for a week and then move on the next picture by the same artist. You can also read the autobiography of the artist to your children.



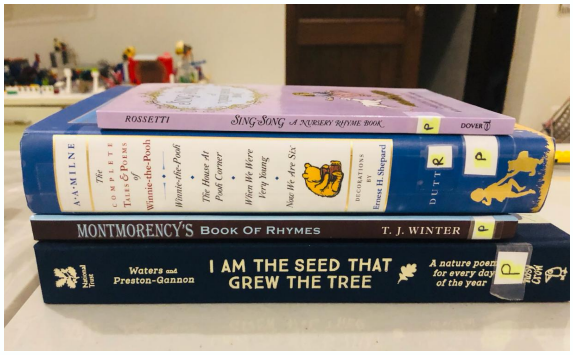
MUSIC

Again, just like picture study, you pick a composer and listen to the same composer for 6-8 weeks on a weekly basis. I play nasheeds by the same composer for 6 weeks before moving onto the next.



POETRY

Read poems to your children. It is recommended that you do not simplify the poems as you will lose the rich vocabulary.



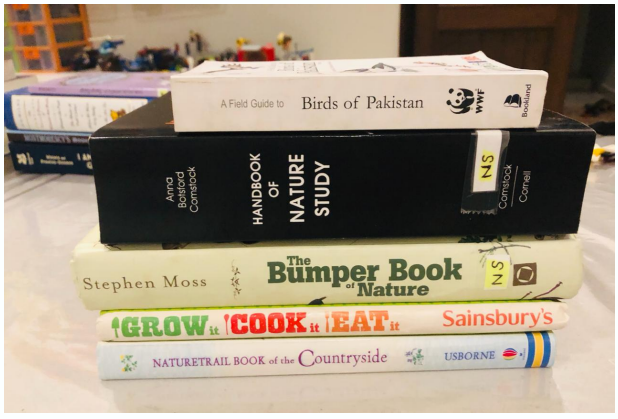
Weekly Routine

NATURE WALK

*It is recommended that you take your children for **nature walks** at least once a week if not more. Let them explore. They can climb a tree, chase butterflies, find bugs or simply just enjoy the walk.*

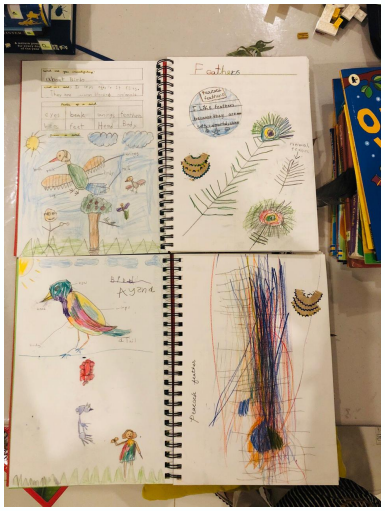
NATURE STUDY

Nature study is looking at nature in depth. You could use books, the internet or story books to study nature. Pick a topic such as birds, mammals, trees, weather and so on and study it for 6-8 weeks. These are some of the reference books I use.



NATURE JOURNALING

These are pages from my children's nature journals. You will notice the level of detail from my 5-year-old to 7-year-old. We studied birds for 6 weeks.



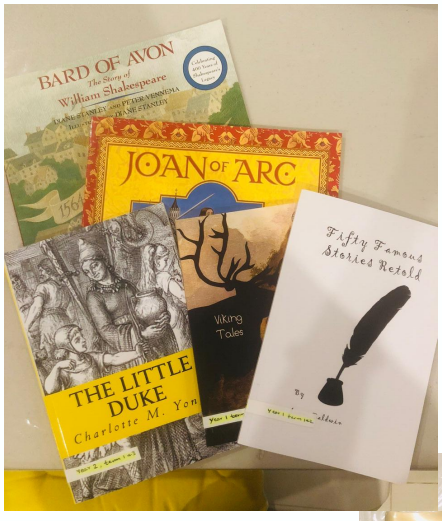
Weekly Routine

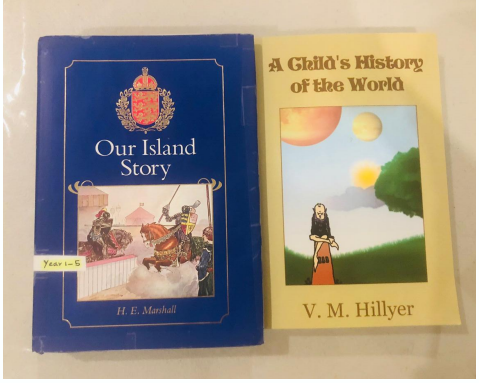
GEOGRAPHY

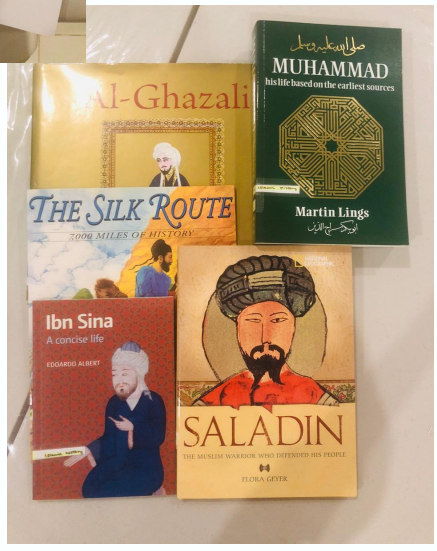
These are some books I use for Geography… I also collect maps of places; they are excellent tools for teaching Geography.

HISTORY

For History, I am going to teach the history of Britain and Pakistan as well as Islamic history.







Journey

EXPLORING DEEPLY

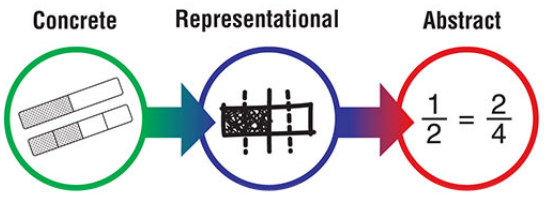
Manipulating Math

BY SANA HASHIM

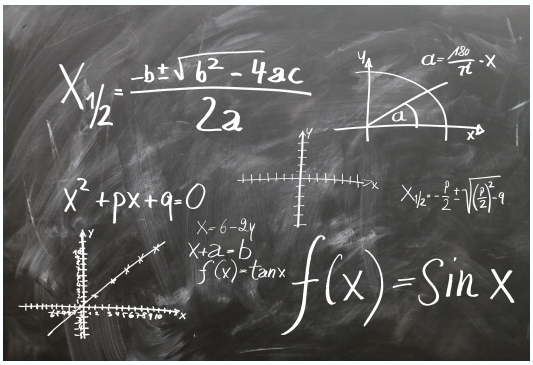
Students learn best when they are engaged and involved in the process. A child will learn best about lions when he sees a real lion. Pictures and videos will not colour the picture of lion that he has in his mind. Using ***manipulatives*****,** students gain a solid understanding of math concepts through hands-on learning activities. These activities provide a firm, memorable foundation for more abstract, symbolic operations.

According to a theory, all children learn math in 3 stages:

- *The **Concrete (Manipulative)** stage. Students look at, touch, and move objects to understand mathematical concepts.*
- *The **Representational (Pictorial)** stage. Students bridge the gap between the concrete and the abstract with strategies such as drawing pictures and talking about math.*
- *The **Abstract (Numbers/Signs)** stage. Real objects and pictures are connected to the abstract numbers and signs. Students gain understanding of abstract concepts from experiences in the concrete and representational stages.*



- ***Concrete**: When learning about **fractions**, students can use **fraction strips**. They then add the fractional parts to find the sum.*
- ***Representative**: After practicing with these, they can progress to finding sums for problems on paper, represented by pictures.*
- ***Abstract**: Over time, they will devise strategies and apply algorithms so they can find sums when given only the addition expression.*



What Are Manipulatives?

