

# Computing at Kingsmoor Academy

At Kingsmoor Academy, Computing is taught weekly. The core focus for every Computing lesson is to teach the children to use computational thinking and creativity to understand and change the world. At Kingsmoor Academy, we thrive to ensure that our teaching of Computing has deep links with mathematics, science, and design and technology. As part of their Computing learning, children are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. In addition, children at Kingsmoor are taught how to become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology .

As a school we follow the Rising Star scheme of work for Computing, children are introduced to a new computing unit of work each half term focussing on developing their knowledge and understanding one of the main strands of the Computing curriculum. For example:

- **Programming** – planning, writing and testing computer programs for digital devices, from floor turtles to tablets.
- **Computational thinking** – some of the computer science foundations – algorithms, logical reasoning and decomposing problems into smaller parts.
- **Creativity** – creating and refining original content using digital tools across a range of media.
- Computer networks – using and understanding the internet, the web and search engines effectively and safely.
- **Communication and Collaboration** – making the most of computers and the internet for communicating with one of many, and working together on projects.
- **Productivity** – collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.

Kingsmoor Academy Computing Overview 2018-2019						
Key Stage One						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<b>PROGRAMMING</b>	<b>COMPUTATIONAL THINKING</b>	<b>CREATIVITY</b>	<b>COMPUTER NETWORKS</b>	<b>COMMUNICATION/ COLLABORATION</b>	<b>PRODUCTIVITY</b>
Year 1 Ghana	<u>Unit 1.1 We are treasure hunters</u> Planning, writing and testing computer programs for digital devices, from floor turtles to tablets.	<u>Unit 1.2 We are TV chefs</u> Some of the computer science foundations – algorithms, logical reasoning and decomposing problems into smaller parts.	<u>Unit 1.3 We are painters</u> Creating and refining original content using digital tools across a range of media.	<u>Unit 1.4 We are collectors</u> Using and understanding the internet, the web and search engines, effectively and safely.	<u>Unit 1.5 We are storytellers</u> Making the most of computers and the internet for communicating with one of many, and working together on projects.	<u>Unit 1.6 We are celebrating</u> Collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.
Year 1 Italy	<u>Unit 1.1 We are treasure hunters</u> Planning, writing and testing computer programs for digital devices, from floor turtles to tablets.	<u>Unit 1.2 We are TV chefs</u> Some of the computer science foundations – algorithms, logical reasoning and decomposing problems into smaller parts.	<u>Unit 1.3 We are painters</u> Creating and refining original content using digital tools across a range of media.	<u>Unit 1.4 We are collectors</u> Using and understanding the internet, the web and search engines, effectively and safely.	<u>Unit 1.5 We are storytellers</u> Making the most of computers and the internet for communicating with one of many, and working together on projects.	<u>Unit 1.6 We are celebrating</u> Collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.
Year 2 Egypt	<u>Unit 2.1 We are astronauts</u> Planning, writing and testing computer programs for digital devices, from floor turtles to tablets.	<u>Unit 2.2 We are gamers/ testers</u> Some of the computer science foundations – algorithms, logical reasoning and decomposing problems into smaller parts.	<u>Unit 2.3 We are photographers</u> Creating and refining original content using digital tools across a range of media.	<u>Unit 2.4 We are researchers</u> Using and understanding the internet, the web and search engines, effectively and safely.	<u>Unit 2.5 We are detectives</u> Making the most of computers and the internet for communicating with one of many, and working together on projects.	<u>Unit 2.6 We are zoologists</u> Collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.
Year 2 Poland	<u>Unit 2.1 We are astronauts</u> Planning, writing and testing computer programs for digital devices, from floor turtles to tablets.	<u>Unit 2.2 We are gamers/ testers</u> Some of the computer science foundations – algorithms, logical reasoning and decomposing problems into smaller parts.	<u>Unit 2.3 We are photographers</u> Creating and refining original content using digital tools across a range of media.	<u>Unit 2.4 We are researchers</u> Using and understanding the internet, the web and search engines, effectively and safely.	<u>Unit 2.5 We are detectives</u> Making the most of computers and the internet for communicating with one of many, and working together on projects.	<u>Unit 2.6 We are zoologists</u> Collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.

