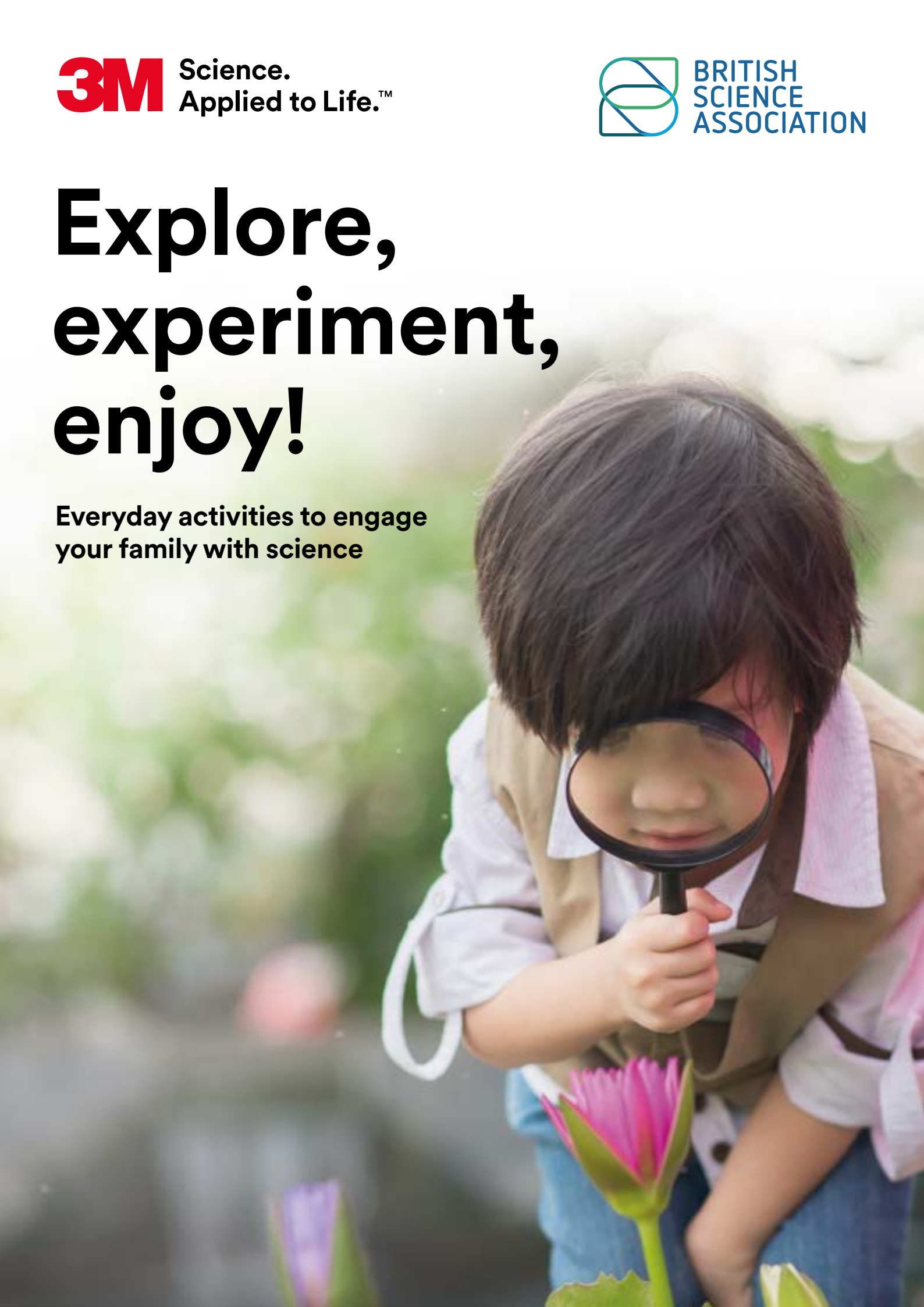
3M Science. Applied to Life.™

BRITISH SCIENCE ASSOCIATION

Explore, experiment, enjoy!

Everyday activities to engage your family with science



As a science-based technology company, 3M shares the passion of the British Science Association (BSA) in helping to make science more accessible and relevant to everyone.

We conducted a global survey* to explore people's understanding and appreciation of how science impacts our world and their perceptions of how it might shape the future.

The findings reveal that an overwhelming 94% of UK parents surveyed want their children to know more about science.

One of the best ways to engage your children is through everyday activities that demonstrate how science is central to their lives and the world around them – science isn't just for the classroom.

However, parents can be concerned that their children will ask them questions they don't know the answer to. If this is you, don't worry – why not find the answers together? After all, science isn't just about facts, it's also about investigation – and there are always new ideas to try.