Just like the name suggests, Math manipulatives are "things" that students can manipulate: they can touch, move, and handle to help them understand Math. A manipulative may be as simple as grains of rice or as sophisticated as a model of our solar system. They may be store-bought, brought from home, or teacher- or student-made.

Here are some examples of to use manipulatives:

- Have students show three blue counters, and then match each blue counter with a red counter.
- Create a sentence such as, "__ students were playing kickball and __ students were on the swings. There were __ students all together." Have students take turns changing the numbers and model each sentence using manipulatives.
- Show five red counters and four blue counters. Then ask, "Are there more red or blue counters?"
- Have students use 2-sided counters to show 3 (white) + 6 (black). Then ask, "How many more black counters are there?"
- Have students sort money into Rs.1, Rs.2 and Rs.5 coins. How much money? How many Rs.5 coins?
- Have students show these math problems using manipulatives. Ali collected 66 postcards this month. If he collects the same amount each month, how many will he have in 6 months?

  Use base ten blocks to show 6 groups of 66.

  66 x 6 = 396
- Aisha has 10 markers. She has 2 friends. Show how many markers each friend will get.
- Aisha has 10 markers. She wants each friend to get 2 markers. Show how many friends can get markers.
- There are 245 children in a group. If they are divided into two groups to watch a play, how many children will be in each group? Use base ten blocks to show that 245 divided by 2 = 122 R1. There will be 122 children in one group and 123 children in the other group.
- Four T-shirts are on sale for Rs.6000. How much does each one cost? Using play money, 6000 divided by 4 = 1500. Each shirt is Rs.1500.
- Add 1/4 + 3/6. Use Cuisenaire rods or fraction circles to see that 3/6 is the same as 1/2. Place the fraction circles on a circle to see that 1/4 + 1/2 is 3/4.

How To Use Manipulatives

NUMBERS & OPERATIONS

- ***Counters*** can be used to teach one-to-one correspondence, ordinal numbers and basic addition and subtraction.
- ***Two-sided counters*** can be used to model one-to-one correspondence, addition and subtraction, or skip-count.
- ***Place-value mats*** can be used to show each digit's place value when using base-10 blocks.
- ***Base-10 blocks*** can be used to model the variety of ways a number can be represented, and to model regrouping when adding, subtracting, multiplying, and dividing.
- ***Money***, in **coins** or **bills**, can be used to count, skip-count, or model regrouping when adding or subtracting.
- ***Fraction strips*** or **fraction circles** can be used to show equivalent fractions, to add fractions, to subtract fractions as well as to find common denominators.

ALGEBRA

- ***Algebra tiles*** can be used to explore integers, algebraic expressions, equations, factoring and expanding. They can also be used to explore fractions and ratios.
- ***Pattern blocks*** can be used to create, find or extend patterns.
- ***Attribute blocks*** can be used to sort and classify according to shape, colour, size or other attributes.
- ***Pan balances*** *or* ***scales*** can be used with objects or weights to show equivalent values.

How To Use Manipulatives

GEOMETRY

- ***Geoboards*** can be used to identify simple geometric shapes and describe their properties and to develop spatial sense.
- ***Geometric-solid models*** can be used to teach nets or spatial reasoning.

MEASUREMENT

- *Standard and non-standard rulers and* ***measuring cups*** can be used to represent length or volume.
- ***Tiles*** can be used to find the area or the perimeter of an object.

DATA ANALYSIS & PROBABILITY

- ***Spinners*** can be used to find the experimental probability of landing on a designated area.
- ***Number cubes*** *or* ***dice*** can be used to find the experimental probability of rolling a certain number or a combination of numbers.

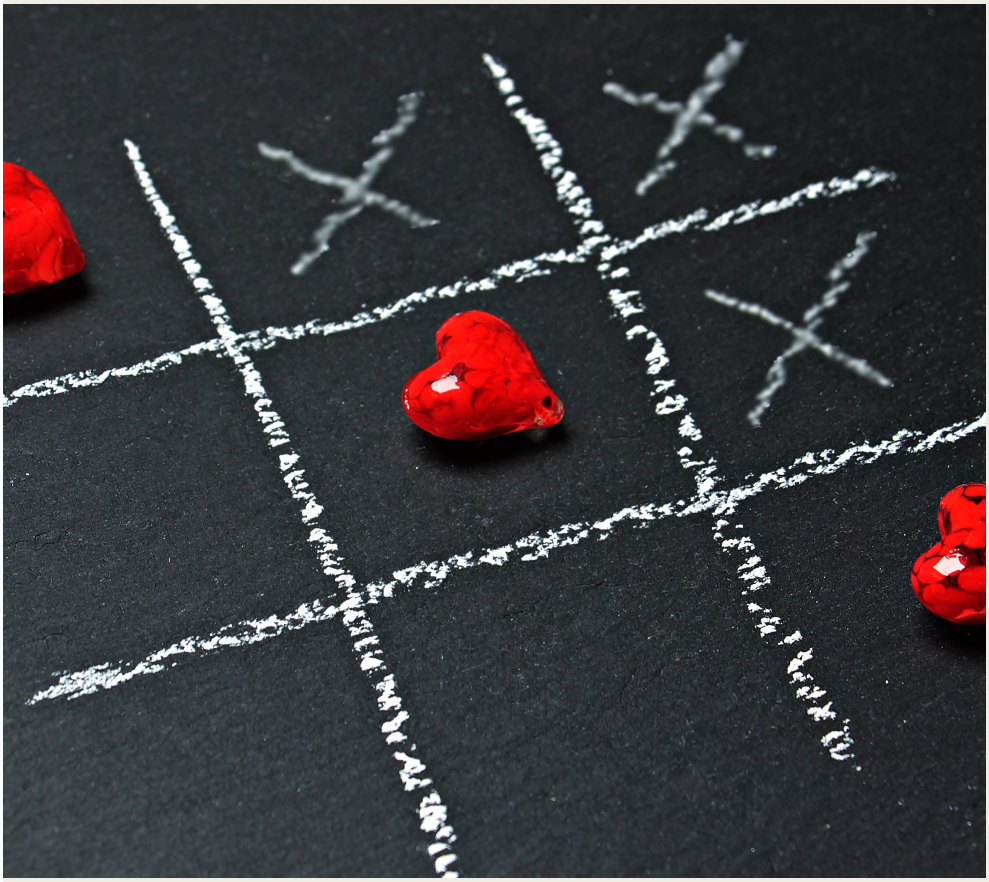
Purchasing Math Manipulatives

Math manipulatives are expensive, especially when you are living in Pakistan – getting things shipped from overseas can cost an arm and a leg. It is no surprise then that people often think that homeschooling is expensive! I have yet to come across ANY school in Pakistan that uses Math manipulatives in a big way, so when you give your child ANY manipulative, you are putting him one step ahead in the game.

If you look in the right places, you can find stuff that will make you think you live in the best country in world!

- ***Weekly bazaars***: I once got a set of fraction circles and foam cubes at dirt-cheap prices!
- ***Aliexpress***: MOST of the Math manipulatives you will need are available there at reasonable prices. You might have to change the names while searching. For example, look for “number rods” instead of “Cuisenaire rods”.
- ***Daraz.pk*** and other similar online stores selling toys. You can get often score good deals from these places.
- Pages supplying Montessori resources, ***Alishah Montessori Resources*** is one I am familiar with.

What if you still can’t find that absolutely necessary and wonderful resource? Worry not, one shoe box of simple everyday items will serve you well for years.



Sana's DIY Math Manipulative Kit

WHAT YOU WILL NEED

Foam sheets, pipe cleaners, buttons, beads, deck of cards, dice, bottle caps, paper money, coins, egg trays, kitchen tools.

Most of these will be available at the local stationary store. If you are unsure of what something looks like, do a Google search before you go shopping – the picture will help you get want you want.

