ONE VOICE COMPUTING AT TORKINGTON PRIMARY SCHOOL

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INTENT

COMPUTING

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INTENT- COMPUTING

- At Torkington, we are aware that most pupils have access to IT at home. In fact, a lot of children are using devices on a daily basis. It is, therefore, our intent to deliver a computing curriculum that teaches our children how to be masters of technology, not slaves to it. We ensure children are taught about the power of technology and the ways in which it can be used to support and enrich both our learning and our lives. With children at our school being so familiar with technology and using it so regularly, we also ensure that our computing curriculum effectively teaches them about the importance of being safe online.

INTENT - COMPUTING

The National Curriculum for Computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

At Torkington we follow the NCCE's 'Teach Computing' scheme of work for computing from Year 1 to Year 6.

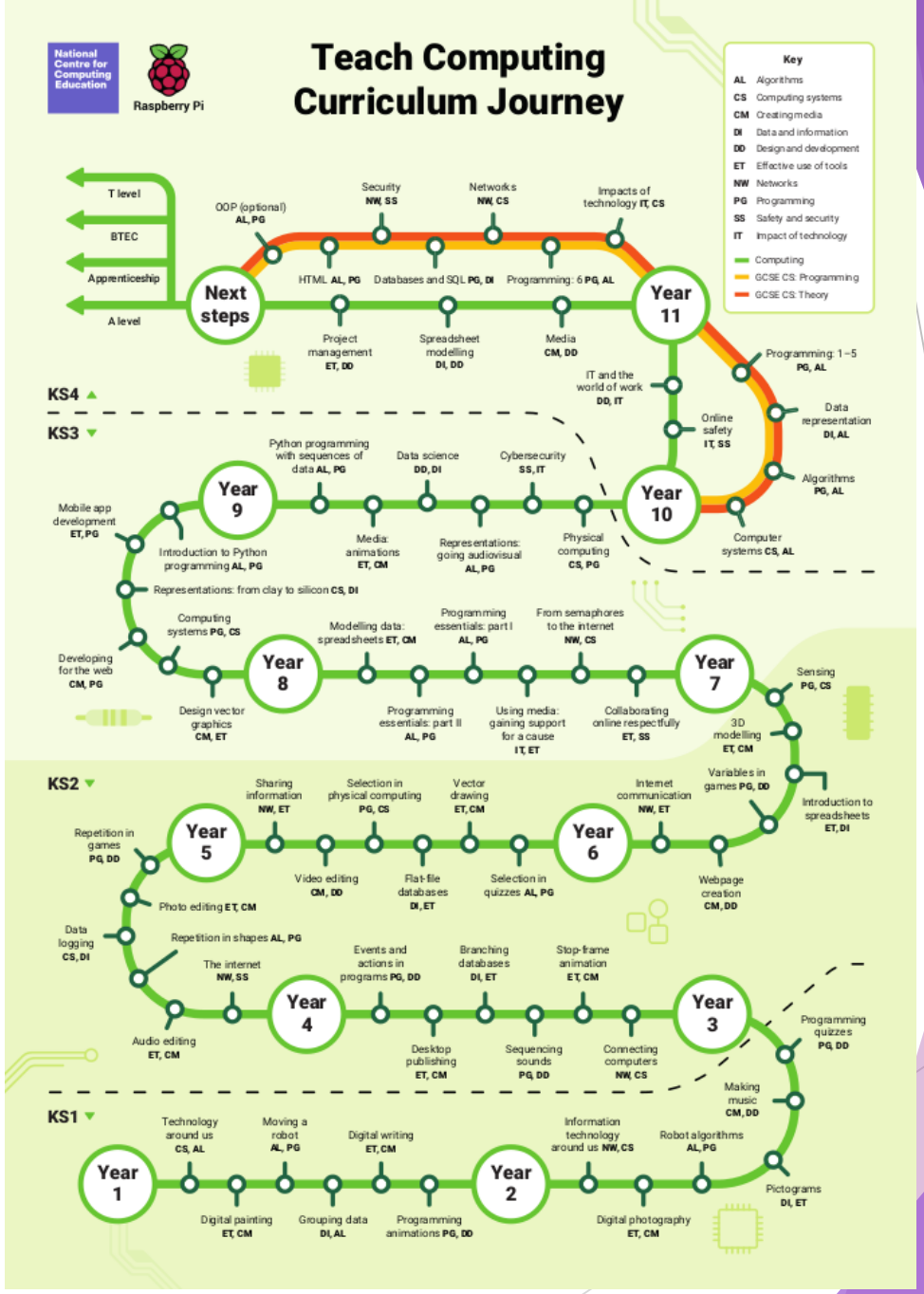
Teach Computing

National Centre for Computing Education

RaspberryPi

INTENT- COMPUTING CURRICULUM

- We follow the NCCE **Teach Computing** scheme of work which has a clear progression of skills throughout the year groups and is a spiral curriculum to ensure children revisit and build on their knowledge. Each unit taught builds on children's prior knowledge of that strand and develops their skills further.



INTENT- COMPUTING - SEND

How does the computing curriculum take account of the needs of all pupils, including your most disadvantaged and SEND pupils?

- Differentiation in computing is given through support and challenge. In each lesson plan, there is a core activity with a harder and easier option available for those children that need it. We are aware that for some children, difficulties with reading can be a barrier to learning in computing. To overcome this, we use mixed ability pairings where necessary to support less able readers.
- We also use IT to support SEND pupils where necessary in other subjects. We are aware that there are some children who struggle with reading and/or writing, but when allowed to use a Chromebook are able to be more successful in completing the outcomes for some of their lessons.

