7 top tips to help your child with primary science

Here are some fun and interesting things you can do together at home over the summer – and they will improve your child's understanding and appreciation of science!

1. **Keep it real.** Find learning in everyday activities and build on your child's interests. Everyday and real world contexts help to make science more recognisable and accessible. Building a den, creating from Lego, and preparing simple food all link to the curriculum and provide great opportunities to develop an understanding of the world around them. Our educational family activities collection are a great place to start, not least 'Starters for STEM'.

2. **Be inspired.** Explore the range of exciting science-related careers and the skills involved. Finding out about real-life role models is a great way to bring science to life, link learning to real world applications, and encourage young people to think about their future. Watch a wildlife documentary together and talk about the people and jobs involved. You can research different STEM careers available - explore what it takes to be an astronaut.

3. **Go exploring.** Discover the wealth of science in nature. You can discover a lot of science in the world around you. A simple walk to the park, a trip to some woods or the coast or even exploring weather patterns will open up possibilities to explore the natural world and nature and showcase the science involved. Maybe find out about extreme elements or animal adaptations.

4. **Get creative.** Make science models out of things you find around the home or outdoors. Make a skeleton using cocktail sticks or bone shaped dog biscuits, or use materials you find outside to represent the different parts of the digestive system, mouth, oesophagus, stomach etc. Use different sized fruit to make a model solar system or design a holiday space suit for people visiting the moon. Get some more ideas from our collection.

5. **Challenge yourself.** Self-regulation in children is key to achieving academic goals. This includes developing skills such as goal-setting, planning, perseverance, and the management of time, materials and emotions. STEM challenges and competitions are great for this. Create a science-themed family challenge (bake-off, daily steps, sunflower growing), explore movies and magic, or look out for local, national or international competitions.

6. **Grow together.** Learn with others through local STEM Clubs and family activities. Look out for holiday-time STEM opportunities offered by your child's school, library or other local groups. Parental encouragement and interest in science learning helps demonstrate its value to young people. Clubs and events are great for learning with others, whilst building your own knowledge and confidence. Check out our National STEM Club too.

7. **Build it in.** Develop English and maths skills using science contexts. Explore the science in the stories you read - which building materials are the best for a house for the Three Little Pigs? Record daily temperatures throughout the summer and look for patterns. Measure baking ingredients and explore how the oven changes them. Talk about animals, birds, flowers and trees you see when on a walk. Take a look at Explorify for more ideas.

7 top tips to help your child with secondary science

Here are some fun and interesting things you can do together at home over the summer – and they will improve your child's understanding and appreciation of science!

1. **Keep it real.** Find learning in everyday activities and build on your child's interests. Everyday and real world contexts help to make science more recognisable and accessible. Look at items you come into contact with every day or are in the news, such as vehicles, smart phones, green energy, vaccine cures, they all provide context as to the importance and use of science in real life.

2. **Be inspired.** Explore the range of exciting science-related careers and the skills involved. Finding out about real-life role models is a great way to bring science to life, link learning to real world applications, and encourage young people to think about their future. Watch a wildlife documentary together and talk about the people and jobs involved. You can research different STEM careers available - explore what it takes to be an astronaut.

3. **Go exploring.** Being outdoors can stimulate young people, giving them context to the science they know. If you are on a walk, in a park or even on a trip to the shops, spotting science in action can help young people make links and ask questions. Linking to the natural environment is also great, whether it's the seaside or inner city. Using free apps and guides can help you and young people identify nature around them.

4. **Get creative.** Engaging with activities that support classroom learning across a variety of subjects provides an excellent opportunity for parents to actively involve themselves with their child's learning. This is especially true if you can set daily and weekly activities that link together to form a theme. Practical, fun and creative activities will reinforce skill sets and widen the perception of how STEM subjects are used.

5. **Challenge yourself.** Working together to make a difference. For example, the Climate Detectives challenge set by the European Space Agency and ESERO-UK invites 8 to 15 year olds to identify a climate problem, investigate it and present ideas of how to tackle those issues.

6. **Grow together.** Look out for holiday-time STEM opportunities offered by your child's school, library or other local groups. Engage with summer STEM events such as fairs and workshops or visit science museums. Parental encouragement and interest in science learning helps demonstrate its value to young people. STEM Clubs and events are great ways to learn with others, whilst building your own knowledge and confidence.

7. **Build it in.** Reading about science or watching science-related TV can help young people connect with real-life science. A good source like Catalyst magazine offers bite-size chunks of science which help with developing vocabulary, and provide context to the science they have learnt in school. Even re-reading a school text book can help. Encouraging young people to highlight words they don't understand and to look them up can be useful.

