



Science activities can involve all kinds of living things, everyday objects and open-ended materials

FUTURE PROOF

Why science education matters in early childhood.

Children are naturally curious about the world around them. They ask questions to learn and understand things.

Encouraging children's natural predisposition for exploration and discovery has several benefits. It nurtures a positive approach to science education, which prepares the groundwork for future careers in the field. It also provides opportunities to develop other important skills, observes Dr Lee Song Choon, Director of KidsSTOP™, the Science Centre Singapore's dedicated gallery for children aged 18 months to eight years old.

EARLY START FOR HOLISTIC DEVELOPMENT

The Science Centre advocates introducing young children to science as it helps cultivate a strong interest in STEM (science, technology, engineering and mathematics) that will stay with them as they grow older.

"Early childhood is a good time to introduce our future generations to the joys of scientific discovery. It will ensure a diverse population of STEM innovators for the future," says Dr Lee. "With a steady increase in STEM opportunities in the workplace, continuously engaging children in science will stand them in good stead."

Careers aside, he explains that science education also plays an important role in developing a well-rounded skill set. "Science activities provide children with opportunities to develop communication and collaborative skills, perseverance, as well as science process skills such as observing, comparing, classifying, predicting, experimenting, recording and communicating. These are

useful in any situation that requires critical thinking and problem solving."

The exhibits at KidsSTOP are geared towards helping children develop science process skills through interactive play. For example, when children play at the Built Environment exhibit, they get to observe how the crane transports balls around and predict where the balls will land when the crane claw opens. With light play, children can observe how light travels through different materials and compare the amount of light that passes through them.

Skills such as observing, predicting and comparing can be applied to other fields such as maths, geography and even cooking, notes Dr Lee. "Science process skills are also the prerequisite to 21st-century skills such as digital literacy, inventive thinking and effective communication," he says.



KidsSTOP offers family bonding and hands-on learning

NURTURE YOUR LITTLE SCIENTIST

Dr Lee offers these tips for planning science activities for children.

- **Create an inviting environment.** Designate a space for open-ended play with a variety of materials (e.g. cardboard, wood, recycled materials). Give children time to explore through trial and error.
- **Plan activities with a low entry barrier.** This allows children to achieve early successes and encourages them to explore further. But do not set the bar too low such that it stifles further exploration and creativity.
- **Value children's questions.** Encourage them to share their perspectives. Do not laugh at or dismiss their questions, for it can arrest thinking, squash imagination and destroy confidence.
- **Say "Let's find out!" instead of "I don't know".** If you are stumped by a question, find out the answer together. Ask open-ended questions such as "Why do you think...?" and "What do you think will happen next?"



WHAT'S NEW AT KidsSTOP

The revamped **Supermarket** exhibit has new interactive panels such as the 'Whack and Stack' game and a water window, where children can learn about healthy eating habits through play.

Opportunities for parent-child bonding through hands-on learning are available with the new **Being Me! kit** and the latest edition of the **Little Footprints adventure trail kit**.

To find out more about these and other KidsSTOP resources and programmes, visit www.science.edu.sg/visit-us/kidsstop or the Science Centre's social media sites.

MEET AN ASTRONAUT

In October 2021, Methodist Preschool Services piloted a new, first-of-its-kind programme in partnership with Space Faculty Pte Ltd to introduce its K2 students to space exploration. This 'Space Buds' programme aimed to build lifelong interest and foundational knowledge in space and STEM.

The highlight of the programme was a live Zoom session with American astronaut, Nick Hague from the National Aeronautics and Space Administration (NASA). He shared fascinating stories, photos and videos of his time in space. He may well have inspired K2 student Anya Wong to consider a career in space. "I would like to float around in space, do somersaults and fly like a bird. It would be so exciting to do things that I can't do on Earth," said Anya.

From the experience of conducting the programme, Mrs Janice Lim-Raj, Principal of Faith Methodist Preschool, noted that while space may be an abstract concept, it can be made relatable to young children through hands-on activities. For example, light and shadow play was used to explain moon phases. Children also sampled space ice cream to learn the difference between food consumed in space and on Earth.

