Subject Curriculum Information Pack

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Curriculum Intent

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Intent for key stage 3 Computing.

Computing is a requirement of the national curriculum in key stage 3. Although Pedmore is an academy, and does not have to follow this, we pride ourselves on offering a wide ranging and thorough computing syllabus. Our key stage 3 meets these requirements.

The main focus of key stage 3 is to ensure this diverse offering is in place.

During years 7, 8 and 9, the focus is on developing skills that pupils should have been taught in prior learning for computing. More detail builds through the three years until pupils are in a position to consider developing their computing skills in either GCSE computer science and creative imedia. If they do not choose either then skills they learnt will still be of use in other subjects and later life.

Despite what many think computing is not focussed just on coding. Although these are taught, there is far more to key stage 3 than this. We do develop computational thinking skills (break the problem down, remove the details that are not required, and develop a logic solution). We also do create code, test and fix it.

Understanding the world around them is very important. Pupils will not only learn about the internet, the world wide web and how, for example, social media, need to be treated with respect. By having a good knowledge of how these networks are built using hardware and software, they can make informed decisions about how they might use networks of their own in the future.

Skills in using the correct applications to effectively communicate a message will be useful in both other subjects and later. By learning to use the correct application for the correct “job” pupils ensure that their communications (such as a job application letter, for example), are well and appropriately laid out.

Key basic skills in the use of spreadsheets are becoming a sought after in the job market. These skills could also be used to support data analysis in other subjects.

Other lessons and units allow pupils to explore creativity. Web development, the development of graphics and animation, all open the pupils up to the possibility of an interest in imedia, art, or other creative subjects in key stage 4. They are also fun!

Remaining units will help pupils to understand how data is stored, how computers work from the inside and fill in some knowledge gaps that are both interesting in themselves, and broaden their technological knowledge of the world around them.

Even if they do not pursue computer science or imedia, the skills learnt in computing will stand them in good stead for other subjects and future careers.

Year 7 Curriculum Assessment Map

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Curriculum Assessment Map: Year 7 Computing

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Impact of technology	Networks	Using media – gaining support	Scratch programming 1	Scratch programming 2	Modelling data
Key Learning	1 Welcome to the computing lab 2 Welcome to your workstation 3 Respectful online communication 4 Presenting to an audience: part 1 5 Presenting to an audience: part 2 6 Who are you talking to?	1: Computer networks and protocols 2: Networking hardware 3: Wired and wireless networks 4: The internet 5: Internet services 6: The World Wide Web	1 Features of a word processor 2 Licensing appropriate images 3 The credibility of sources 4 Research and plan your blog 5 Promoting your cause 6 Project completion and assessment	1: Introduction to programming and sequencing 2: Sequence and variables 3: Selection 4: Operators 5: Count-controlled iteration 6: Problem-solving	7: You've got the moves! 8: Fly cat fly! 9: Loop the loop! 10: Treasure those lists! 11: Translate this! (Part 1) 12: Translate this! (Part 2	1: Getting to know a spreadsheet 2: Quick calculations 3: Collecting data 4: Become a data master! 5: Level up your data skills!
Skills	Be able to create passwords that are effective. Learn to operate safely in the computer room, appropriately on email, and wisely online.	Describe the different roles of hardware components in sharing computer resources. Explain how we have become a society heavily reliant on the world wide web and internet.	Use appropriate software to ensure a message is effectively communicated. Ensuring that your work acknowledges its sources and does not fall the wrong side of copyright law etc.	Use basic programming block-based language to demonstrate principles of coding.	Combine slightly more advanced techniques to develop principles of computational thinking.	Develop skills in spreadsheets in order to record and analyse data from a number of sources. Explain what a primary and secondary data source is.
End points from year 6	Be able to use file management to efficiently organise work. Be able to use a keyboard effectively. Start apps, searching for them using the "type here to search" box. Correct use of mouse. Perform basic edit techniques on text and images, including using the PrScn button. Use basic functions in Office applications Word and PowerPoint.					
And points for year 7.	Be able to use email effectively and safely. Be a responsible (and safe) "digital native". Be able to create programs in Scratch using fundamental coding techniques. Be able to create programs in Scratch using more advanced coding techniques.					

Curriculum Assessment Map: Year 7 Computing

	Create simple spreadsheets using functions, sorting and data analysis techniques. Effectively use Office applications to support a cause or message. Explain basic networking hardware and how networks are used.					
Informal/formal assessment	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Lesson 6: Assessment using spreadsheets.