Key Stage Two						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	PROGRAMMING	COMPUTATIONAL THINKING	CREATIVITY	COMPUTER NETWORKS	COMMUNICATION/ COLLABORATION	PRODUCTIVITY
Year 3 India	<b>Unit 3.1 We are programmers</b> Planning, writing and testing computer programs for digital devices, from floor turtles to tablets.	<b>Unit 3.2 We are bug fixers</b> Some of the computer science foundations – algorithms, logical reasoning and decomposing problems into smaller parts.	<b>Unit 3.3 We are presenters</b> Creating and refining original content using digital tools across a range of media.	<b>Unit 3.4 We are network engineers</b> Using and understanding the internet, the web and search engines, effectively and safely.	<b>Unit 3.5 We are communicators</b> Making the most of computers and the internet for communicating with one of many, and working together on projects.	<b>Unit 3.6 We are opinion pollsters</b> Collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.
Year 4 China	<b>Unit 4.1 We are software developers</b> Planning, writing and testing computer programs for digital devices, from floor turtles to tablets.	<b>Unit 4.2 We are toy designers</b> Some of the computer science foundations – algorithms, logical reasoning and decomposing problems into smaller parts.	<b>Unit 4.3 We are musicians</b> Creating and refining original content using digital tools across a range of media.	<b>Unit 4.4 We are html editors</b> Using and understanding the internet, the web and search engines, effectively and safely.	<b>Unit 4.5 We are co-authors</b> Making the most of computers and the internet for communicating with one of many, and working together on projects.	<b>Unit 4.6 We are meteorologists</b> Collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.
Year 5 Japan	<b>Unit 5.1 We are game developers</b> Planning, writing and testing computer programs for digital devices, from floor turtles to tablets.	<b>Unit 5.2 We are cryptographers</b> Some of the computer science foundations – algorithms, logical reasoning and decomposing problems into smaller parts.	<b>Unit 5.3 We are artists</b> Creating and refining original content using digital tools across a range of media.	<b>Unit 5.4 We are web developers</b> Using and understanding the internet, the web and search engines, effectively and safely.	<b>Unit 5.5 We are bloggers</b> Making the most of computers and the internet for communicating with one of many, and working together on projects.	<b>Unit 5.6 We are architects</b> Collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.
Year 6 Australia	<b>Unit 6.1 We are mobile app developers</b> Planning, writing and testing computer programs for digital devices, from floor turtles to tablets.	<b>Unit 6.2 We are project managers</b> Some of the computer science foundations – algorithms, logical reasoning and decomposing problems into smaller parts.	<b>Unit 6.3 We are marketers</b> Creating and refining original content using digital tools across a range of media.	<b>Unit 6.4 We are app planners</b> Using and understanding the internet, the web and search engines, effectively and safely.	<b>Unit 6.5 We are interface designers</b> Making the most of computers and the internet for communicating with one of many, and working together on projects.	<b>Unit 6.6 We are market researchers</b> Collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.

As a school we have developed Computing portfolios to evidence the teaching of Computing throughout each academic year; evidence is compiled to show the content of Computing lessons, as well as any outcomes from units of work.

## Kingsmoor Academy Computing Portfolio

Year group: 2 Poland

**Kingsmoor Expectations:**

- Always present your work to the highest standard
- All work to be dated
- Be creative and active in your learning!

### Computing portfolio

The purpose of the Computing portfolio is to evidence the teaching of Computing within Kingsmoor.

There is an expectation that there needs to be at least 3 pieces of evidence for each Computing topic.

This evidence can include:

- Photos of the lesson (which can be taken on your class iPads) with a short description of what the children were learning (KS1) or speech bubble sound-bites written by the children.
- Evidence of the work carried out in lessons (if worksheets were used)
- Evidence of work carried out on computers and saved on the server.


Please include dates for evidence that you include.

National Curriculum objectives are included in the Computing Portfolios to ensure the coverage and teaching of relevant computing skills. These are colour coded to show the unit of work in which the skill is taught. Teachers highlight these at the end of each unit of work to show which skills have been taught and understood.