To provide support and inspiration for families, 3M and the BSA have teamed up to produce this guide, which is full of exciting ideas with signposts to further information and resources.

*www.3M.com/scienceindex

We hope you enjoy these top tips to foster enjoyment of science through everyday activities for the whole family.

Key

Age
- 5–14 Age range specified
- All Suitable for any age

Price
- £ Free
- £ Low cost
- £-£ Cost varies

Going out

1 Explore nature

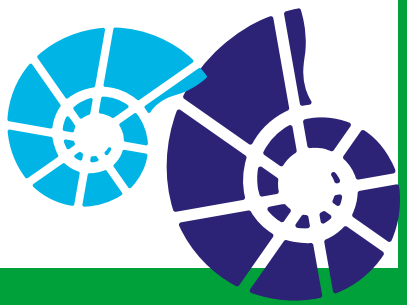
All £

Activities such as nature walks and bird spotting are not just a great way of getting some fresh air, they can also help contribute to studies looking at the environment. For instance, the Woodland Trust's **'Nature's Calendar'** asks people to go out and about to spot the first signs of spring and autumn, helping them monitor the effects of climate change on wildlife.

2 Head for the beach

All £

Join the campaign to clean up ocean plastics by taking part in an organised beach clean (you can find out more on the **Marine Conservation Society's website**). Alternatively, if you think geography and geology may be appealing to your children, try some **fossil hunting**.



3 Look to the stars

All £-£ requires camera or telescopic equipment

Researchers from the University of Birmingham have created **new star constellations** based on popular figures such as Harry Potter, Tim Peake and Serena Williams to help inspire young people. Encourage children to make a moon diary by looking at the skies over several days. Or, if they are keen on photography, they could find out how to take **pictures of the night sky**. There is plenty to be seen with the naked eye, but if you want to go a step further, your **local astronomy club** will be able to give advice on using equipment.

4 Take a trip to your local museum or science and discovery centre

All £ £-£ some are free, some have a cost

There is a list of science and discovery centres **here,** or check out your nearest nature reserve through the **Wildlife Trust**.

5 Find an event near you

All £ £-£ some are free, some have a cost

Throughout British Science Week (9–18 March 2018) there are hundreds of events taking place across the UK, and across the year there are many science festivals that give you the chance to meet researchers and people working in the field. Check out **www.sciencelive.net** for listings.

6 I spy

3–10 £

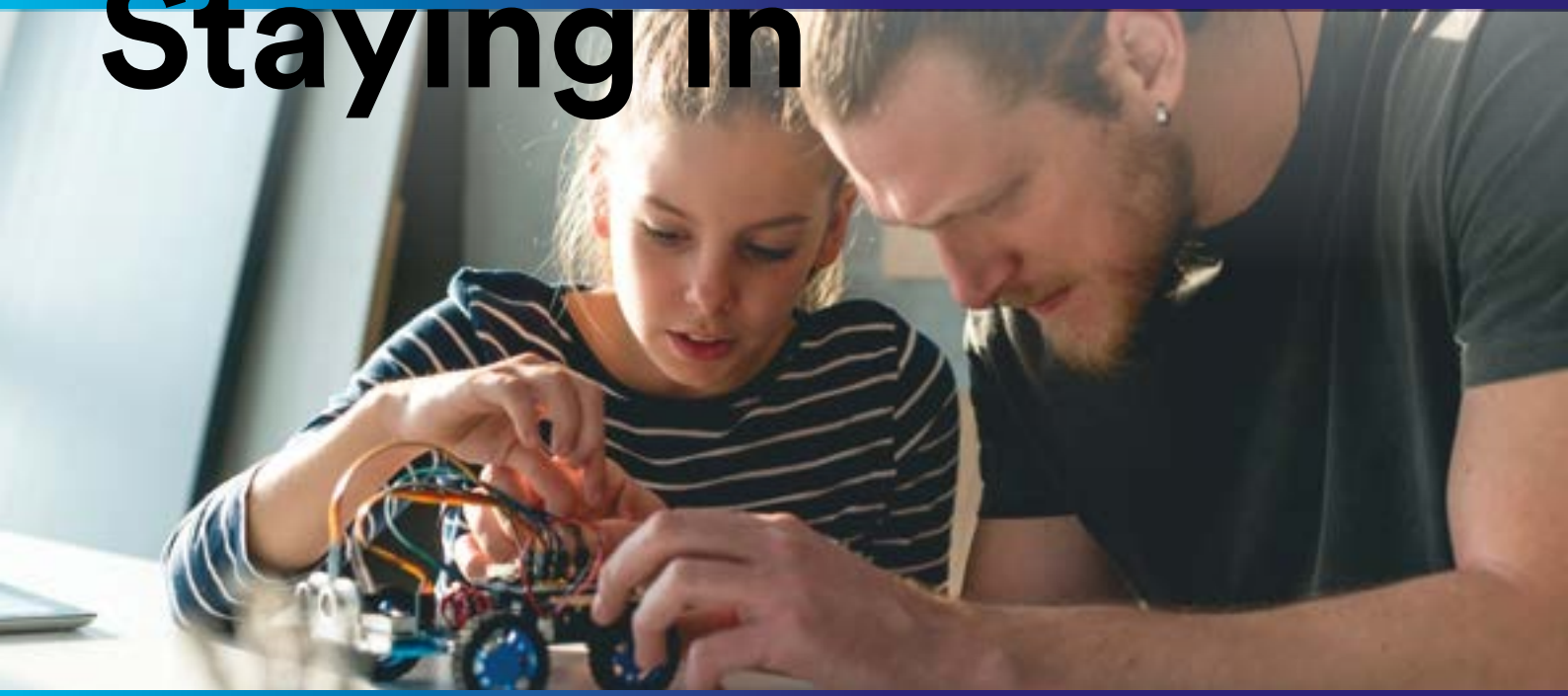
While you are out and about, encourage your child to take photographs or sketches of interesting things they see – for instance, of nature and the landscape or buildings and transport. They could create a collage or scrap book of images back at home and use it to talk about what they've seen and the questions they have.