Pro-tip to save money AND the environment: As much as possible, try to **REUSE** the existing stuff lying around or ask around if someone has some to throw e.g. bottle caps, egg trays, money and dice from an old game, buttons from a sewing enthusiast, broken clock, etc. All of these end up in land fills and add to pollution. Using them will save **you** money **AND** reduce waste.

- Various sized buttons for ***sorting***.
- Pipe cleaners and beads can be used to make a rekenrek, to help with ***10-facts.***
- Soft drink bottle caps can be used as ***counters***. Paint the insides with acrylic or permanent marker to get ***double sided counters***. You can cut circles or squares from foam sheets to make as many counters as you want.
- Buy a game of Monopoly (or use an old one) and use the ***play money*** to teach math. Real coins can be used too.
- Use the rubber bands to bundle straws or ice cream sticks into groups of 10, and then bundle ten 10s into a group of 100. Once you've made some bundles of 10, you have your very own ***base-ten blocks***. Use them to teach two-digit addition and subtraction, with and without regrouping.

- Cut two cups off an egg tray. Use the 2×5 tray as a ***ten-frame*** for younger children who are learning the sums and differences up to 10. Model multiplication by putting equal quantities of counters in each egg cup. “If I have 6 groups of 3, how many counters do I have?” Can also be used to model division.
- An old clock is the best tool to teach ***time***. Allow the child to play with the hands to show different times.
- Use plain chart paper to cut out index cards. Make your own ***flashcards*** (for number operations) number cards, and also for geometry.
- Rulers provide a simple model of the ***number line***. A tape measure, yardstick, kitchen scale, and measuring cups are great to practice real-life measuring.
- ***Ten-frames, hundred charts*** and ***fraction strips*** are available online as free printables.
- Foam sheets can be used to make a variety of manipulatives like ***counters, place value disks, number tiles, fraction circles, pattern blocks, tangram pieces, fraction bars*** and even ***Cuisenaire rods*** and ***algebra tiles.***
- Deck of cards and dice are useful for demonstrating ***probability*** as well as many elementary level concepts.❊

Sana Hashim has an MBA from IBA and is a homeschooling mum of 3. She has taught primary school as well as university students and has conducted homeschool co-ops in Saudi Arabia and Pakistan. Sana’s interests include Urdu poetry, financial literacy, economics and business for kids. She and her husband run Mission-Life, an online company that conducts online numeracy and cross-curricular connection classes for children.

Quran With Heart

UMM AYMUN, a veteran homeschooling mother of 3, discusses how her family embraced a serious study of the Quran.

The Prophet (sallallahu alayhi wa sallam) said, “The best among you (Muslims) are those who learn the Quran and teach it.” [Bukhari]

While these words of Rasulullah (sallallahu alayhi wa sallam) had always inspired me, they also elicited regret because I was not one of the best. Having wasted 20-odd years towards a professional degree, there seemed to be no possibility of attaining this high stature.

When I had children and they started growing up, I realised that I had been given a second chance. Taking charge of their education, I could make not only their life but my own worthwhile, if Allah subhanahu wa ta’ala willed.

Alhamdulillah, after a decade of homeschooling, I can see some fruit of this effort, which was purely directed by the grace of Allah subhanahu wa ta’ala.

We embarked upon our Quran journey when my two older children were around 5 years old. We hired a female teacher with whom we all learned Tajweed. Within a year, my daughters had finished the Qaidah (primer) and memorised some Surahs and everyday Duas, while I had recited the Quran once with the Qariah.

Hearing our Makharij practice, the third one – a baby then – had secretly absorbed the information and exhibited it at 2 years by pronouncing the Arabic letters very well, ma sha Allah.

As we moved on to the formal study of the Quran, I wanted my children to approach it with understanding. I had impressed upon them that the Quran is the greatest and most interesting book, and being already in love with books, they couldn’t imagine reading a book without understanding it. They looked upon missing out on all the amazing stories and parables in the Quran as a great misfortune.

Our dilemma was to find a teacher who knew Tajweed, could discuss the meanings and followed

the coercion-free, interest-based methodology of our home-schooling. With no ideal candidate in sight, I tried to fill that role despite my shortcomings.

I first set out to develop a special bond and 'taste' for the Quran, using light but consistent doses, as one would do while introducing a new food. We focused on the quality of reading rather than the quantity. We wanted to read with zeal and zest; discussing the Ayaat, 'feeling' them and drawing lessons from them. I tried to maintain a balance – neither including too many details which might overwhelm my daughters nor rushing it, only to leave their hearts empty.

The challenge was to find suitable resources and to be persistent. The rewards of reading the Quran in a family setup are many, as we discovered over time. Reading the Quran is not a once-a-day, out-of-home activity; rather, it has become our living-room affair. Its references and reminders are part of our studies and conversations – we set aside evening 'prime time' for it and foster co-operative competition among family members.

My eldest daughter and I raced to memorise Juz Amma and we are still in competition for further memorisation. Their father joined us in the contest, but has now left us far behind with his ongoing Hifz. We also invented a recitation challenge game to buff up our family's Tajweed and memorisation. Live recitations now accompany us during long drives and park visits, which is Alhamdulillah a dream come true.

We begin our mornings with the Quran, focusing on memorisation of text and its meaning, and writing the same. In the evening, we do sequential recitation and Tafseer. My 10-year-old has completed her first recitation of the Quran with translation and short Tafseer in English and is doing a second cycle in Urdu. Her one-year-younger sister is left with 6 Ajzaa in her first study-round and a couple of Surahs in Juz Amma's memorisation. In future, they will In Sha Allah do in-depth study with an Aalimah / Muftiah.

| THE QURAN'S REWARDS |

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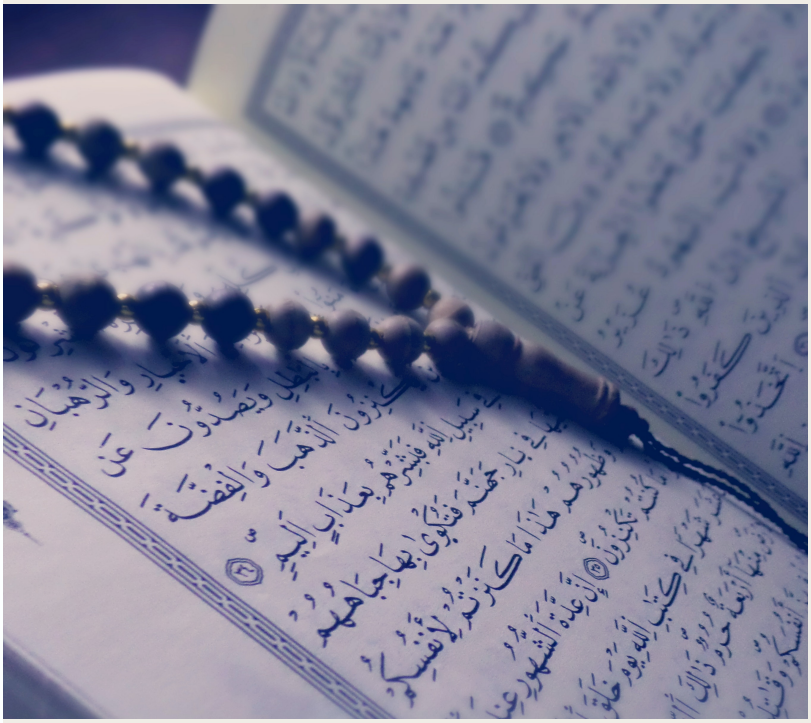
The girls are also learning the Arabic language and currently understand about 70% of the text directly. They ask striking questions during discussions, which force me to take a fresh look at things ("While drowning, when Firawn said that he believed, did he really mean it?"). When it comes to topics beyond their age-level, we focus entirely on Tajweed. With topics involving the derivation of Fiqh issues, we cover only a brief summary, as these can be properly studied only under qualified supervision.

