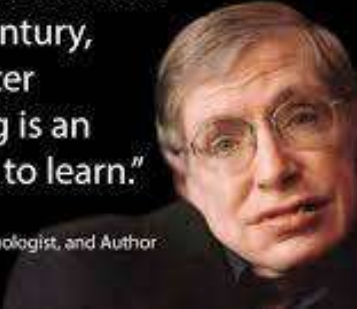




Computing Portfolio

"Whether you want to uncover the secrets of the universe, or you want to pursue a career in the 21st century, basic computer programming is an essential skill to learn."

Stephen Hawking
Theoretical Physicist, Cosmologist, and Author



"COMPUTER TECHNOLOGY IS SO BUILT INTO OUR LIVES THAT IT'S PART OF THE SURROUND OF EVERY ARTIST."

STEVEN LEVY

@Lifehack Quotes

"Every girl deserves to take part in creating the technology that will change our world, and change who runs it."

— Malala Yousafzai, Nobel Peace Prize Winner





Curriculum overview:

Intent

At The Mease Spencer Academy, we are passionate about all of our children becoming digitally literate; we understand and capitalize on the unique place it has for those with special educational needs. Our Computing curriculum focuses on a progression of skills in digital literacy, computer science, information technology and online safety to ensure that children become competent in safely using, as well as understanding, technology beyond the classroom. Each of these themes are revisited and built upon yearly to ensure that key knowledge is embedded and time is built into our weekly provision to allow for rehearsal and retrieval. We want our children to leave us prepared for their future learning and with ability to adapt to the ever advancing technological world, the integration of computing across the curriculum enriches their provision and gives them opportunities to apply the knowledge and skills they have learnt in a different context. Our children will leave The Mease Spencer Academy as confident, capable, creative and safe users of technology.





Implementation

At The Mease Spencer Academy we use Switched On Computing to support our computing curriculum. It ensures a comprehensive and clear progression of skills in digital literacy, computer science, information technology and online safety. We recognise it's strengths in providing high quality projects which develop the children's use of computing skills. As we are a small school, we also utilise it's opportunities for staff CPD, alongside our own, and planning support to ensure key knowledge is at the core of our teaching and learning without unnecessary burdens on staff.

Each lesson begins with an opportunity to revisit and retrieve prior knowledge and the lessons progress in small steps to develop the children's competency in the skill they are practicing which allows teachers to addressing misconceptions in a timely manner. During lessons, children learn to express themselves through multimedia for example; writing, presenting, exploring art and design, music.

Children have opportunities to debug and revisit after well planned assessment.

The cross curricular connections identified by Switched On Computing allow for opportunities for the children to develop their competency, promote retention and understand how the knowledge and skills they have learnt can be applied within the world beyond education. We also utilise computers to support in learning for other subjects e.g. TTRockstars in Maths, Reading, research for writing and foundation subjects.

Each class has digital leaders who are in charge of ensuring computing equipment is stored, looked after and used safely.

Impact

For our pupils to:

- Be competent, safe users of ICT
- Have a sound understanding of how technology works.
- To have developed skills which allow them to express themselves and be creative in using digital media.
- To be able to adapt their skills and understanding to apply their knowledge in an ever changing technological landscape.





What a successful coder/computer user looks like:

To be self reliant
and able to use
memory and
initiative to solve
problems.



To be able to use logical and abstract thinking to make connections and decisions.



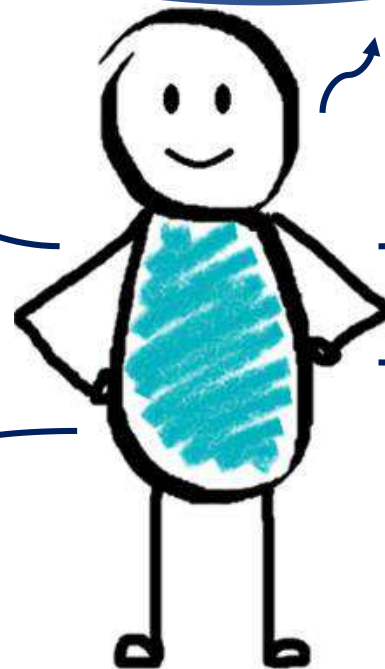
To be patient and resilient when learning to use and debug new programmes.



To have a strong understanding of e-safety, coding language and digital terminology.



To be able communicate well with others, listen to and respond to feedback in order to make progress. 