7 Getting around

7–13 £ – £ Friends of the Earth offers **clean air kits in return for a donation.**

Encourage children with bicycles, scooters or wheelchairs to find the most wheel-friendly routes near your home and make a map to show others. **Explore the air pollution** map of your area and work out which route would have the cleanest air.

Staying in



8 Magazines, books, film and TV

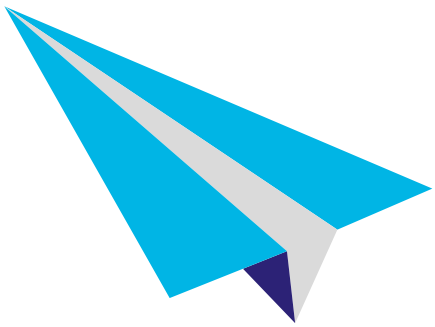
All £-£

These are great ways to engage youngsters in a variety of topics. We love the arts-science magazine, **Okido**, and children's shows such as *Octonauts, Operation Ouch* and *Bitz and Bob*. **This book** written and illustrated by Rachel Ignotofsky tells the stories of fearless female pioneers, while science teacher, writer and film maker, Alom Shaha's new book, ***Mr Shaha's Recipes for Wonder*** offers great support for parents. Films such as The Martian and TV series such as Blue Planet II are sure to inspire intrepid explorers of the future.

9 Building and making

All £

Don't fall for gender stereotypes; construction toys and logic puzzles are important for developing skills such as spacial ability and can support girls' interest in science and engineering. Encourage your child to make things using scrap cardboard, empty containers and other recycled materials. The Let Toys Be Toys campaign aims to challenge gendered marketing and recognises retailers that are doing a great job with their **'Toymark Good Practice' award.**



10 Get hands on

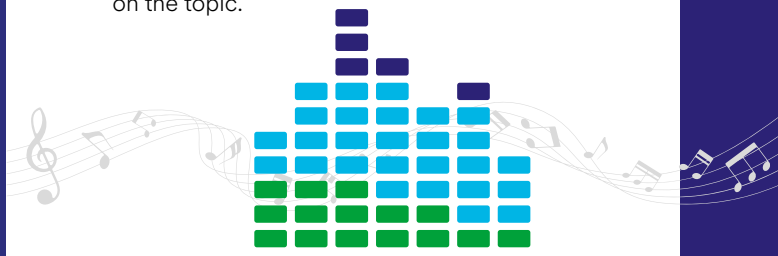
3–14 | £ | £-£ you may have to purchase some of the equipment

Lots of experiments can be done in the home using everyday kitchen cupboard ingredients. The British Science Week **activity packs** are full of ideas, and The Science Museum's website features a **collection of activities** you can do at home, while the Royal Institution's **ExpeRimental channel** has plenty of videos, as well as **this advice** for parents to get you started.