My youngest daughter has seen her sisters working on the Quran while she played or snuggled in my lap. Now, when her sisters read, she likes to point at the text and identify the Madd, Ayah and Ruku' signs. Ma Sha Allah, she is sailing through her Qaidah at 4½ and I already have two reliable teachers at home!

With Allah's help, prioritising and perseverance, the Quran has become a companion in our household and the lens through which our children view the world. I have personally undergone a great learning journey and pray that I will be able to reap the rewards of this effort even after death.

Alhamdulillah, I seized my second chance in life. You can, too.

This article was written in 2013. If you would like to know more about how Umm Aymun's family's Quran quest has progressed since, do have a chat with her at the Stronger Together Fair or at future Brave Learner events.



اردو کیسے پڑھائیں؟
اردو جو بادشاہوں کی زبان تھی۔ اردو جو ہماری قومی زبان ہے۔
اردو جو ہمیں پڑھنی اور پڑھانی بہت دشوار لگتی ہے۔
اور بالکل ٹھیک دشوار لگتی ہے۔

کیوں نہ لگے؟ مقابلے میں انگریزی ہے جو عالمی زبان ہے، جس کو پڑھنا اور پڑھانا نہ صرف ضروری ہے، اس زمانے میں آگے بڑھنے کا ذریعہ ہے بلکہ نہایت آسان بھی ہے۔ انگریزی کو سکھانے کے لیے مختلف قسم کے فلیش کارڈز ہیں، خوبصورت تصویروں والی نت نئی کہانیاں ہیں، سو طرح کے ٹی وی پر پروگرام آتے ہیں، سڑکوں، بازاروں اور بورڈز پر لکھی ہے۔ آسان تو یقینا ہے۔ اہم بات یہ ہے کہ انگریزی سکھانا آسان ہونا ہمارے لیے اردو نہ سکھانے کا بہانہ نہیں ہونا چاہیے۔

لوگ مجھ سے بچوں کو اردو سکھانے کے بارے میں اکثر سوال کرتے ہیں۔ لہٰذا آج یہ لکھنے لکھانے کا سلسلہ بھی اسی طرز پر رکھ لیا جائے تو مناسب رہے گا۔

س۱۔ اردو کب سکھانا شروع کریں؟
ج۱۔ اردو سن کر سمجھنا آپ کا بچہ اپنے پیدا ہونے سے سیکھ رہا ہے۔ اگر بات چیت کی عمر تک، جو تقریباً ڈھائی تین سال ہوتی ہے،اس کو بولنے میں جھجک محسوس ہوتی ہے تو آپ گھر میں صرف اردو ہی بولیں، تین سے چھہ ماہ میں وہ بھی روانی سے بولنے لگے گا۔ اردو حروف اور ان کی آوازیں سکھانا پانچ سال کے قریب شروع کروا دیں۔ میرا تجربہ ہے کہ بہت دیر بھی ہو جائے تو چھہ سال کا ہونے پر آپ کا بچہ بنیادی اردو پڑھنے کے قابل ہو چکا ہو گا۔ لکھنے کی مشق ساڑھے پانچ سے چھ سال تک اٹھا رکھیں تب بھی خیر ہے۔

س۲۔ اردو اور عربی دونوں سکھانی ہیں لیکن بچہ دونوں زبانوں کو آپس میں گڈ مڈ کر دیتا ہے اور کنفیوز ہو جاتا ہے۔ پہلے کون سی سکھائیں؟
ج۲۔ میں نے اپنی بیٹی کو پہلے اردو پڑھنا سکھائی، اور بیٹے کو پہلے عربی۔ دونوں کے پڑھنے میں بس اتنا فرق ہے کہ بیٹے کو اردو میں حروف کی آوازوں کو عربی لہجے میں بولنے پر ٹوکنا پڑتا ہے۔ میری ذاتی رائے کے مطابق، گو کہ عربی سیکھنا بھی بہت ضروری ہے لیکن اس کے سیکھنے سے پہلے اپنی زبان پر اچھی گرفت ہونا زیادہ اہم ہے۔ اس لیے آپ اردو پہلے شروع کروائیں اور جیسے ہی حروف اور آوازوں کی پہچان ہو جائے اور جوڑ توڑ میں روانی آ جائے آپ عربی شروع کروا دیں۔ دونوں زبانوں کا رسم الخط ایک ہے اور ان کو شروع کے تھوڑے وقفے کے علاوہ ایک ساتھ سیکھنا بہت فائدہ مند ثابت ہوتا ہے۔

س۳۔ اردو کیسے سکھائیں؟ کون سی کتابیں استعمال کریں؟
ج۳۔ سنرائز پبلیکیشنز کی شائع کردہ آہنگ اردو نصابی سلسلہ کی ابتدائی ۱ اور ابتدائی ۲ بہت خوش نما کتابیں ہیں۔ اس کے علاوہ ۹۱۲ پبلشنگ ہاؤس کا اساس قاعدہ بھی استعمال کیا جا سکتا ہے۔

س۴۔ میرے بچے کو اردو کے حروف اور آوازیں سب معلوم ہیں لیکن وہ اردو پڑھنے میں دلچسپی نہیں لیتا۔ کوئی حل بتائیں؟
ج۴۔ بلا شبہ اردو کی کتابوں میں دلچسپ مواد کی کمی ہے۔ لیکن اچھی کتاب ڈھونڈنا نا ممکن نہیں۔ اگر آپ پڑھنے کے عادت ڈالنا چاہیں تو اس عمر کے لیے بُک گروپ کی کتابیں بہت! اگر آپ کوئی دلچسپ نصاب استعمال کرنا چاہیں جوآسان زبان ہو اور بہت کتابی طریقے سے نہ لکھا گیا ہو تو آمنہ اظفر کے آکسفورڈ یونیورسٹی پریس کے شائع کردہ آکسفرڈ اردو سلسلہ کی پہلی دو کتابیں، "بلبل" اور "مینا" پڑھا دیں۔

س۵۔ دوسری یا تیسری جماعت کے بچے کے لیے کوئی رسالہ تجویز کریں۔
ج۵۔ جس بچے کو جوڑ توڑ آ جائے اس کے لیے "جگمک تارے" ماہنامہ بہت پڑھنا ٹھیک رہے گا۔ چھوٹی کہانیاں اور بڑے سائزمیں چھپے الفاظ اس کا پڑھنا سہل بنا دیتے ہیں۔ اس سے بڑے بچوں کے لیے ماہنامہ "الف نگر" ایک میعاری رسالہ ہے۔ ان کا پچھلے سال کا لوک کہانی سالنامہ تو بہت ہی خوب تھا۔ "تعلیم و تربیت" گو کہ تھوڑا مشکل ہے لیکن کچھ محنت کے بعد آسان محسوس ہونے لگے گا۔

Connect

FINDING YOUR COMMUNITY

Homeschool Co-ops

WELL WORTH THE EFFORT...
BY AISHA IDRIS

We learn… unceasingly. It is a quality befitting the *Ashraf ul Makhlooqaat*: the best of the creations. This learning encompasses everything, from basic tasks like walking and talking as a child to more mature skills like self-discipline and time management in adolescence to very difficult tasks like parenting.

Parenting… Yes, the very challenging yet immensely rewarding journey we all are a part of. Just like all other tasks, learning to be a parent requires conscious, directed, dedicated and focused effort. A homeschooling parent has an added responsibility of schooling or facilitating the schooling process of his child. This process, at times, can become overwhelming and daunting.

This is where co-ops come to save the day!

Homeschool Co-ops

WHAT IS A HOMESCHOOL CO-OP?

A homeschool co-op is a group of like-minded, committed and focused families that work together for the best interest of their children. Simply put, each parent brings his own skill set and teaches a pre-decided number of classes. It is a two-way street – you teach to benefit others' children and they teach to benefit yours.

It is an excellent team working model and goes a long way in indirectly cultivating in our children a sense of empathy, togetherness and giving to their community.