IMPLEMENTATION

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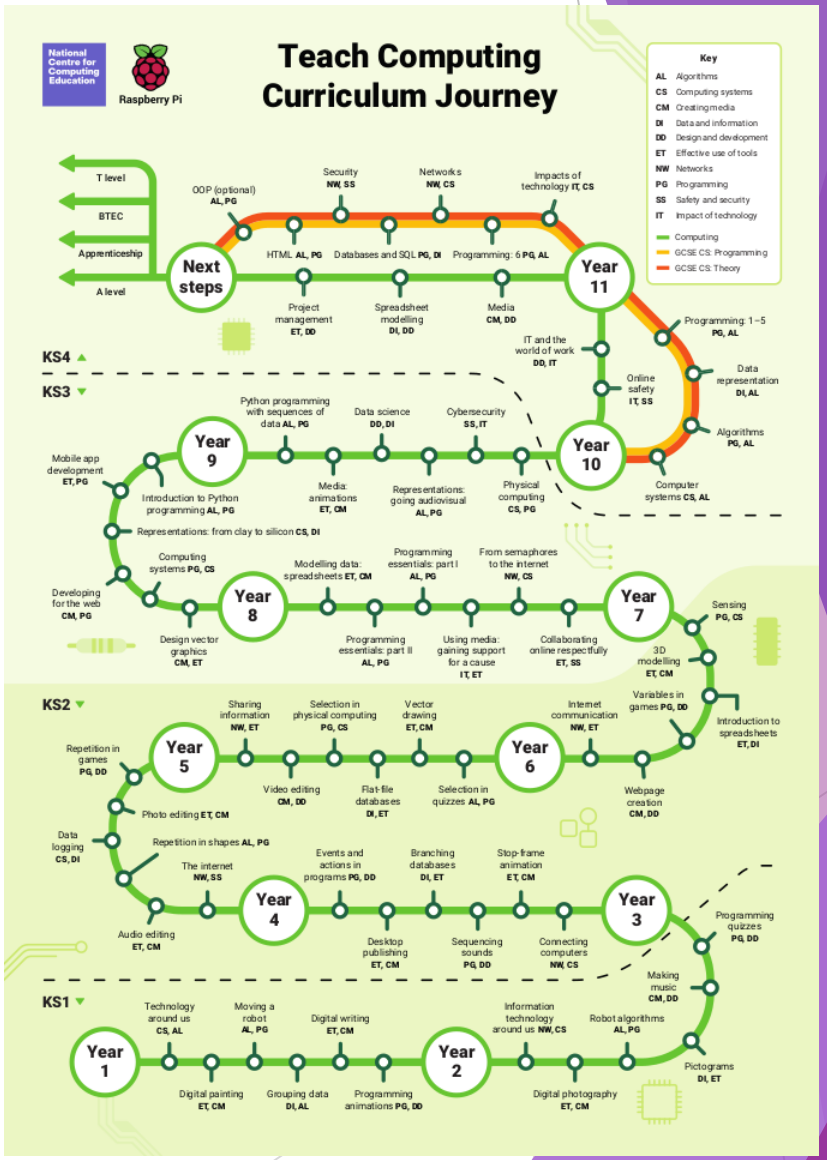
Spiral curriculum

The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It also ensures that connections are made even if different teachers are teaching the units within a theme in consecutive years.

The lessons taught through this scheme cover all three strands of the computing curriculum (computer science, information technology and digital literacy) to ensure that children have a broad and deep understanding of computing as they progress to secondary school.



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Whole School Computing Progression

This whole school progression allows for the children to build a solid foundation of skills that is then development and enhanced as they move through each key stage.

The lessons taught through this scheme cover all three strands of the computing curriculum (computer science, information technology and digital literacy) to ensure that children have a broad and deep understanding of computing as they progress to secondary school.

Torkington Computing Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	**Screen:** -Active Inspire, e.g. children are to draw and label a picture of themselves. -Twinkl Maths Games / Counting Games. **iPads:** -Doodle Buddy. -Bee Bot game. **Computer:** -Phonics Games. -Active Inspire. **Bee Bots:** -Children are to direct the Bee Bots along the path to Granny's House.	**Screen:** -Active Inspire, e.g. children are to design their own Christmas Tree. -Twinkl Maths Games / Super Pairs 2D Shape Games. **iPads:** -Doodle Buddy. -Bee Bot game. **Computer:** -Phonics Games. -Active Inspire. **Bee Bots:** -Children are to direct the Bee Bots through the story of Stick Man. Can they order the events and go to them correctly? Enrichment: E-Safety Audit	**Screen:** -Active Inspire, e.g. children are to draw a Gruffalo Scene and label it. Can they write a caption? -Twinkl Maths Games / Number Bonds to 5 matching game. **iPads:** -Doodle Buddy. -Bee Bot game. **Computer:** -Phonics Games. -Active Inspire. **Bee Bots:** -Children are to move the Doctor Bee Bots to help the different objects. Enrichment: Safer Internet Day	**Screen:** -Active Inspire, e.g. children are to design their own pancake and label the toppings. -Twinkl Maths Games / Number Bonds to 10 matching game. **iPads:** -Doodle Buddy. -Bee Bot game. **Computer:** -Phonics Games. -Active Inspire. **Bee Bots:** -Children are to programme the Bee Bots to visit the different planets.	**Screen:** -Active Inspire, e.g. children are to draw a farm scene and label it. -Twinkl Maths Games / Addition Game. **iPads:** -Doodle Buddy. -Bee Bot game. **Computer:** -Phonics Games. -Active Inspire. **Bee Bots:** -Children are to move the Bee Bot through the story of 'What the Ladybird Heard'.	**Screen:** -Active Inspire, e.g. children are to draw an under the sea setting and label it. -Twinkl Maths Games / Counting to 20 Game. **iPads:** -Doodle Buddy. -Bee Bot game. **Computer:** -Phonics Games. -Active Inspire. **Bee Bots:** -Children are to programme the Bee Bot to collect the treasure dotted around the carpet.
Year 1	**Computing systems and networks – Technology around us** To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type on a computer	**Creating media – Digital painting** To describe what different freehand tools do To use the shape tool and the line tools To make careful choices when painting a digital picture To explain why I chose the tools I used	**Creating media – Digital writing** To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer To make careful choices when changing text	**Grouping data** To label objects To identify that objects can be counted To describe objects in different ways To count objects with the same properties To compare groups of objects	**Programming A** To explain what a given command will do To act out a given word To combine 'forwards' and 'backwards' commands to make a sequence To combine four direction commands to make sequences To plan a simple program	**Programming B – Introduction to animation** To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions
	To use the keyboard to edit text To create rules for using technology responsibly	To use a computer on my own to paint a picture To compare painting a picture on a computer and on paper Enrichment: E-Safety Audit	To explain why I used the tools that I chose To compare typing on a computer to writing on paper Enrichment: Safer Internet Day	To answer questions about groups of objects	To find more than one solution to a problem	To design the parts of a project To use my algorithm to create a program
Year 2	**Computing systems and networks- IT around Us** • To recognise the uses and features of information technology. • To identify the uses of information technology in the school. • To identify information technology beyond school. • To explain how information technology helps us. • To explain how to use information	**Creating media- Digital Photography** • To use a digital device to take a photograph. • To make choices when taking a photograph. • To describe what makes a good photograph. • To decide how photographs can be improved. • To use tools to change an image. • To recognise that photos can be changed. Enrichment: E-Safety Audit	**Data and information- Pictograms** • To recognise that we can count and compare objects using tally charts. • To recognise that objects can be represented as pictures. • To create a pictogram. • To select objects by attribute and make comparisons. • To recognise that people can be described by attributes. • To explain that we can present information using a computer. Enrichment: Safer Internet Day	**Creating media- Making Music** • To say how music can make us feel. • To identify that there are patterns in music. • To experiment with sound using a computer. • To use a computer to create a musical pattern. • To create music for a purpose. • To review and refine our computer work.	**Programming A- Robot Algorithms** • To describe a series of instructions as a sequence. • To explain what happens when we change the order of instructions. • To use logical reasoning to predict the outcome of a program. • To explain that programming projects can have code and artwork. • To design an algorithm. • To create and debug a program	**Programming B- An Introduction to Quizzes** • To explain that a sequence of commands has a start. • To explain that a sequence of commands has an outcome. • To create a program using a given design. • To change a given design. • To create a program using my own design. • To decide how my project can be improved.