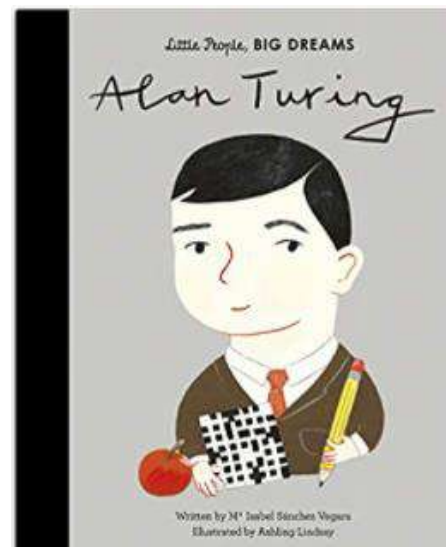
SMSC in Computing:

	<u>Spiritual development</u>	<u>Moral development:</u>	<u>Social development:</u>	<u>Cultural development</u>
Definition	Explore beliefs and experiences; respect values; discover oneself and the surrounding world; use imagination and creativity; reflect meaningfully on their own actions and the actions of others.	Recognise right and wrong; understand consequences; investigate moral and ethical issues, offer reasoned views.	Use social skills in different contexts; work well with others; resolve conflicts; understand how communities work.	Appreciate cultural influences; participate in culture opportunities; understand, accept, respect and celebrate diversity.
Examples of SMSC in Computing	Computing provides opportunities for the children to reflect and express themselves using a variety of mediums e.g. music, art, writing, presenting. We reflect on the role of computers and when/if they can perform better in certain activities than people. Children are challenged to explore and discover their attitudes to learning through opportunities to debug and improve their work.	Children are given the opportunity to consider the moral importance of the issues surrounding password protection and the importance of sharing all activity online with a grown up. We also ensure children are aware of the impact of cyberbullying and how it is important to be kind online/what to do if someone is unkind to them online.	The children are encouraged to develop their team work skills through collaborative work and research. The children also explore the concept of teams and the roles that individuals have to play. Computing can also help all students to express themselves clearly and to communicate. As children progress through their learning and become more confident using different programs and apps, they are able to become 'critical friends' to one another and give each other feedback on how to improve.	Computational thinking encourages the children to develop and explore their problem solving skills. Computing empowers the children to apply their ICT and computing skills and to gain knowledge of how programming links between subjects for instance geography, or art. Children explore how developments in technology have changed our culture, particularly the way we can communicate with and access information from anywhere in the world regardless of the language spoken there.



Equality and Diversity (including BV) in computing:

Children at The Mease are encouraged to understand the importance of digital technology including the advantages and disadvantages of having access to the diverse online world. We ensure that all students can study computing as our children are all unique and we can all bring different qualities to the computing community. At The Mease, we understand that the computing field is underrepresented by girls, BAME groups and those from low socio-economic backgrounds and we see the importance of changing this. With posters from CAS (Computing at School) in every classroom as well as our Little People, Big Dreams assemblies we recognize and understand the contributions that a range of different people from different backgrounds have made to computing as we know it today. We encourage the children to use this as 'food for thought' about the way in which they could contribute to the computing community in the future. In addition to this, our e-safety work is integral to our teachings around tolerance and respect; our children know to demonstrate these qualities in the real world as well as online.





Supporting children with SEND

To overcome potential barriers within computing, some pupils may need:

- Individualized support in the form of breaking down instructions into small steps using visuals to support the learning objective.
- Working in small, targeted groups to ensure the children are able to use the app/ program effectively.
- Appropriate differentiation is used to scaffold learners to be successful
- Opportunities to revisit prior learning at the beginning of every lesson
- Adaptations to our settings in order for the children to access the learning; these are divided into four main categories: Vision (Photo's of board and zooming in), Hearing, Learning and Physical & Motor (other ways of presenting their work e.g. video Pictures) with each having a sub section of tools. Some of the adaptations we have adopted are; larger text size, bold text, button shapes, increased contrast, reduce motion and On/Off labels, voice over control.
- Seesaw is used across the curriculum as an app to gather evidence of specific learner's specific outcomes.

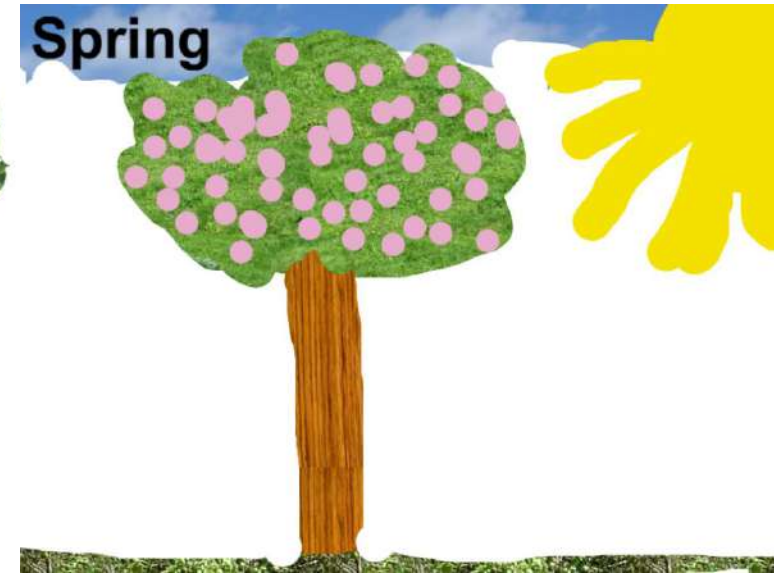
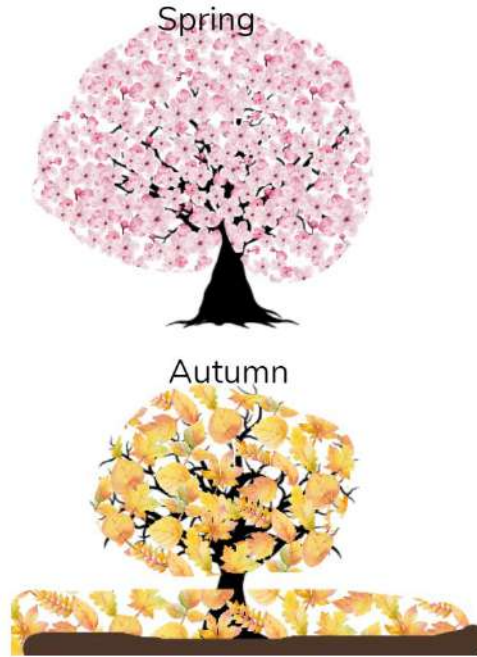
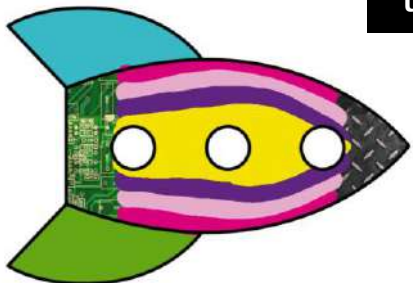