It is important to know that it is a non-transactional understanding between the families. Usually the only money involved is that for supplies purchased for a session.

RULES FOR CO-OPS

Participants of each co-op may come up with their own set of rules, but every co-op should have a set of guiding principles to ensure sustainability and excellence.

After the experience of running a co-op for a few years, I believe each parent involved should:

- fully commit for the duration of the co-op (it could be a month, 6 weeks or a year long)
- give his best when conducting a session
- be punctual and respect everyone's time and space
- take it seriously (your children are involved)
- strive for sparking the love of learning in the children

WHERE IS A CO-OP HELD?

Depending on the nature of a co-op, it can happen almost anywhere. In a nearby park, a community centre, a library, a masjid, in someone's grandparents' house or in the homes of participating families on rotation basis.

It is best to have the co-op families from the same neighbourhood to avoid long commute times.

WHY SHOULD YOU START A CO-OP?

We live, we learn… but, we don't all learn the same thing at the same time. Let others teach what they are not only good at, but are also deeply passionate about! Passion brings out unmatchable flavour in learning.

Starting a co-op is not only a great way of teaching, it is also a constructive way of giving your children, wonderful positive memories and life long friends.

You could start a co-op for any random reason:

- You cannot find classes for your child.
- You do not like the quality or content of classes offered.
- You want to tread the less travelled path and do something entirely different from the norm.
- You are looking for a set of friends for your child.
- You have a passion to teach in out-of-the-box ways.
- You want to connect with brilliant people that can help give your child a conducive learning environment.
- You want to bring a positive change to the community.
- You want to stop complaining and start doing.
- You want to meet with your girlfriends more often!

The list can go on and each reason can be equally unique. Find a reason and start a co-op. :)

Seek out people who have a passion to teach, to nurture, to give! Look for support in your community, connect and make a network… and if you cannot find it, start one for others. In a few years, you will marvel at what you have achieved with Allah's help, in shaa Allah.

HOW TO START A CO-OP:

Keep life simple by following these easy steps:

- Find families that share some common goal.
- Call a meeting to brainstorm ideas.
- Set a time, date and venue.
- Select a facilitator for the month.
- And then ladies, say ***Bismillah*** and begin! ❊

Build

DREAMING BIGGER

Build your Science Co-Op

A YEAR'S WORTH OF LESSONS FROM
THE SMARTIES
COMPILED BY AISHA IDRIS

What is SMARTIES?

SMARTIES is a science co-op that was started in 2017. We wanted to to let our then 5-year-olds learning through experimentation. Our aim has been to develop in our young ones the habit of observation and the love for investigation through a direct experience with nature and a wide range of topics. Our academic year is 6 months long – with lessons, play dates and field trips.

Over the years, we have received numerous requests by parents want their children to join SMARTIES. We have had to decline with a heavy heart due to various reasons. However, we are delighted to share a breakdown of our first academic year's lessons for kids aged 6-7 [a 6-month term]. Now you can start your own little SMARTIES wherever you are!

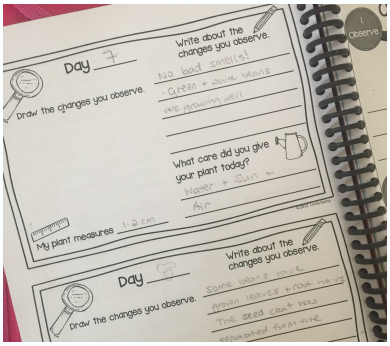
HOW IT WORKS:

Worry not, comrades! It is fairly simple :)

- Step 1: Select a theme.
- Step 2: Divide theme into 4 sessions.
- Step 3: Assign a profession to the little ones according to your theme e.g. Address them as *Botanists* if they are studying plants! Make a nice badge and you'll be surprised at the boost in their vocabulary by the end of the year.
- Step 4: Wrap up with a field trip!

Build: Science

Month 1: Botanist



Session 1 (by Aisha Idris)

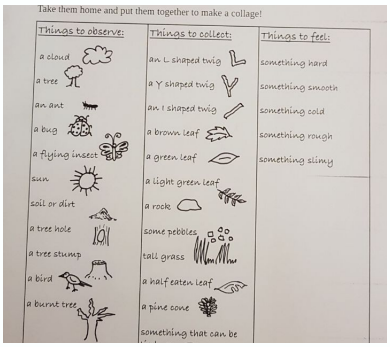
- Introduce these terms: Scientist, Botanist and Observation.
- Activity # 1: Observe leaves of different plants with the help of a magnifying glass. Discuss similarities and differences.
- Activity # 2: Match leaves to the plant they came from. This can be done in a park or with potted plants. Observe plants. Let them explore. Discuss different parts of plants.
- Activity # 3: Grow your own plants in jars with some cotton, beans and water. Children should observe these beans growing and record their findings.

Session 2 (by Aisha Idris)

- Introduce the term: *Communicate*.
- Ask children to observe their experiment from last week and communicate their findings.
- What did they do right? What went wrong? Act like a real scientist. Let the kids talk.
- Show a time lapse video of how a plant grows.
- Explain the function of roots: nutrients and support.
- Activity # 1: Show how roots take up water by doing this simple experiment: Walking Water Rainbow
- Activity # 2: Go out, give the children some straws and ask them to find the best possible way to erect them in sand so they do not fall. Once they have stable straws, attach another straw to its height and see how the already stable straw falls because the short root cannot support a tall plant.
- Explain how other objects have root-like extensions too like hair, mountains, icebergs.
- Narrate the story of how the Titanic sank.
- Activity # 3: Show root vegetables to children.

Build: Science

Month 1: Botanist



Session 3 (by Abda Khakan)

- Briefly talk about the stem: delivery system of the plant
- Briefly talk about the leaves: lungs, bad air in, good air out, make food
- Briefly talk about the flowers and discuss self and cross pollination … Watch this video
- Explain how avocado flowers are female in the morning and male in the afternoon.
- Briefly talk about the fruit, how it protects seeds.
- Activity # 1: Cut different fruits to find their seeds. Observe and discuss.
- Discuss plants on land and water.
- Why do we need plants? Let children talk.
- Explain how plants make food by photosynthesis.
- Activity # 2: Do a chlorophyll rubbing activity using different coloured leaves and flowers.

SESSION 4 (by Abda Khakan)

- Activity # 1: On a whiteboard draw 2 stick figures, one lives in a world with plants while the other doesn't. Compare: What do they eat? What do they wear? Where do they live?
- Discuss why do we need plants? Wood for tools and shelter. Food: oil, fruits, vegetables, sugar.
- Plants are also good for the following: home for animals, eat bad air, reduce pollution, provide shade.
- Show a video on deforestation:

FIELD TRIP:

- A Nature Scavenger Hunt trip in a local park! Google for many great ideas :)

Month 2: Sound Engineer

SESSION 1 (by Aisha Idris)

- Discuss energy. We get energy from food and water, machines get it from electricity, running water has energy to move boats and logs…
- Discuss forms of energy? Light, heat and sound etc.
- Discuss Sound Energy. It is made up of waves or vibration. You need to put in the energy to make the wave.
- Activity # 1: Use a fork, strike it, listen to it. Can you see the vibrations?
- Activity # 2: Put water in a tub, hang a little piece of paper in the water half dipped. Make waves by moving the water, the piece of paper will go back and forth. Water has energy. This back and forth motion is called a wave or vibration.
- Watch this video on how waves travel

SESSION 2 (by Aisha Idris)

- Revise terms: Energy, wave and vibration.
- How does it travel? It travels through matter(solid, liquid, gas)
- Discuss matter.
- Discuss three states of matter briefly.
- Activity # 1: Play a game to show how sound travels through matter. Explain that sound waves move through a medium by vibrating the molecules in the matter. Molecules in a solid matter are packed close together while the ones in liquids are more loosely packed. In gases, molecules are even further apart.