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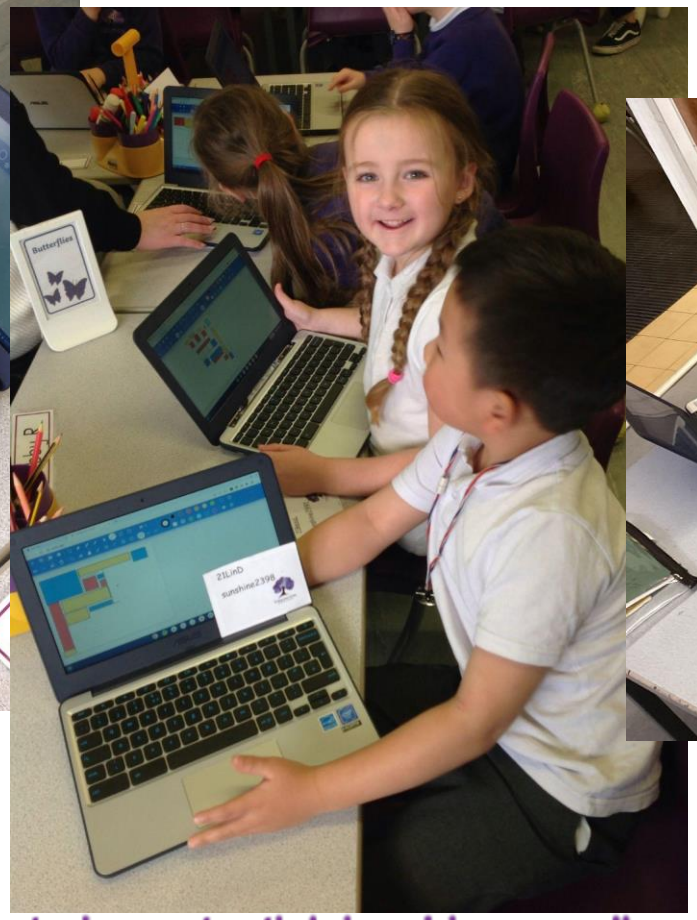
- From the Teach Computing scheme that we follow, there is an overview of the knowledge and skills that children will learn in each computing unit of work, and these build on prior knowledge from the previous year.
- At the beginning of each unit, children are given time to discuss what they already know about the topic for the unit and feed this back to the teacher. At the end of each unit, children either complete an assessment test or the teacher completes their teacher assessment judgment. The results of these are shared with the children to enable them to reflect on the new things that they have learnt through the unit. These allow teachers to see the progress pupils have made and identify any gaps in knowledge.

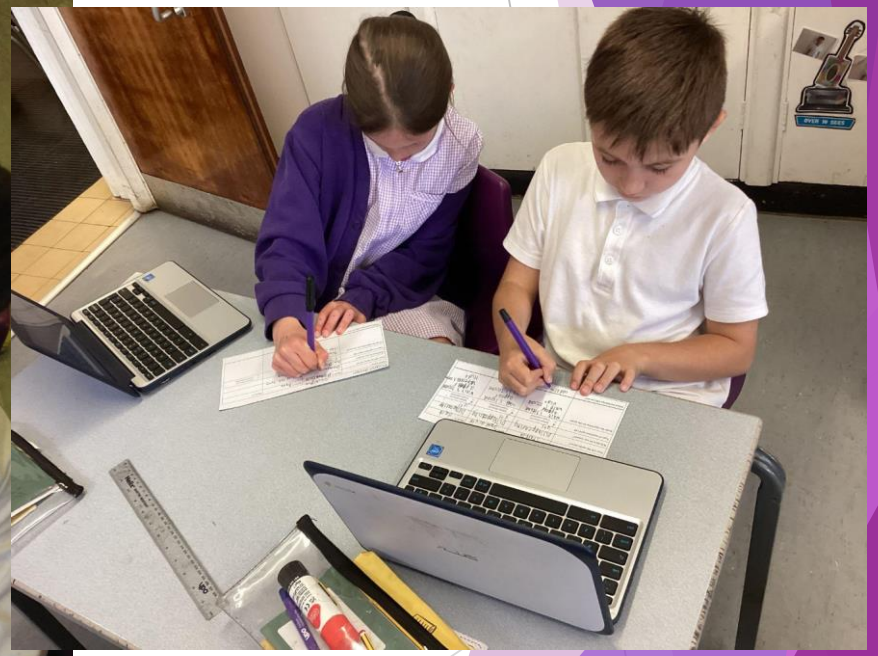
Resources

- We have a class set of ChromeBooks and two class sets of iPads which are utilised in computing lessons and in other areas of the curriculum as well. The Teach Computing scheme of work has a list of apps and programs which are referred to and used within the planning, and these are all accessible on either the ChromeBooks or iPads as appropriate. In KS2, the ChromeBooks are more regularly used for computing lessons than the iPads, whereas in KS1, it is sometimes more appropriate to use the iPads. However, children in Year 1 and 2 still regularly use the ChromeBooks and are increasingly more confident in using them as they near the end of KS1. Where available, TAs are used to support the children during computing lessons and intervene with any difficulties or issues the children come across.

IMPLEMENTATION- COMPUTING

Resources





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Computing across the curriculum

- Children are offered opportunities within the curriculum to use their IT skills in other lessons. For example they might create a presentation about a topic they are learning, or make a spreadsheet when learning statistics or use animation or programming software for D&T.

Research and Reading in Computing

- Many of the Teach Computing units of work involve elements of researching, particularly those units that hit the digital literacy and information technology strands. During these units, children are required to use a web browser and search engine in the ways that they have been taught to research and locate information they need to help them with their learning of a certain topic. Children are encouraged to also use these researching skills at home, particularly when completing their History or Geography home learning projects. They often demonstrate their learning and present their findings through creating presentations which they can then share with their class.

IMPLEMENTATION- COMPUTING

How is Computing assessed?

EYFS - explore pupil voice and record their skills, knowledge and reflections using their floor books. These are linked to the areas of development.

KS1 - The children self assess their learning against the success criteria at the end of each lesson and teachers give a teacher judgment which is stored on a spreadsheet for the unit. At the end of each unit of work, the teacher will give an overall judgment of whether each child is emerging, meeting or exceeding year group expectations.

KS2 - The children self assess their learning against the success criteria at the end of each lesson and teachers give a teacher judgment which is stored on a spreadsheet for the unit. At the end of each unit, children will either complete a summative assessment test which will be marked and used to inform the teacher's overall assessment, or will produce a final piece of project work which the unit has been leading up to and the teacher will make an overall assessment judgment based on this work (emerging, meeting or exceeding expectations).