At STEM Learning, our commitment to science, technology, engineering and mathematics (STEM) education is part of everything we do. Whether that's delivering teacher CPD (continuing professional development) in STEM subjects, working with consortium partners to deliver the National Centre for Computing Education (NCCE), bringing professional role models into schools as part of the STEM Ambassador Programme or providing bespoke, long-term support for groups of schools in collaboration with companies through our ENTHUSE Partnerships, our aim is always the same – to provide a world-leading STEM education for all young people across the UK.

7 top tips to help your child with primary computing

Here are some fun and interesting things you can do together at home over the summer – and they will improve your child's understanding and appreciation of computing!

1. **Keep it real.** Find links to computing in everyday life. Taking photographs, crossing roads at traffic lights, paying for things in shops or playing games on devices all rely on computers. Bring programming into routines - act out instructions for everyday things like brushing teeth or making breakfast in a robotic voice. Try doing it the wrong way round and see what happens. They can debug their original instructions to make the process run smoothly.

2. **Be inspired.** Think about all the amazing things that wouldn't be possible without computing. For example, robotic missions to other planets - like Rosalind Franklin, the rover set to explore Mars, and earth observation satellites. Code Club resources cover a whole range of creative and engaging activities, such as analysing data from the two small Astro-Pi flight computers that orbit the Earth aboard the International Space Station.

3. **Go exploring.** Download an app or spotter sheets onto your phone and go on a nature walk. See how many different plants or invertebrates you can identify using the app. Take photographs of what you find and try and identify it. Find out about your plants or animals and create a fact file about it on a computer, adding an image and text boxes for information. Think about who will be reading your fact file and make it engaging and informative.

4. **Get creative.** Children of all ages can enjoy coding in their favourite games online, or find new ones that engage them. Scratch Junior is something children will be familiar with from school, but there are many other sites that also provide children with a way to be creative with code. You can pick up new skills at Hour of Code. Explore Tinkercad and have a go at computer design, get coding in Minecraft or even code your own dance party!

5. **Challenge yourself.** Get involved in, or set yourself a computing-themed challenge or look out for competitions running locally, nationally or even internationally. Technology may be involved in solving lots of problems that children see in their everyday lives. Identify issues or problems in your local area or everyday lives, and think about how they could solve these using technology. Maybe take on one of these coding projects.

6. **Grow together.** Primary children can learn with parents through Barefoot Computing - and parents get an easy introduction to computational thinking. For children aged 9-13, there is Code Club, which is a global network of free coding clubs. Also explore our exciting set of home learning resources for primary computing.

7. **Build it in.** Talk to your child about being confident and keeping safe online. Discuss information about themselves that they would tell each of: close family, friends and people they don't know. Talk about situations where they may be asked to share information and what is appropriate to share online and what is not. You can support your child with our digital literacy resources for key stage 1 (age 5-7) and key stage 2 (age 7-11).

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7 top tips to help your child with secondary computing

Here are some fun and interesting things you can do together at home over the summer – and they will improve your child's understanding and appreciation of computing!

1. **Keep it real.** Young people spend a lot of time online, and keeping current on what's hot, and what should be avoided, can be a challenge. There's tons of guidance at the UK Safer Internet Centre to keep what they do safe. It offers the same advice that teachers receive via their own courses and resources through the National Centre for Computing Education (NCCE) so young people get consistent guidance at school and home.

2. **Be inspired.** Creative projects are a great way to boost confidence over the summer, building on existing knowledge while working towards making something to be proud of. Make a website, create music or animate your favourite cartoon character. Code Club projects are simple to follow and rewarding to do. When schools return, talk to teachers about maintaining the inspiration by starting or joining a Code Club or STEM Club.

3. **Go exploring.** Computing is all around you. Digital devices are embedded into unexpected places, hidden in plain sight. Take a look at the mysterious street boxes, controlling traffic lights or routing broadband, that you pass every day. Find embedded devices in washing machines, ovens, cars - and think about the many jobs done by people who put them there.

4. **Get creative.** Learning to program computers is a key skill - not just in computing but in many other areas of life. Learning at your own pace is a great way to develop new skills and consolidate existing knowledge - the free tools are in your hands! Whether you're learning to program with blocks or text, our free programming resource collection has what you need to get started.

5. **Challenge yourself.** At Isaac Computer Science, A level computer science students can complete a monthly gameboard challenge for a chance to win a Raspberry Pi computer - while improving core knowledge that relates directly to their exams and assessments. There's also loads of resources to help students on the Isaac Computer Science website.

6. **Grow together.** With life moving increasingly online, cybersecurity expertise is accelerating as a future career, helping to keep our devices and services stay safe from the threat of attack. This summer, join free residential and online courses in cybersecurity from CyberFirst. A partner of the NCCE, CyberFirst develops the next generation of cyber professionals and is led by the National Cyber Crime Centre at GCHQ.

7. **Build it in.** Develop stronger computing knowledge and skills, and close any gaps in learning, through a rich range of activities and information sources. Explore a variety of activities and challenges that can be used to support children's computing education from home in our home learning pages for secondary computing.

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