  You will need a timer/stopwatch. Get the children to stand in a row, shoulder to shoulder. One child receives a message and whispers it to the child closest to him. Jot down the time he took to send the message. Repeat twice more – each time increasing the distance between the children.
- Explain that in solids, sound travels faster because they don't need to move very far.

Month 2: Sound Engineer

SESSION 3 (Shirin Binti Johari)

- Talk about the parts of the ear and how they work.
- Compare with the ears of animals (e.g.: fennec foxes, elephants, rabbits). Discuss how different animals can hear different ranges of sounds and how they leave the area where a natural disaster is about to occur.
- Discuss pleasant and unpleasant sounds, let children give examples.
- Activity # 1: Listen to different sounds and divide them into pleasant and unpleasant.
- Talk about how the absence of sound can make one go mad, but too much noise can also be very upsetting.
- Explain how sound can be used as a weapon – Long Range Acoustic Device. You can show this video about LRADs.
- Narrate the story of Prophet Saleh ‘alayhis salaam and how the unbelievers were punished by a terrible cry/blast.

SESSION 4 (by Aisha Idris)

- Introduce the term: Echo
- Discuss how our ears work, watch videos or take help from illustrated science books.
- Discuss how our vocal cords work.
- Activity #1: Make your own sound instrument using rubber bands and boxes. Google for ideas :)
- Discuss Echolocation.
- Watch videos on how bats, dolphins and whales use echolocation to find their way.

FIELD TRIP:

Go to an open space like a park or a playground and record different sounds on your phone. Re-play to discuss. You could also do a little video making activity or let the children sing and record a nasheed! :)

Month 3: Optical Scientist

SESSION 1 (by Amna Shahid)

- Explain Energy… recall from Sound Engineers month.
- Revise some forms of energy.
- Discuss light energy. Show various sources of light. A candle, a torch, an LED, a computer screen, light bulb etc.
- Explain how light always travels in a straight line.
- Discuss reflection, refraction and blocking of light.
- Activity : In a dark room with a torch, experiment with light falling on a reflective surface and bouncing away in a straight line. Use various reflective mediums to help make a path in the room.

SESSION 2 (by Amna Shahid)

- Introduce the term Transparent. Show transparent materials.
- Introduce the term Translucent. Show examples of translucent materials.
- Introduce the term Opaque. Give examples.
- Activity # 1: Let children find examples in a room of these 3 materials.
- Activity # 2: Using the materials collected by children in the previous activity, do a little experiment on how light behaves with each material.
- Activity #3: Make a board game like the one shown in the image overleaf. Using a spinner, children take turns finding the kind of material the spinner points at.

Build: Science

Month 3: Optical Scientist

SESSION 3 (by Amna Shahid)

- Introduce the concept of shadows.
- Explain that they are formed when light is blocked.
- Activity # 1: In a dark room, make shadows with hands. This can be turned into a great activity! You can learn to make different animals and objects. Enjoy and have fun! What is learnt with the spine is seldom forgotten :)
- Activity # 2: Ask children to collect a few small toys. Use a torch to make shadows on a paper.
- Talk to them about the relation of distance and the sharpness and size/height of the shadow.

FIELD TRIP

- Turn one room into a nice Shadow Puppet Theatre and have the kids rehearse and host a show!
- Visit a theatre and see how light is used in a performance.

Month 4: Mechanical Engineer

SESSION 1 (by Abda Khakan)

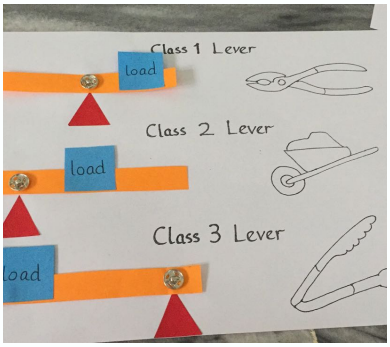
- Introduce machines how they make our work easy.
- Explain what an engineer does. Engineers ask questions (problem), they think and plan (solve the problem), they create (models or real machines) and they improve (make them efficient). But they never give up! Extend it to what a mechanical engineer does.
- Introduce the concept of force and motion. Try to demonstrate everything you explain.
- Discuss push and pull: taking something away from and bringing something closer to you.
- Activity # 1: Find things to push and pull, toys, door, tea trolley, anything! Discuss how our lives are surrounded by things we push and pull all day.
- Activity # 2: Give each child an object like a block, an ice-cream stick, a rubber band and a bead. Ask each child to move the block without touching it. Explain to them later how we need force (push or pull) to move objects.
- Explain friction.
- Activity # 3: Try sliding a book on different kinds of material. Discuss how it slides easier on smooth surfaces but not on rough ones – friction.

SESSION 2 (by Abda Khakan)

- Revise the concept of machines.
- Introduce simple machines.
- Introduce load, force, work and efficiency.
- Explain what an inclined plane is and how it makes our life easy.
- Show how it is only a plank but makes work efficient.
- Activity: Take a large wooden plank and place it next to something sturdy to make an inclined plane. Arrange a few objects of different weights. Ask children to take each object and lift it to a certain height and then take the same object but slide it on to the same height using the inclined plane. Compare which one was easy. Discuss why.
- You can also discuss gradients.

Build: Science

Month 4: Mechanical Engineer



SESSION 3 (by Abda Khakan)

- Introduce pulley as a simple machine.
- Introduce the concept of fixed and movable pulleys.
- With the help of videos show how compound pulleys work.
- Remind children of how machines increase efficiency by completing a task in less time.
- Activity: Using a rolling pin, bobbins, strong thread, S-hooks and weight, build different kinds of pulleys and experiment! (yes, you can pull it off… look at how we did it! See the top-most picture on this page!)

SESSION 4 (by Abda Khakan)

- Introduce lever as a simple machine.
- Introduce fulcrum.
- Describe 3 classes of levers.
- You can make an easy demo on an A4 sheet using snap buttons and coloured paper as shown in the image.
- Activity: Crafting a catapult using rubber bands and ice cream sticks. Use these and hold a competition of throwing pom poms. The more distance a pom pom covers, the more points that child gets!

FIELD TRIP:

An energetic evening out in a park with lots of different kinds of slides and swings children can run around and have a good time playing with and on simple machines. Like the seesaw!

Month 5: Humans

Month 5: Humans (by Shirin Binti Johari)

We have recorded this as only one session. However, this is a very deep topic and for older children, the activities can be split up into more classes and dealt with in greater depth. You may plan more using this theme of humans as keen observers of nature and how they connect with their Creator.

- Talk about the creation of Prophet Adam ‘alayhis salaam and why Friday is a blessed day.
- Show pictures of canyons and mountains where you can see layers of different sorts of soils and rocks.
- Activity #1: Explore different kinds of clay, let the children compare textures and colours. You can also show images of different parts of the world like the beach, volcanic areas, canyons and so on.
- Discuss how Prophet Adam ‘alayhis salaam was a very tall man [60 cubits or 30 metres tall].
- Activity # 2: Take some string and pull out 30 metres. If it is unmanageable, pull out 10 metres and then imagine 3 more of that! If you have an open space, lay out 30 metres of string on the ground. Now get as many kids to lie down head to foot to match the string’s length.

Build: Science

Month 5: Humans

- Let the children know that Adam ‘alayhis salaam was made from the earth. Allah took clay from different parts of the earth. Some narrations say that He and Jibreel ‘alayhis salaam took a handful from each part of the earth.
- Narrate the story of Iblees who is made of fire.
- Discuss how clay is better than fire:
  - *because Allah chose clay over fire*
  - *the prophets were made of clay*
  - *clay gets stronger in fire and can put out fire*
  - *clay is stable*
  - *it can be made into useful things*
  - *it can be used for tayammum*
  - *we can pray on it*
  - *we can grow things on it*
  - *we will be buried in it whereas fire is seen as punishment.*

- You may discuss time and creation with older children.
- Discuss how the children of Adam came out differently in terms of appearance and personality. Explain that we are EQUAL – we all came from humble beginnings (earth/dirt) and when we pass away, we will be buried in earth and then we will be consumed by the earth.
- Activity # 3: Place fabric squares of different colours on the floor. Discuss how it makes a beautiful patchwork quilt. Remove one patch and demonstrate how it is no longer complete. This shows that each and every human being is/can be special. You can sew up the patches and make a patchwork quilt – this can be used as a mat for outdoor co-op meetings!