Year 3 Autumn 2 - Stop Frame Animation							
	Lesson						
	1	2	3	4	5	6	Assessment
	To explain that animation is a sequence of drawings or photographs	To relate animated movement with a sequence of images	To plan an animation	To identify the need to work consistently and carefully	To review and improve an animation	To evaluate the impact of adding other media to an animation	Project Rubric - Animation
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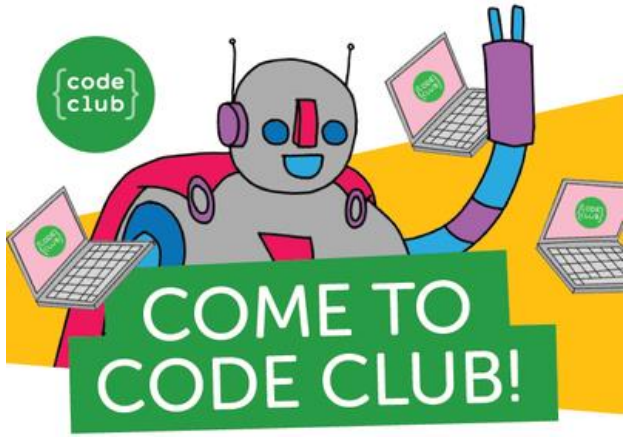
EXTRA CURRICULAR OPPORTUNITIES

- Children in Years 4, 5 & 6 are offered Code Club as an after school club on Tuesdays and children in Years Reception, 1 & 2 are offered Mini Coding Club. This is an opportunity for those children with a particular interest in Computing and programming to delve deeper into the world of coding and use their skills to create exciting games and computer programs.

- Each year we celebrate Safer Internet Day and children are immersed in a range of activities related to e-safety.



IMPACT

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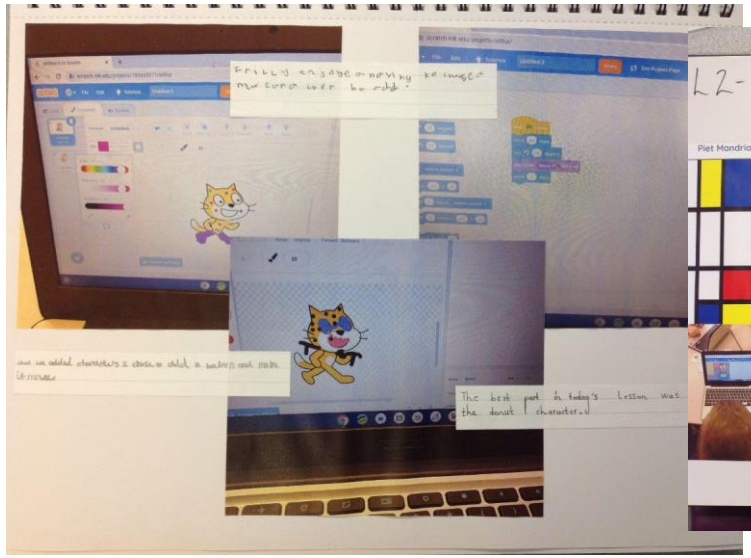
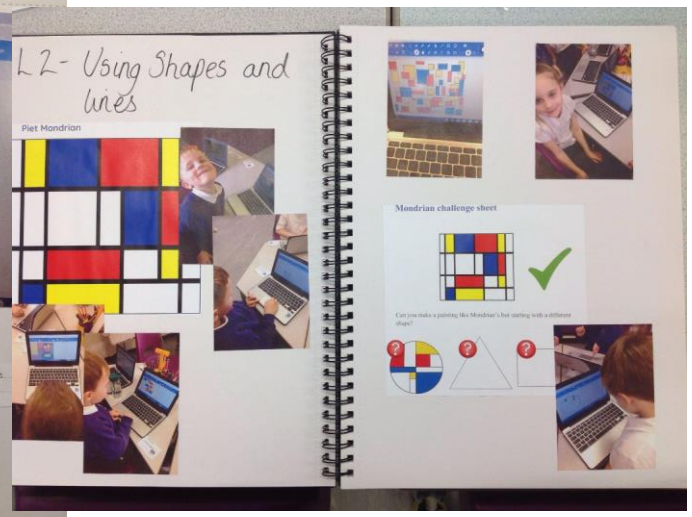
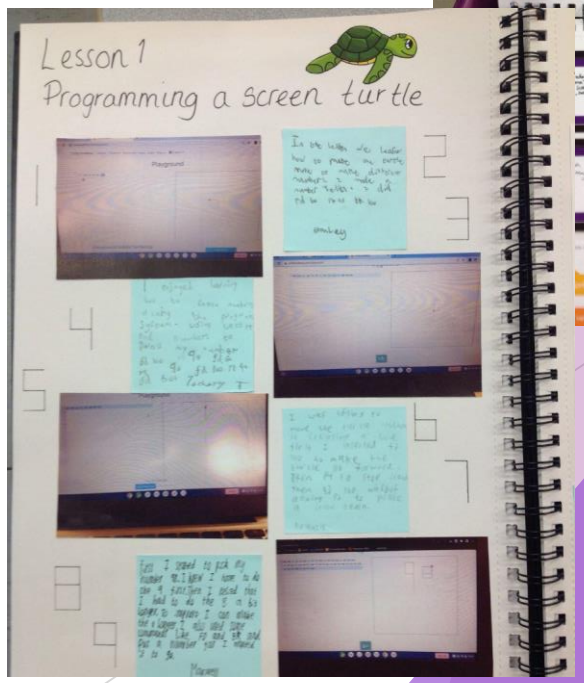
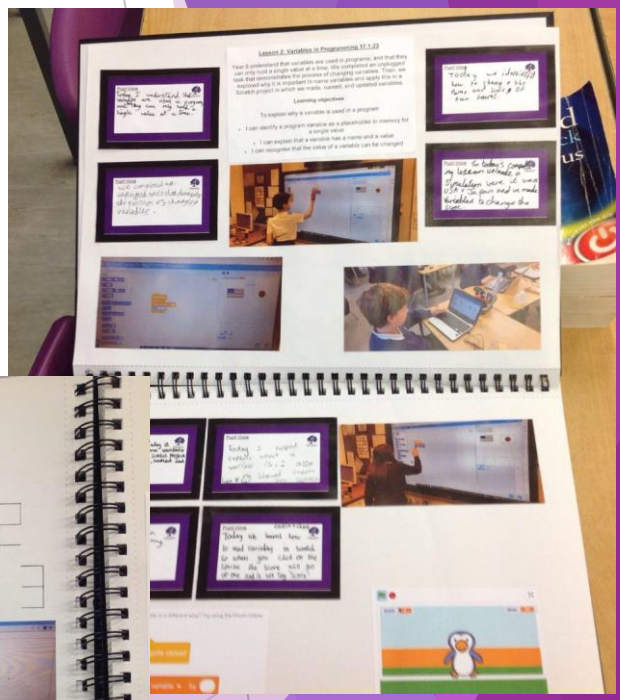
IMPACT

- Computing learning is recorded in many different ways depending on the activities taking place during the lesson (videos, audio recordings, online coding programs, quizzes, worksheets, physical activities etc), but all of this work is collated in a whole class Computing floor book. Each lesson, examples of a range of pupil work (this could be worksheets, screen shots, printed word documents, presentations, spreadsheets etc) and pupil voice will be stuck into the floor book to demonstrate and celebrate the children's learning.