Year 5 Computing objectives					
Unit 5.1 - We are game developers	Unit 5.2 - We are cryptographers	Unit 5.3 - We are artists	Unit 5.4 - We are web developers	Unit 5.5 - We are bloggers	Unit 5.6 - We are architects
National Curriculum reference	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts				
Rising Stars Unit of study	<input type="checkbox"/> Create original artwork and sound for a game				
National Curriculum reference	Use sequence, selection, and repetition in programs; work with variables and various forms of input and output				
Rising Stars Unit of study	<input type="checkbox"/> Design and create a computer program for a computer game, which uses sequence, selection, repetition and variables <input type="checkbox"/> Develop an appreciation of the links between geometry and art <input type="checkbox"/> Become familiar with the tools and techniques of a vector graphics package <input type="checkbox"/> Develop an understanding of turtle graphics				
National Curriculum reference	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs				
Rising Stars Unit of study	<input type="checkbox"/> Detect and correct errors in their computer game <input type="checkbox"/> Be familiar with semaphore Morse code <input type="checkbox"/> Experiment with the tools available, refining and developing their work as they apply their own criteria to evaluate it and receive feedback from their peers				
National Curriculum reference	Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration				
Rising Stars Unit of study	<input type="checkbox"/> Have some understanding of how encryption works on the web <input type="checkbox"/> Encrypt and decrypt messages in simple ciphers <input type="checkbox"/> Appreciate the need to use complex passwords to keep them secure <input type="checkbox"/> Develop their research skills to decide what information is appropriate <input type="checkbox"/> Develop and refine their ideas and text collaboratively <input type="checkbox"/> Become familiar with blogs as a medium and a genre of writing				

National Curriculum reference	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
Rising Stars Unit of study	<input type="checkbox"/> Understand some elements of how search engines select and rank results <input type="checkbox"/> Question the plausibility and quality of information <input type="checkbox"/> Develop a critical, reflective view of a range of media, including text <input type="checkbox"/> Understand the work of architects, designers and engineers working in 3D
National Curriculum reference	Select, use and combine a variety of software (including internet services) on a range of devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analyzing, evaluating and presenting data and information
Rising Stars Unit of study	<input type="checkbox"/> Use iterative development techniques (making and testing a series of small changes) to improve their game <input type="checkbox"/> Develop some awareness of computer-generated art, in particular fractal-based landscapes <input type="checkbox"/> Create a sequence of blogposts on a theme <input type="checkbox"/> Incorporate additional media <input type="checkbox"/> Develop familiarity with a simple CAD (computer aided design) tool <input type="checkbox"/> Develop spatial awareness by exploring and experimenting with a 3D virtual environment <input type="checkbox"/> Develop greater aesthetic awareness
National Curriculum reference	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and conflict
Rising Stars Unit of study	<input type="checkbox"/> Understand the need for private information to be encrypted <input type="checkbox"/> Develop their understanding of online safety and responsible use of technology <input type="checkbox"/> Comment on the posts of others

At the end of each unit of work, teachers complete half-termly Computing evaluations. This helps to evaluate the effectiveness of each unit of work, providing next steps as well as evidence of what the children enjoyed about the computing unit of work.



### Kingsmoor Academy

## Computing Evaluation Form

Rising Stars Computing unit:

Did the children enjoy this Rising Stars Computing? Explain.

---

Were you able to ensure the coverage of NC objectives?

---

Were the children able to make choices related to their own learning styles? Explain.

---

Was any evidence recorded in the Computing Portfolios?

---


What Went Well...

---

Even Better If...

---

### Kingsmoor Computing Evaluations - Autumn 2



Rising Stars Computing unit covered	(Ghana) 1.5 - We are storytellers (Italy) 1.5 - We are storytellers (Egypt) (India) 3.2 - We are bug fixers (China) 4.2 - We are toy designers (Japan) 5.2 - We are cryptographers (Australia) 6.3 - We are advertisers
Did the children enjoy this Rising Stars Computing unit?	<ul style="list-style-type: none"> <li>The children found this unit enjoyable however, due to our Christmas production we were unable to fully explore this unit. Children enjoyed the creativity of this unit- particularly through using Purple Mash paint options. (Ghana)</li> <li>Yes, the children enjoyed exploring this unit. We did struggle to explore it fully due to our Christmas production. Although the children enjoyed using purple mash and got very creative with it. (Italy)</li> <li>(Egypt)</li> <li>The children enjoyed this topic as it not only allowed them to use a range of resources, but it also allowed them to problem solve and identify where problems occur in technology. The children felt a sense of achievement when they corrected the problems. (India)</li> <li>Children enjoyed designing toys based on Santa's helpers. The children were able to brainstorm ideas using Purple Mash. The children were then able to use their ideas to then create them using 2 Publish on Purple Mash presenting their work in a booklet format. (China)</li> <li>The children enjoyed finding out about Coding and the safety of the internet. They were able to participate in the discussions about how they can stay safe on the internet. (Japan)</li> <li>Yes they enjoyed this unit. It linked well to our English work as well allowing the children to consolidate and extend their learning. (Australia)</li> </ul>