

STEMMING FROM CHILDHOOD

THE DEFINITIVE **YOUTH** MAGAZINE
SHOUT

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STEM has now become a buzzword in education, parents and educators are stressing over to such an extent that it has become a norm to pursue STEM. Short for Science, Technology, Engineering and Mathematics, the field is receiving attention that is justified in the sense that more and more careers are merging these disciplines and calling for critical and analytical skills. Its importance is emphasised because it generates critical thinkers and paves way to innovation for sustained growth and a stable economy.

For people aiming for a STEM field, cultivating a passion and understanding of STEM from an early age can be a good start. Surely, it is not mandatory nor important for every mind to enter such a field. However, honing skills in mathematics, natural sciences and technology will arguably help in any future career in the 21st century. Not to mention the significant amount of leverage it adds to classes taken in schools and colleges. Here is a guide to resources, both online and offline, that children of different age groups could use to build a strong foundation in STEM.

CLASSES IN DHAKA

SciTech Academy runs classes on the fundamentals of STEM and then specialised classes on robotics, programming and environmental sciences. Their classes touch on coding, animation, physics, chemistry, digital and media. They cater to 6 to 14 year olds with separate classes for 6 to 10 and 11 to 14 year olds respectively.

Each course runs for three months and their monthly fee is about BDT 5500 with an admission fee of BDT 1000. They aim to teach kids 21st century skills including problem solving, critical thinking, curiosity and creativity. Their office is at Gulshan 2.

Aloha Bangladesh teaches mental math to kids in a way that builds their computational ability for the long run. Kids learn to calculate faster and more confidently, without using a calculator. Aloha has almost 30 branches across Dhaka city and 15 more in different districts across the country. Their classes are split into Aloha Senior and Aloha Junior based on age range. Aloha's admission fee for their Dhaka centres ranges from BDT 4000 to BDT 5900 while their monthly fee ranges from BDT 1500 to BDT 2500. Prices vary in districts outside Dhaka. Currently they are running online courses through Zoom.

STEM 4 Future uses a multidisciplinary

format to teach kids STEM subjects and exposes them to the practical applications of the field. They have a “computing for kids” programme where 7 to 9-year olds are taught Scratch and 10 to 14 years olds Python. Kids learn coding, game development and design. They are located in Uttara Sector 4.

YOUTUBE CHANNELS

While kids being on electronic devices for significant amounts of time is generally discouraged, the limited time they are allowed can be used to gear them towards science-related YouTube channels which do a great job of explaining scientific concepts in a fun, learning manner.

Crash Course Kids uses animation to teach everything from space science to physical science and life science. *SciShow Kids* has a more practical approach and has a variety of content including fun segments such as ‘Science in the Kitchen’, and segments where they explain how everyday machines around us work. There

are also channels that are dedicated simply to inspire and engage girls in science, such as *Science With Sophie*.

Similarly, *CrashCourse* focuses on science but for an older age range. Their playlist is diverse: from World History to Chemistry, from Artificial Intelligence to Entrepreneurship, they have it all. While we are on the subject of super fun animated videos, *Kurzgesagt – In a Nutshell* specialises in futurism, philosophy and of course, science!

Ever watched *Draw My Life* videos? We love it. Some of us just can't get over how aesthetically pleasing the doodles look. And you can get more of these while learning fun laws of science under 5 to 10 minutes. Follow *ASAPScience* or *minutephysics* or maybe both!

If you are clinging more on to humane tutorials, you could try *Physics Girl* or *Veritasium*. These are great channels for physics enthusiasts. But if you're more of a biology person, *Bozeman Science* could

soon become your most watched channel once you start.

BLOGS

Videos can only go so far. Not all can be covered. And long videos are likely to lose audience midway. Some people like to read. Behold, blogs.

For the little ones, curiosity never ends. These websites give answers to everything. Why does ice melt? What is a blood clot? Newton's cradle? Try out www.scienceabc.com or www.wonderopolis.org

Advanced learners can check out one of the following: www.livescience.com, www.howstuffworks.com, www.zmescience.com, or www.scientificamerican.com

AT-HOME ACTIVITIES

There are plenty of fun and feasible science experiments and activities that kids can do safely at home and with available household objects (with some adult supervision of course).

Playing around and having fun with science may create a liking for the subject once they realise how fun it can be.

Playlists of numerous ideas for such activities and experiments can be found at the following YouTube channels: *Nat Geo Kids*, *PBS KIDS for Parents*, and *SciShow Kids*. The show ‘Backyard Science’, is available on YouTube in the channel *Kids Science* and each episode is packed with many fun experiments that can be done at home.

GAMES AND TOYS

As a supplement to institutional science learning, board games and kits are a fun way to get kids interested in science while keeping them occupied.

Onnorokom Bigganbaksho has a range of kits that cover various aspects of math and science. Each kit comes with a range of tools and components that kids can use to experiment, build things or simply play around with. Each of their products cover a specific area such as measurement, magnets, electricity, light and sounds.

They have both English and Bangla versions of their products. The price for each box ranges from BDT 650 to 970 with only a few exclusive kits being priced at BDT 1450 to 2990. The boxes are sold online at Daraz and

develop counting skills, spatial skills and pattern identifying ability or helps them learn about structures, gravity and forces.

NETFLIX

The best titles on Netflix that'll inspire and educate kids are *Emily's Wonder Lab*, *Sid the Science Kid*, *Cutest animals*, *The Magic School Bus*, *Growing Up Wild*, *If I Were An Animal* and *Brian Child*.

On a different note, part of being a parent means spending time with your kids. Watching educational series can be a way to go

about doing that. While piquing an interest can be a tough job, make sure to start off with the right ones.

Our Planet is an award-winning show portraying the impact of climate change on the biodiversity of earth. *Explained* is another docu-series featuring science and much more. Episodes range from designer DNA to astronomy, from why women are paid less in K-pop. When science is integrated a little here and a little there, with other entertaining elements, the children are bound to stay back and watch.

Depending on the age range of the child, there are also toy abacuses, pattern matching card games, kid scientist kits, dominoes, Rubik's cubes and toy magnets for sale at toy shops around the city. These games help kids

Talking about commitment issues, try an

change), *Mission Blue* (on ocean exploration and protection rights) and *Ivory Game* (undercover film-makers' take on global ivory trafficking crisis) are a few starters available on Netflix.

IN CONCLUSION
Science is fun, especially when the knowledge comes from the right place. Most often, young students derive the firsts from schools where the pressure to ace is extreme and the want to dig deeper dies away. It diverts to gross memorisation without precise understanding of theorems, mechanisms or pathways. In the long run, passion to willingly pursue a STEM career fades. Even if they do stick to one, there are obvious differences between passion-driven and forced performances. It is a vicious cycle where they carry forward ingrained misunderstandings or animosity toward natural sciences causing demotivation. But learners would not be willing to correct these conceptual flaws unless they are motivated.

So, how should parents value their children's effort. By commendation. This is not synonymous with appreciation of good grades but of the effort they invested, the strategies they chose, their perseverance throughout and their intelligence over all. Bear in mind that children can sense when adults feign interest or approval. They also understand disappointment cues. Thus, genuinely get interested in what they do and want to do. Building a connection is key. If they have other pursuits, let them be. STEM and music can go along. So would STEM and sports. Coercion, discouragement and disapproval only set them up for failure in what they're “supposed” to pick and what they want to choose.

Science should not be a chore to children. It should be a favourite pastime; something they'd look forward to and make time for instead of dodging and dismissing.

Hiya finally has time to catch up with her book-reading goals. Suggest her something at hiyaislam.11@gmail.com

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