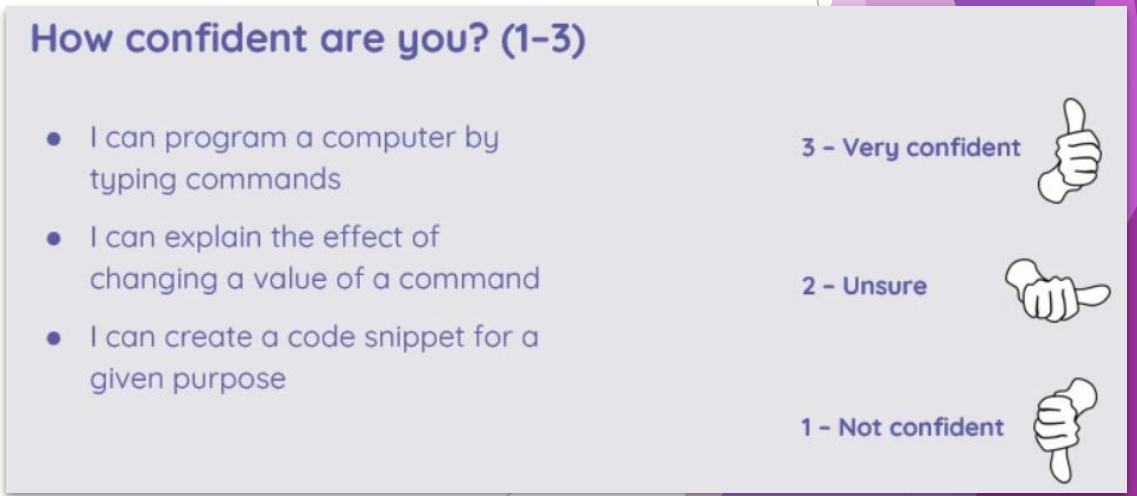




IMPACT

- Teachers assess children's knowledge, understanding and skills in Computing by making observations of the children working during lessons. Each session has key success criteria which are shared with the children at the beginning of the lesson and revisited at the end so children can self-assess their work. Feedback given to children by their peers or teachers is in many different formats, again depending on the type of activity completed. For example verbal feedback during the lesson, notes written on top of code in Scratch, automatic feedback on Google Forms quizzes, comments on work uploaded to Google Classroom or Class Dojo portfolios.

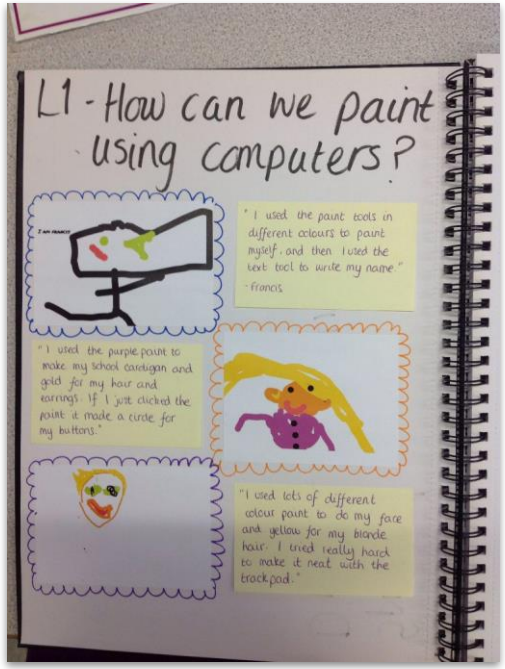
- After each unit of work, the overall assessment judgments and spreadsheets are completed by class teachers, showing children's attainment. After these have been updated, the Computing leader analyses the data and provides feedback in order to inform and improve future practice.