Mrs Lim-Raj shared five key points for planning a developmentally appropriate science curriculum:

- 1 **Plan fun, hands-on experiences.** "Provide objects, living things and everyday materials that engage children, even if messy or inconvenient."



Methodist Preschool's K2 class dress up as astronauts for a special live Zoom session with NASA astronaut Nick Hague



An interactive lesson on moon phases

- 2 **Value the process over the results.** "The main aim is to nurture children's curiosity and foster their investigative skills, not necessarily finding the 'right' answer."
- 3 **Be open to child-led discoveries.** "As facilitators, educators must be responsive to children's observations and perspectives and encourage them to ask questions."
- 4 **Let children try things out on their own.** "Wait before jumping in with answers. Create a non-threatening learning environment and nurture a positive learning experience."
- 5 **Learn from mistakes together.** "A mistake can lead to all kinds of possibilities to refine ideas, understanding and hypotheses. Become role models to children in cultivating perseverance and positive lifelong learning dispositions."

"When I was your age, I wanted to know why things worked the way they worked and why things were the way they were. And even more so when I looked up at the night sky — I saw all the stars (and) I was like, 'What is out there?'. As I grew up, I started to realise that the curiosity (I had) was something I could do for a job. I could be a scientist, ask questions, and do experiments and answer those."

Nick Hague, NASA astronaut



Learn

win →

Three lucky readers will each receive a KidsSTOP Activity Book, a Little Footprints Adventure Trail Kit, and KidsSTOP admission tickets for 1 adult and 1 child.



Simply answer this question:
Name one process skill taught in science education.

Submit your answer online at go.gov.sg/beanstalk-thrive-contest or scan this QR code.

Closing date: **25 February 2022**



Embrace Change

Help children cope with challenges and anxiety.

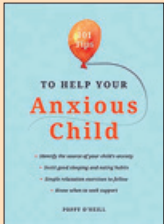


> Maddie Makes Friends

By Ho Lee-Ling and Patrick Yee

A new friendship ignites with just a simple smile and a greeting "hello". Celebrating race, diversity and the *kampung* spirit of neighbourliness in Singapore's HDB heartlands, this touching and inspiring book gently nudges us to open our guarded hearts and seek out precious connections with the people around us as active, engaged and empathetic members of society.

Contributed by Ashley Chew, Associate Librarian, National Library Board



> 101 Tips to Help Your Anxious Child: Ways to Help Your Child Overcome Their Fears and Worries

By Poppy O'Neill

OverDrive link: nlb.overdrive.com/media/5694265

This book provides a comprehensive guide for parents to help children manage their anxieties. Along with recommendations on calming methods, lifestyle tweaks, listening techniques and talking points to explore with children, it is a great starting point for any parent who is learning to help their little one cope with big emotions.

Contributed by Koh Si Ming, Associate Librarian, National Library Board



LOOK ON THE BRIGHT SIDE

Training your child's brain to think positive thoughts will help him/her cope better with stress or changes. Here's a tip for parents with young ones aged 4 to 5.

At bedtime, take turns with your child listing things you're thankful for. Here's an easy one to start with: "I'm thankful for you!". Then, help him/her think of something he/she is thankful to have in his/her life. See how many times you can go back and forth.

For more parenting resources, visit go.gov.sg/familiesforlifeparenting.



FOR YOUR DAILY DOSE OF EARLY CHILDHOOD INSPIRATION...

Grow@Beanstalk is your one-stop early childhood (EC) resource portal for inspiring stories, useful tips and activity ideas, as well as the latest happenings from the EC sector.



Visit www.ecda.gov.sg/growatbeanstalk, or scan the QR code



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Connect with us at www.facebook.com/BeanstalkSingapore, or scan the QR code



It's not just work when you work with children. If you aspire to make a lifelong impact, join us as an Early Childhood Professional to shape the next generation.



Start a career in EC at www.ecda.gov.sg/ShapeOurTomorrow, or scan the QR code



Check out our Instagram page for exciting developments in the EC sector. Be inspired by what educators say about giving a good start to every child.



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