Examples of our computing curriculum

Early Years



Digitally exploring
rockets using
textures and colour



Painting using the
painting tool to explore





F



Victorian toys were fere old.

The collage features four distinct Victorian toys. At the top left is a rag doll with a cloth face and a striped dress. To its right is a wooden rattle with a handle and a circular head. Below the rag doll is a brown teddy bear. At the bottom right is a white rocking horse with a red saddle and yellow wheels.

Digital



Examples of Physical Literacy in our computing curriculum

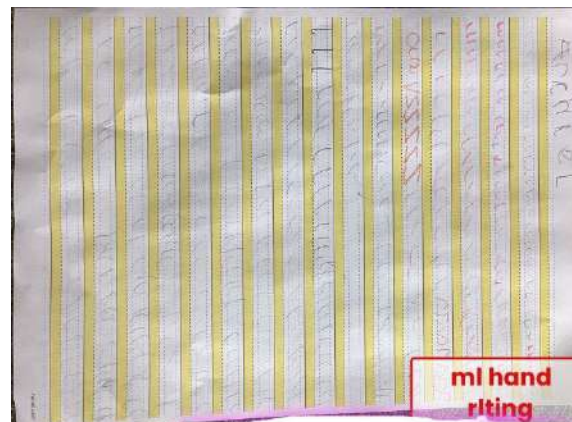
Early Years



The children photograph and upload their own work onto SeeSaw



The children are experiencing different technology to support their understanding of the world.





Examples of Physical Literacy in our computing curriculum

KS1&2



Exploring colour mixing through the use of technology



Exploring and racing with beebots



Exploring instructions for positional language to develop our

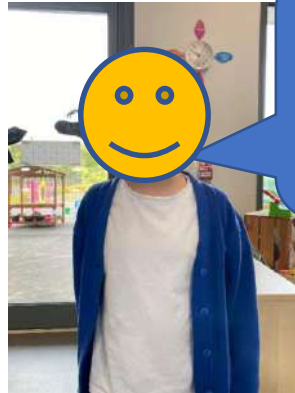




What do our pupils say?



K, Reception "I go on Ipad every time because I really like moving the characters with the buttons and the controllers"



E, Year 1 "I like writing on the computer I find the right letters and tap them in. I write stories and you get even draw pictures!"



A, Year 2 "I love prodigy because you get to do maths on the Ipad... its really hard and cool because I have to think really hard figure out the answer and get it correct!"

D, Year 1 "We made a pictogram to find out people's favourite fruit... there were lots that people liked a lot but watermelon was the most and lemons only had 3! 3 was the smallest number!"

C, Year 2 "I've been doing some learning about Florence Nightingale. You had to use the Ipad to find out who she was and then type about her in the boxes."



W "I like using SeeSaw on the Ipad I take pictures of my special work so my teachers can see!"



E, Year 2 "I like Computing because we get to do fun stuff like pointillism. We use the paint brush tool to make some art on the Ipad. I liked mine because it was really calming because it was a picture of outside."



How could I support my child at home?



If your child is interested in computing and you would like to pursue this together you could:

- Visit any Derby based STEM events- Rolls Royce hold lots so keep an eye out for those.
- Visit the 'Code Club for Children' events at any Derby based library. (Mickleover, Riverside, Alvaston and Normanton).
- <https://www.derbydaysout.co.uk/event/details/144/code-plus> Code Plus Derby Days Out

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 \(age 7-11\)](#).



Useful websites and Apps:

- <https://www.scratchjr.org/> Scratch Jr
- <https://www.barefootcomputing.org/homelearning> downloadable activities and games for children
- <https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s> Internet Safety
- <https://www.computingschool.org.uk/homelearning> Computing activities
- <http://info.thinkfun.com/stem-education/6-unplugged-coding-activities-for-hour-of-code> unplugged activities for children to learn the basics of coding and algorithms without having access to a computer.