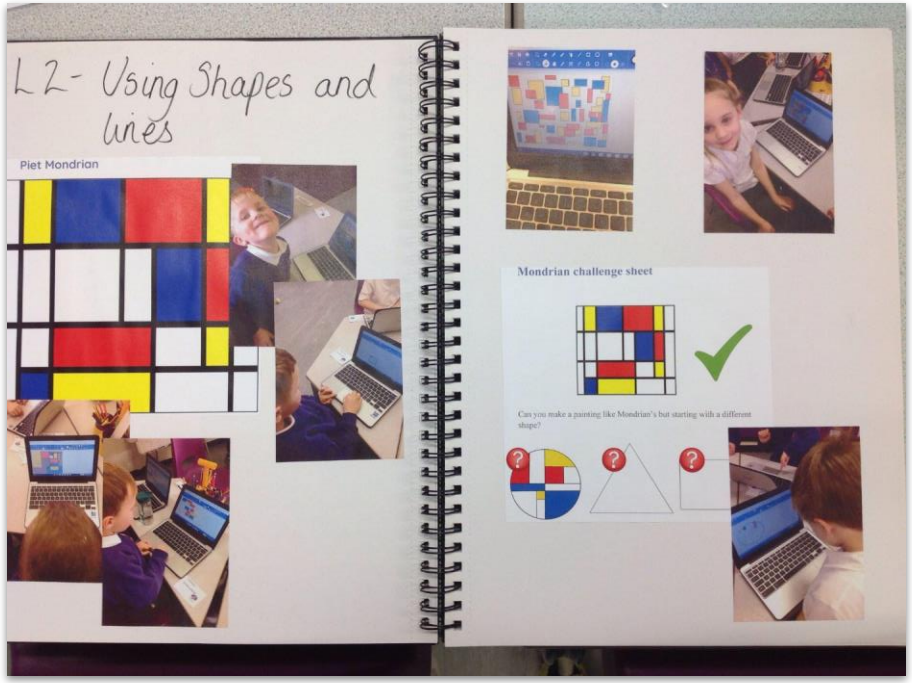


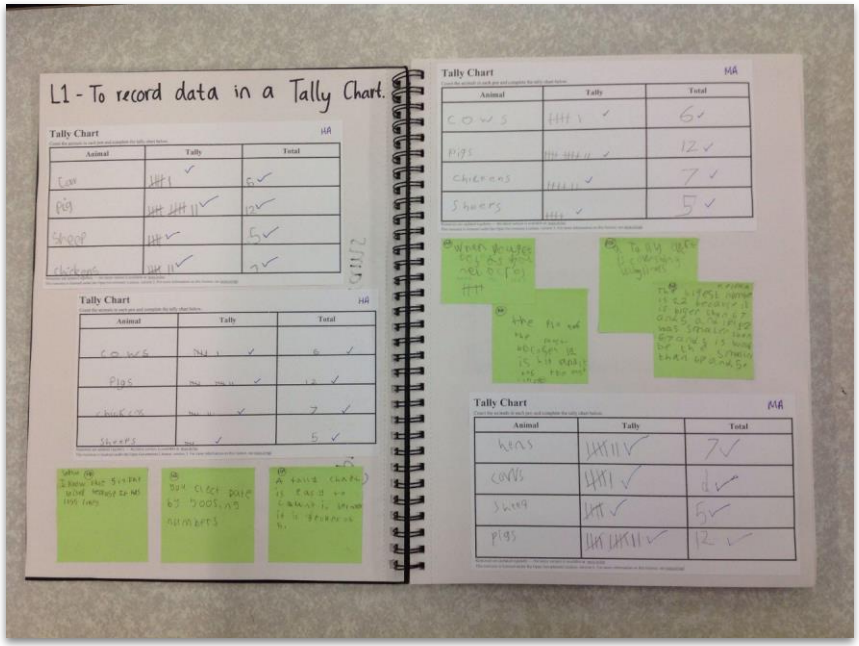
IMPACT – PUPIL VOICE/BOOK LOOK

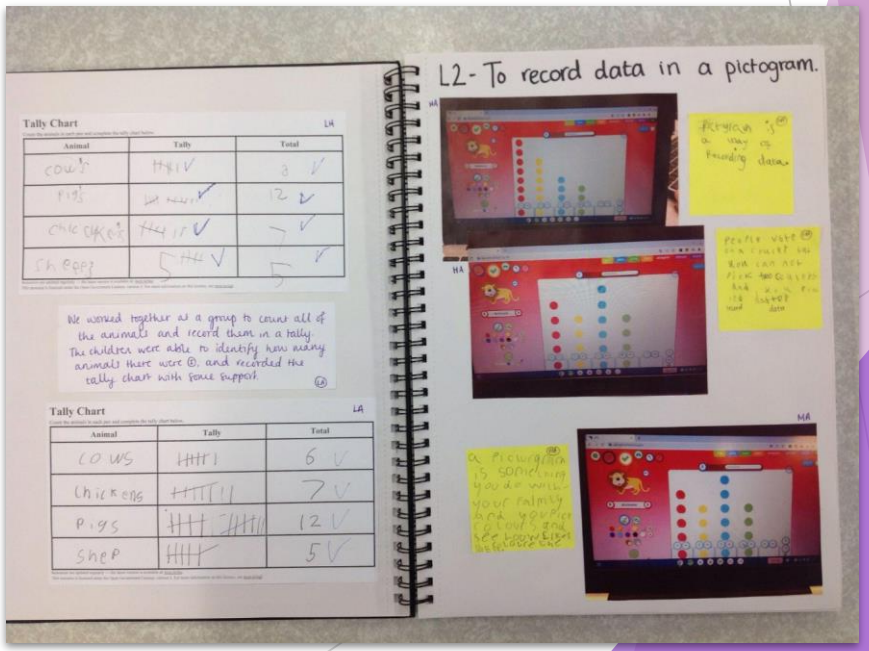
- At the end of each term, the content and quality of our Computing lessons are monitored.
- Children's work and pupil voice in the whole class Computing floorbooks is reviewed by the subject leader and further pupil voice is gathered to assess children's progression in and enjoyment of Computing.
- This allows the children to express their views on the Computing knowledge and skills they have developed, as well as gauging enjoyment levels. This information is then assessed by the subject leader to influence future planning.
- See next slide for feedback and floor book examples of learning.

KS1

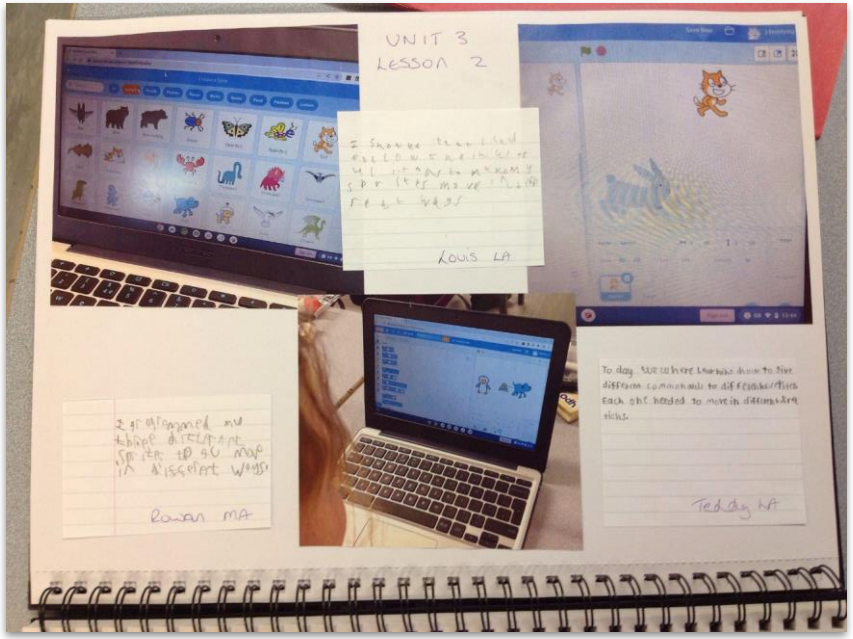

L1 - How can we paint using computers?
"I used the paint tools in different colours to paint myself, and then I used the text tool to write my name." - Francis
"I used the purple paint to make my school cardigan and gold for my hair and earrings. If I just clicked the paint it made a circle for my buttons."
"I used lots of different colour paint to do my face and yellow for my blonde hair. I tried really hard to make it neat with the trackpad."


L2 - Using Shapes and lines
Piet Mondrian
Mondrian challenge sheet
Can you make a painting like Mondrian's but starting with a different shape?