Month 6: Zoologist

SESSION 1 (by Shirin Binti Johari)

- Talk about sorting things into groups based on some common attribute they have. Children can be grouped according to age or colour of clothing.
- Activity #1: Divide children into groups of two, give them a selection of blocks or toys and ask them to classify these based on anything they like.
- Explain how this process of grouping things together based on similar characteristics is known as classification.
- Introduce the concept of animal classification. Describe Mammals, Birds, Reptiles, Amphibians, Fish and Arthropods by explaining their characteristics.
- Take one group at a time and discuss characteristics in depth.
- Activity #2: Give clues about animals by listing out some characteristic and children will guess which class the animal belongs to. You may use flash cards or slides of animals.

SESSION 2 (by Shirin Binti Johari)

- Talk about how animals living in different parts of the world are so unlike each other. Let kids come up with theories why this could be so.
- Show images of different habitats and ask what kind of animal might live in each of them. Discuss why.
- Activity #1: source for a template or a colouring sheet of a penguin. Colour it with very waxy crayons. Cut out the penguin shape once you are sure all surfaces are well coated with the wax. Place the template on the table and drip some water onto it. The paper will not get wet – the water will simply slide off. Now lead the kids into a discussion on adaptation.
- Show pictures/videos of a camel and its habitat and discuss its features – it has a hump full of fat so it can survive without food for long stretches of time; it has long legs that keep it away from the very hot sand, and special parts on its feet to keep it from burning in the hot sand. It has thick eyelashes and the ability to close its nose to keep sand out; it has a thick, woolly and waxy body to save it from sunburn in the day and keeps it warm at night.
- Show pictures/videos of a polar bear and its habitat and discuss how it can close its nostrils when diving deep underwater to look for food; the thick layer of fat under its fur keeps it toasty warm in one of the coldest places on earth; its snowshoe-like paws keep it from slipping in the snow; its fur keeps it so warm and how it appears white to camouflage in the snow.

Month 6: Zoologist

SESSION 2 (continued)

- Show pictures of a cheetah and its habitat and discuss how its fur helps it blend in his habitat; its long and flat tail helps it with balancing and sharp turns; the black tear marks under the eyes help block the glare of the sun so he can hunt; its claws are always out and work like cleats and pads at the back of its paw to help it brake.
- Activity 2: Take a bowl of ice and water and have the kids dip their hands in it to check temperature. Next, wrap their hands with a layer of fat – use packs of ghee (you can put the ghee in Ziploc bags) taped around their hands and repeat the dipping procedure. This time they can't feel the cold water. Discuss why. Explain this layer of fat or blubber protects animals like the polar bear and seals from the cold.

SESSION 3 (by Shirin Binti Johari)

- This session is all about the importance of bees and what would happen to the world if there were no bees.
- Use this link as a base for your lesson plan: What Happens If All The Bees Die?
- This video helps to explain the mass death of bees: The Death of Bees Explained
- Explain that much of the foods we eat (one out of every three bites) are the result of a pollination partnership. Add that different species of bees pollinate many of the plants that make up our food supply. These include tomatoes, onions, cucumbers, lettuce, potatoes, oranges, lemons, limes, mustard seed, apples, etc.
- Activity #1: Bee Free Barbeque. Prepare paper cut outs or real food that you would serve at a BBQ or picnic. You would have buns, burgers, all the vegetables that go into the burger, fruits and other servings. Start eliminating the foods that are pollinated by bees. You might just end up with the buns and the meat. It makes for a very unbalanced and boring diet!
- Explain how there have been crisis affecting the bee population and that the danger is very real. Imagine having to painstakingly pollinate each and every blossom so we could have fruit to eat!
- Activity #2: Talk about the benefits of eating honey in the Islamic tradition and together with the kids make and drink honey water as a remedy for many ailments.

Month 6: Zoologist

SESSION 4 (by Shirin Binti Johari)

- Introduce the concept of time millions of years ago when dinosaurs lived on earth instead of humans.
- Show pictures of different kinds of dinosaurs.
- Discuss how some had sharp pointy teeth. Ask why. Explain that they were carnivores and ate meat or other animals.
- Discuss how some had small, flat teeth. Ask why. Explain that they were herbivores and ate plants.
- Discuss how some dinosaurs were omnivores and ate plants and animals.
- Discuss how dinosaurs were all so dull coloured. What could be the reason?
- Explore together how different dinosaurs might have defended themselves.
- About 65 million years ago, they became extinct.
- Some dinosaurs are believed to have feathers, birds are closely related to dinosaurs, turtles lived on earth before the dinosaurs did,
- Discuss fossils and how dinosaurs buried millions of year ago covered under mud and pressure have given so much fossil fuel to our world and we keep discovering fossils.
- Activity #1: Make a dinosaur excavation kit. Mix 8 cups play sand, 1 cup powder plaster of Paris and water in a large mixing bowl. Choose the dinosaur toys you want to 'bury'. Take container and fill it halfway with the plaster mixture. Scatter dinosaur toys in and then pour the remaining mixture over. Dry the mixture. Kids can do a dig and learn about palaeontologists.
- Activity #2: Together with the kids, do a Google search for Pakistani dinosaurs. You will be in for a surprise :)

FIELD TRIP

Visit a natural history museum or watch an animal themed movie. When SMARTIES finished this lesson, *Allahyar and the Legend of Markhor* was playing in cinemas, so we got to wrap up our lesson very well :)

The Paleolithic Age

A HISTORY UNIT STUDY
BY SHIRIN BINTI JOHARI

This fall, my son and I added another dimension to our homeschool days. We had covered the stories of the Prophets and were moving on to the Seerah of Rasulullah sallallahu `alayhi wa sallam, but we decided to also include a chronological study of world history. I thought it would be fun for others to join in, so here is a free unit study I've compiled for the Paleolithic Age.

I had been gifted Susan Wise Bauer's *Story of the World* some years ago but only managed to locate it recently. In the meanwhile, I had purchased *History Quest* by Pandia Press. Both teach history in a narrative/read-aloud fashion. When I asked Isa which book he preferred to use, he insisted that we use *both*. (Can you tell that he is a book collector like his mum?)

Build: History

The Paleolithic Age

RESOURCE LIST

- *Story of the World (Volume 1: Ancient Times)* by Susan Wise Bauer
- *History Quest* by Lisa Hawkins
- If you do not have the above resources, *The Usborne Encyclopaedia of World History* works well too. You can find these at old bookstores or Saeed Book Bank. I use Kingfisher's *History Encyclopaedia* and Parragon Publishing's *Encyclopaedia of World History*.
- Maps of the world
- A journal for notes, pictures and narration
- PowerPoint on a laptop or tablet (optional) – I like to make slides to flash key words, maps and pictures.

WHAT IS HISTORY?

- Discuss: what is *history*? (*The study of the past.*) What is *ancient*? (*"Ancient" means "very old."*)
- Next, talk about how we can learn about the past. We have some knowledge of it through our Scriptures, the work of historians and storyteller, relics and artefacts that have survived and the work of archaeologists.
- Why do we study history? (*So we can take wisdom from the past…)* Discuss.

WHAT IS ARCHAEOLOGY?