11 Music

5+ | £

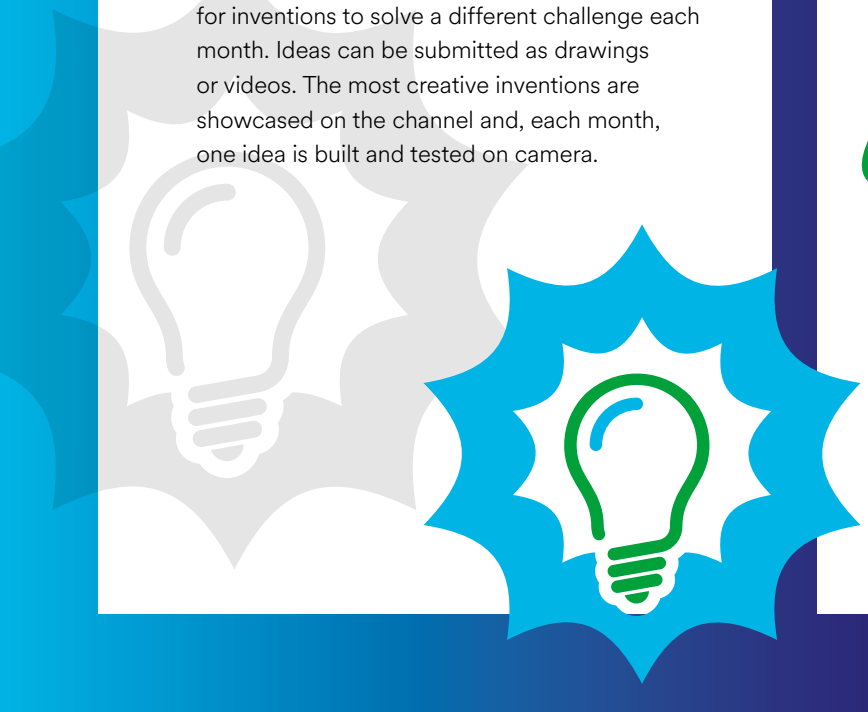
For younger children, have fun with arts and crafts and see what you have around the house that can be used to investigate sounds. Older children may like to explore how music is created and recorded. **This video** is a collaboration between the BSA and Nation of Billions, that features interviews with BBC Radio 1Xtra DJs, as well as coding experts, on the topic.



12 See an invention (maybe) turned into reality

5–11 | £

Kids Invent Stuff is a brilliantly fun YouTube channel where children are encouraged to submit their ideas for inventions to solve a different challenge each month. Ideas can be submitted as drawings or videos. The most creative inventions are showcased on the channel and, each month, one idea is built and tested on camera.



13 Cooking

5–14 | £-£

If your child enjoys cooking, suggest they try some food science experiments. Pinterest boards such as **this one** can be a great source of inspiration.

14 Coding

7–18 £-£

If your child loves computer games, look out for free online resources (for example **Made with Code**) to help them learn to code themselves. There is also inspiration in the form of ready-made kits (such as these from **Tech Will Save Us** or the **Science Museum**). Also, think about code-breaking and cryptography – delve into a secret world of hidden messages with Morse Code, mirror writing or invisible ink.

15 Performance

7–18 £ - £

If your child likes to perform, a few simple science demos make a great show to present to family and friends. Be inspired by science buskers and find ideas for demos and top tips for presenting them **here**.

16 Exploring body and mind

9+ £

There are lots of experiments centred around being active. Have a go at getting children to **measure their pulse** and then jogging on the spot and measuring it again. Suggest they try out listening to different kinds of music while doing homework and seeing which one helps them concentrate the best!

17 Try sofa citizen science

9+ £ if you have the internet

Contribute to real-life research from the comfort of your own home by having a go at one of the many web-based citizen science activities, such as **Penguin Watch**, **Planet Hunters** or **The Plastic Tide**.

18 Capitalise on their hobbies

Teen £ if you have the internet

Researchers at North Carolina State University found that hobbies could have a role to play in developing an interest in science in later life. There is so much science and technology to explore behind all sorts of everyday activities and hobbies, such as arts and crafts, music, dancing and sport.

We hope these ideas demonstrate that science is interwoven into many aspects of our lives and that everyday family activities can offer an enjoyable way of engaging with it.

Science is about curiosity – it offers the opportunity to ask questions and explore the world. As a family you can talk together about what you're seeing and doing, and encourage everyone to ask questions about how things work. And, if you have a question you can't immediately answer, make a plan to discover and learn together. That's what scientists do.

By igniting a passion for science at an early age, you can guide your child to a rewarding science-based career that could change lives for the better.

www.britishscienceassociation.org

3M United Kingdom PLC
3M Centre
Cain Road
Bracknell
Berkshire RG12 8HT

British Science Association
165 Queens Gate
London
SW7 5HD

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