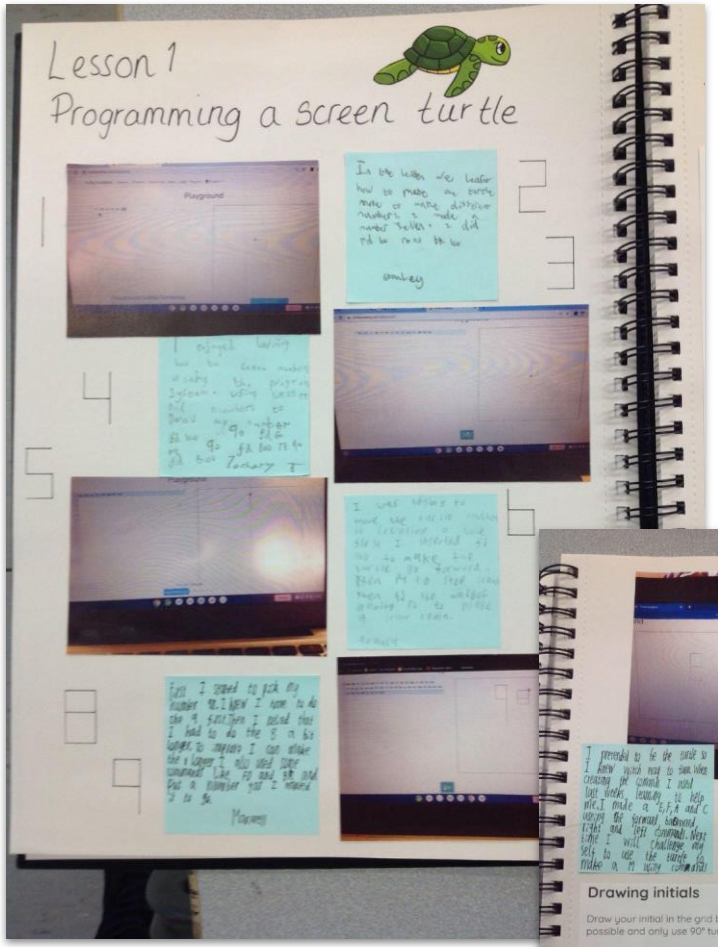

L1 - To record data in a Tally Chart.
Tally Chart
Animal
Tally
Total

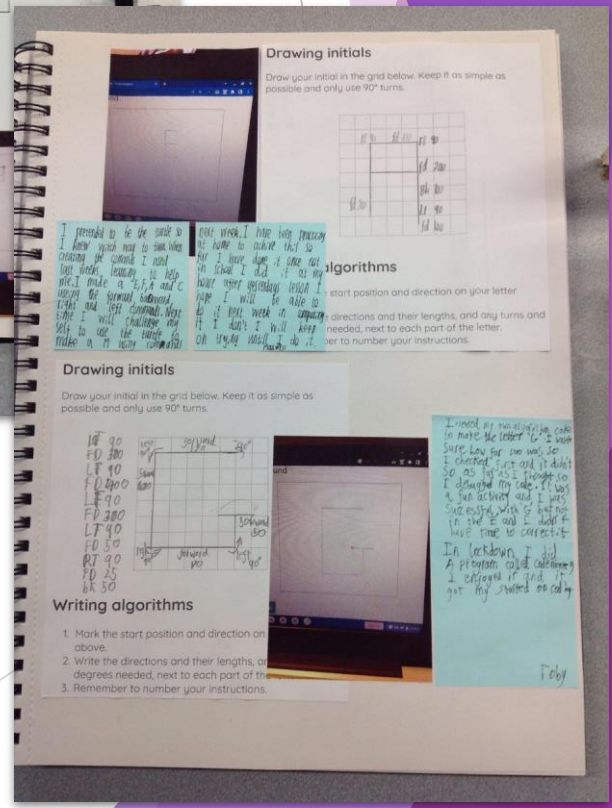

L2 - To record data in a pictogram.
Tally Chart
We worked together as a group to count all of the animals and record them in a tally. The children were able to identify how many animals there were (6), and recorded the tally chart with some support.

LKS2

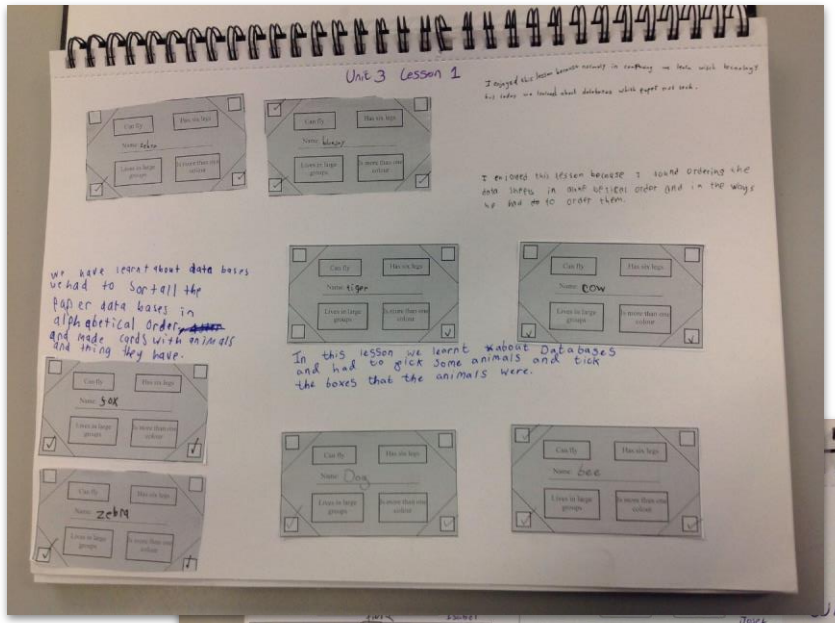

UNIT 3
LESSON 2
Louis LA
Rowan MA
Teddy MA

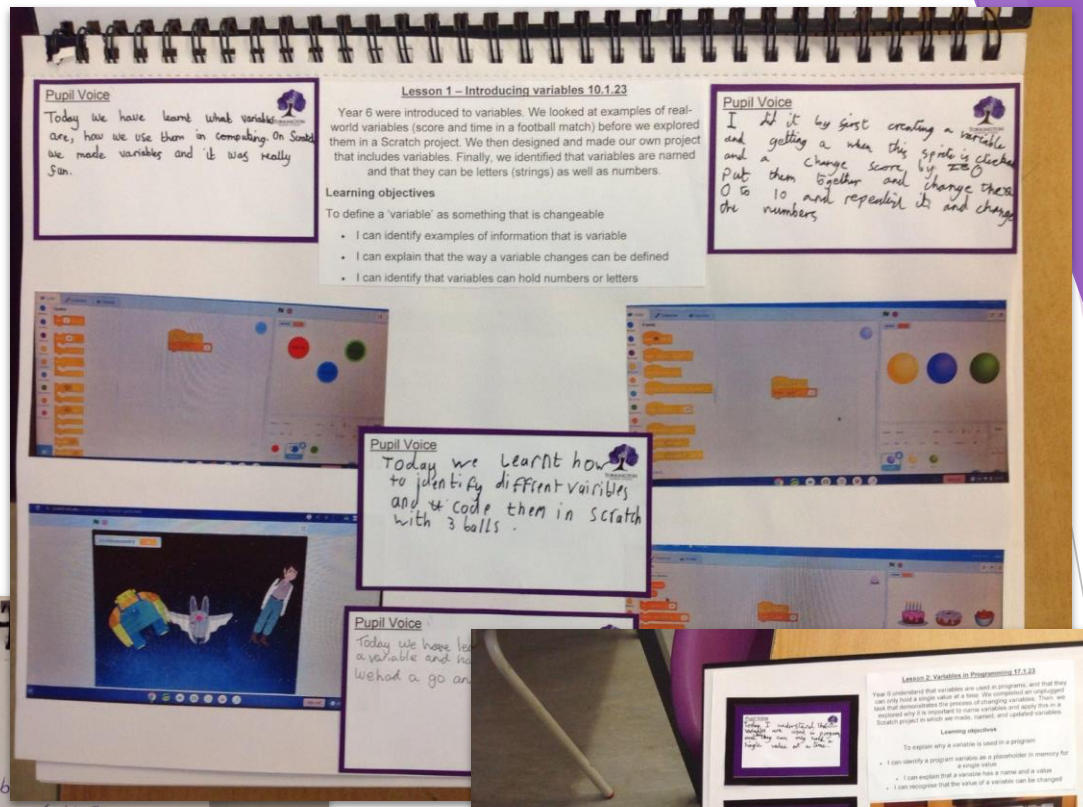
This best part in today's lesson was adding the donut character.