- "Archaeology" comes from the Greek *archaia* ("ancient things") and *logos* ("theory" or "science").
- Explain that archaeology is the the scientific study of the material remains of past human life and activities. These include human artefacts from the very earliest stone tools to the man-made objects that are buried or thrown away in the present day.
- Archaeological investigations are a principal source of knowledge of prehistoric, ancient and extinct culture. Archaeology helps us learn about people who left no writings behind.
- Discuss how artefacts are clues that tell us about the lives of people in the past.

Build: History

The Paleolithic Age

ACTIVITY: TRASH CAN ARCHAEOLOGY

- Explain that archaeologists have to be good detectives – they find things that have become buried in the ground and have to work out when they were buried and what sort of people may have owned them.
- Tell the children that they will be detectives: they will look at some modern rubbish and work out what sort of people owned it. Near the end of the day/a week, empty your waste basket onto a large sheet or newspapers. Ask students to identify the items and, using only the evidence in front of them, write a brief account of the day/week.
- What have they done that is not included in the account? Why could they not include it? This activity can help students realise that we only have a *partial* account of prehistory depending on what artefacts have survived.

THE PALEOLITHIC ERA

- **2.6 million years ago to around 10,000 years ago**
- The Paleolithic people were *prehistoric*. That means that they lived at a time before people began writing. Since they did not leave any writings behind, we do not know how they sounded or what they spoke about.
- They lived at a time when the world was still very cold (the Ice Age). Even places that weren't covered in snow had frigid temperatures. Discuss how the climate affected their lives. Think about the clothes they wore, their diet (plants would not grow very well) and other aspects of their lives (they would have to hunt a lot).
- They were hunter-gatherers and were always on the move (nomads).

GO BACK IN TIME

- Visit this site to learn about the life of Grey Otter, a boy from the Stone Age: BBC Bitesize Page on the Stone Age
- The Paleolithic people had 4 advantages over their predators: language, fire, tools and dogs.
- Discuss how these were important to the Paleolithic people.

Build: History

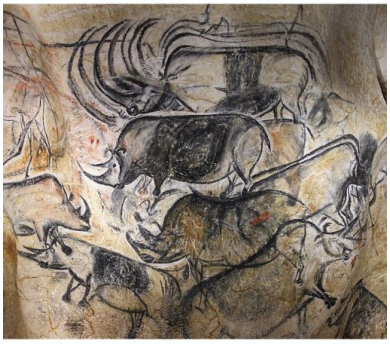
The Paleolithic Age

TOOLS

- Discuss how tools make our lives easier. Everyone uses them – even small children. For example, a child who cannot reach something on a high shelf may climb a stool to get it.
- Animals use tools as well - chimpanzees often use sticks and poke them into termite nests/mounds to draw out the insects for a snack.
- The people in the Paleolithic times fashioned many tools, many of which were made of stone. They must have made tools out of other materials like wood and such, but the stone ones are the ones which have endured.
- In the Paleolithic Period, stone tools were made by hitting one stone against another to break pieces off. The art of making tools out of stone is called “knapping”.
- **ACTIVITY:** Try to make tools on your own. (Stay safe!) What sort of tools are most useful to you?
- Examine pictures of Paleolithic tools online (below is an example) and make sense of what they were used for.

Build: History

The Paleolithic Age



FIRE

- Before humans discovered how to light controlled fires, fires still occurred in nature. Most natural fires started when lightning struck a tree, a pile of weeds, or other dry debris—just as natural fires start today.
- People realized that friction causes heat. With enough heat, one can make fire. This led to the creation of a fire drill. A fire drill is a long stick made of hard wood with a pointed end. The fire maker placed the fire drill against a second piece of softer wood and then twisted it. The twisting motion caused the softer wood to begin to smoke. The fire maker could then place dry tinder, such as leaves or small twigs at the place where the two pieces of wood met. By carefully blowing air on this tinder, a flame ignited.
- There were two ways to twist the fire drill. One was simply to twist the fire drill between the palms. The other was to take a bow string and use it to pull the fire drill back and forth across the softer wood.
- Prehistoric people also used a second method of creating fire. This method required iron pyrite, sometimes called fool's gold, and flint. Flint is a very hard stone that will spark when it is hit by metal. When iron pyrite hits flint, it makes a spark. If the fire maker aimed that spark at a pile of dry tinder and gently blew on it, a flame could be created.
- **ACTIVITY:** Try lighting a fire using the fire drill method … it is not easy! This will give children a better appreciation of the conveniences that they have.
- How fire helped humans:
  - It kept people warm.
  - Fire permitted people to roast meats and root vegetables. This not only made the food tastier, but it also killed germs. In addition, cooked food could be preserved longer than raw food.
  - Fire provided light and this allowed people to work even after the sun went down. This light also helped keep people safe by scaring away predators.
  - With fire, people could bake clay in a heated kiln to make pottery. Water and food could then be stored and carried in pottery vessels rather than in skin bags. The fired pots lasted longer, which meant the food within them also lasted longer.
  - People also learned how to construct outdoor ovens. With these ovens, people could bake grains into bread. This helped expand the human diet.

Build: History

The Paleolithic Age

DOGS

- Discuss how dogs have helped mankind. They are loyal and are good providers of both friendship and safety. They help people hunt and today, there are even service dogs – they are highly trained to help the disabled manage in their daily lives.
- In the Paleolithic times, the early dogs were wolves. It is said that today's domesticated dogs are all descended from or related to the wolf.
- It is believed that the early wolves were attracted to the human settlements because they could get leftover food. Perhaps over time, these wolves became comfortable with the humans and began following them around. Maybe the humans found them good help for hunting (their sense of smell allowed them to detect prey) and over time, the relationship became companionable.
- Do check out this link to get a glimpse of the relationship between man and the early dogs: Prehistoric Puppy May Be Earliest Evidence of Pet-Human Bonding
- **ACTIVITY:** Watch the movie *Alpha* – this is available on VOD if you use Nayatel. It is a coming of age story about Keda, a youth from 20,000 years ago in Upper Paleolithic Europe. Keda is a master at crafting the sharpest of tools, but is a sensitive soul who finds it difficult to hunt and kill. After a horrific accident during a hunt far from home, Keda is believed dead and his tribe leaves the hunting ground. Left with only his skills and sheer grit, Keda is determined to return to his family. He forms an unlikely friendship with a wolf and this bond deepens over time. The movie does take some creative license, but it is a tale well told and just perfect for our study of this era.

Build: History

The Paleolithic Age

CAVE PAINTINGS

- On September 12, 1940, the entrance to the Lascaux Cave in France was discovered by 18-year-old Marcel Ravidat when his dog, Robot, fell in a hole. Ravidat returned to the scene with three friends. They entered via shaft that they believed might be a legendary secret passage to the nearby Lascaux Manor. The teenagers discovered that the cave walls were covered with depictions of animals.
- The cave displays some of the world's richest collection of paintings from the Palaeolithic era, with more than 2,000 figures of men, animals and abstract symbols represented. Shades of red, yellow and black dominate as the paintings were created using mineral pigments.
- Most of the paintings are of horses, stags, cattle and bison. Other paintings depict felines, a bird, a bear, a rhinoceros, and a human. Interestingly, there are no images of reindeer even though reindeer meat was a staple.
- **ACTIVITY 1:** Ask students about pictures they have seen that communicate specific information. These may be signs *no smoking, handicapped, man, woman, no parking, airport,* etc. Why do these work well? Even people who don't speak the language can understand what is being communicated. Ask your students to convey a message on paper without using words.
- **ACTIVITY 2:** Get students to make stones out of clay. When the stones are dry paint them in the same style as the cave paintings. If clay is not available, use a big piece of sandpaper. Ask the students to explain how it felt to paint and draw on such surfaces.
- **ACTIVITY 3:** Try making your own paints/dyes. Perhaps you can get colours from the pigments of flowers or vegetables.
- **Discuss:** Why did the people make those paintings? Were they celebrating a successful hunt? Was it an act of worship? We can only speculate, but these drawings certainly give us a fascinating glimpse of a time long, long ago.❄

Notes & Gems