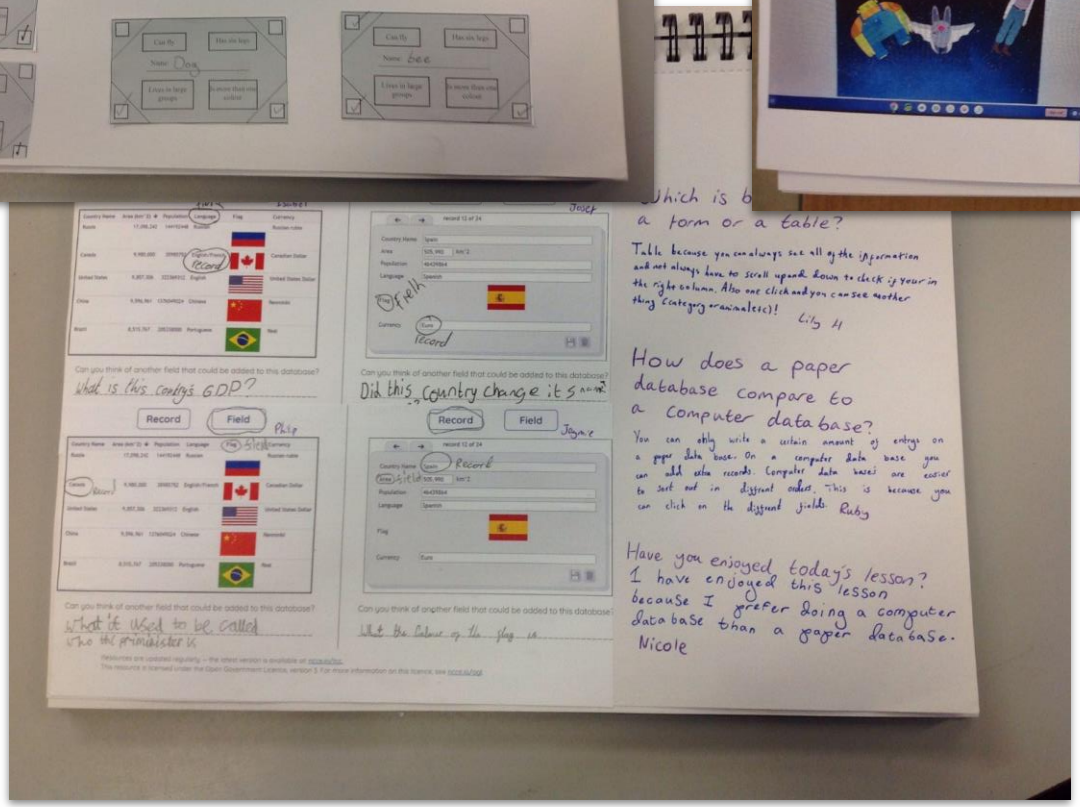

Lesson 1
Programming a screen turtle

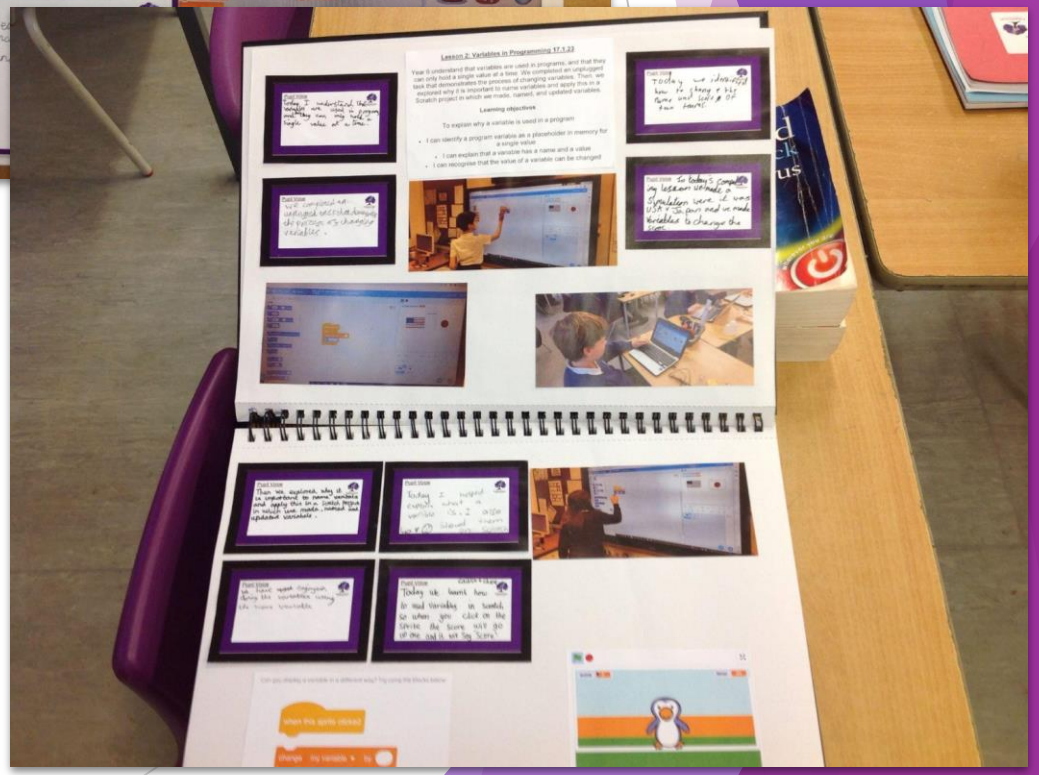

Drawing initials
Writing algorithms
Drawing initials
Writing algorithms

UKS2


Unit 3 Lesson 1
we have learnt about data bases we had to sort all the paper data bases in alphabetical order and made cards with animals and thing they have.
In this lesson we learnt about Databases and had to pick some animals and tick the boxes that the animals were.


Pupil Voice
Today we have learnt what variables are, how we use them in computing. On Scratch we made variables and it was really fun.
Lesson 1 – Introducing variables 10.1.23
Year 6 were introduced to variables. We looked at examples of real-world variables (score and time in a football match) before we explored them in a Scratch project. We then designed and made our own project that includes variables. Finally, we identified that variables are named and that they can be letters (strings) as well as numbers.
Learning objectives
To define a 'variable' as something that is changeable
I can identify examples of information that is variable
I can explain that the way a variable changes can be defined
I can identify that variables can hold numbers or letters
Pupil Voice
Today we learnt how to identify diffrent vairibles and to code them in scratch with 3 balls.
Pupil Voice


Record
Field
What is this country's GDP?
Did this country change its name?
How does a paper database compare to a computer database?
You can only write a certain amount of entrys on a paper data base. On a computer data base you can add extra records. Computer data bases are easier to sort out in diffrent orders. This is because you can click on the diffrent fields. Ruby
Have you enjoyed today's lesson?
I have enjoyed this lesson because I prefer doing a computer database than a paper database.
Nicole


Lesson 2: Variables in Programming 17.1.23

NEXT STEPS:

- To include more teaching of physical computing - loan Micro:Bits and Crumble Controllers from local Computing Hub to support with this
- To include more extra curricular opportunities linked to computing - workshops etc.
- To further develop and embed the teaching of e-safety using Project Evolve resources
- To include more opportunities across the curriculum for children to use and apply their Computing skills in other lessons - looking specifically at MS Office skills
- To continue to develop the ways in which we evidence the vast range of Computing work which the children complete - subject leader to review floor books after each unit of work