Year 8 Curriculum Assessment Map

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Curriculum Assessment Map: Year 8 Computing

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Media Vectors	Computing systems	Developing for the web	Representations from clay to silicone	Mobile Apps Development	Introducing Python Programming
Key Learning	1 Get into shapes 2 Paths united 3 Icon challenges 4 What will you make? 5 Under the hood 6 Showcase	1 Get in gear 2 Under the hood 3 Orchestra conductor 4 It's only logical 5 Thinking machines 6 Sharing	1 Website building blocks 2 Words are not enough 3 Taking shortcuts 4 Searching the web 5 Tightening the web 6 Navigating the web	1: Across time and space 2: Lights and drums 3: Binary digits 4: Numbers in binary 5: Large quantities 6: Turing's mug	1: App for that 2: Tappy Tap App 3: Lesson 2 contd. 4: User input 5: Lesson 4 contd. 6: Project completion	1 First steps 2 Crunching numbers 3 At a crossroads 4 More branches 5 Round and round 6 Putting it all together
Skills	Use vector graphics development tools to create a progressively more complex set of vector graphic images.	Explain how different components of a computer are used to make programs work. Describe how computers are like, but not, thinking machines.	Use HTML to develop web sites using various multimedia components.	Use binary to represent data and numbers as happens in a computer.	Step by step development of a application using a mobile phone app development tool.	Using skills initially developed in the earlier scratch lessons, implement these in to a text-based programming language. Write, compile, test and debug text based code.
End points year 8 in to year 9	Be able to explain the basic concepts of computers including common hardware devices. Be able to create a functioning website using basic techniques. Building upon programming skills started in Scratch in year 7, to create code in a text-based language (Python). Create programs in both the shell, and file parts of the Python programming language, and be able to explain why each is used. Find and correct the main types of errors in a Python program. Use multiple techniques to create and explain vector graphics. Build upon previous programming techniques to build an application for use on a mobile phone. Explain that a digital computer stores data in binary, and how this is used to represent images and sounds.					
Knowledge Organiser Focus	TBA	TBA	TBA	TBA	TBA	TBA

Curriculum Assessment Map: Year 8 Computing

Informal/formal assessment	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.

Year 9 Curriculum Assessment Map

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Curriculum Assessment Map: Year 9 Computing

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Python programming with sequences of data	Media animation	Data Science	Representations going audio visual	Cyber security	Physical computing
Key Learning	1 Warm up 2 Playlist 3 In a while, crocodile 4 The famous for 5 Make a thing 6 Wrap up	Lesson 1: Move, rotate, scale, colour Lesson 2: Animation, names, parenting Lesson 3: Complex models and colours Lesson 4: Organic modelling Lesson 5: Lights, camera, render Lesson 6: Project	Lesson 1: Delving into data science Lesson 2: Global data Lesson 3: Statistical state of mind Lesson 4: Data for action Lesson 5: Clean it up Lesson 6: Make a change	1 Binary mosaic 2 A splash of colour 3 Collage 4 Good vibrations 5 Sonic playground 6 Always another way	Lesson 1: You and your data Lesson 2: Social engineering Lesson 3: Script kiddies Lesson 4: Rise of the bots Lesson 5: There's no place like 127.0.0.1 Lesson 6: Under Attack	1 Hello physical world 2 Bare bones 3 Connections 4 Dream it up 5 Build it up 6 Wrap it up
Skills	Extend lessons from year 8 to develop more sophisticated programs in Python. Develop iterative solutions to problems. Make effective use of lists in programs.	Develop, step by step, simple animations using basic techniques. Create a 3–10 second animation. Render out the animation.	Develop data capture forms to gather data. Use various data handling techniques to analyse the data. Ensure that data is accurate and data entries are complete.	Develop a good knowledge of how data is stored in a computer using binary. Explain how sound etc. is converted from the "real" world to be stored in a computer.	Explain how data and privacy are at risk on the internet and networks. Mitigate the risks associated with these.	Use BBC micro bits to develop various ways for a computer to interact and sense the outside world.
End points year 9	Building on previous programming skills, use more advanced data structures such as lists. This will be useful if Computer Science GCSE is selected as an option. Create 3d animations. This will be useful if Creative iMedia is selected as an option. Capture, analyse and investigate using raw data, making it useful information. This is a skill that is used across many subjects. Building on binary lessons in year 8, be able to calculate the size of graphical and sound, based on their characteristics. This will be useful if any computing-based options are selected in key stage 4 or beyond. Critically evaluate cyber security risks while using the world wide web. This is a very useful skill for general use of the world wide web, to help secure personal data, and avoid pitfalls. Building upon previous coding knowledge. Create programs to physically control computer-based devices. This will be useful if Computer Science GCSE is selected as an option.					

Curriculum Assessment Map: Year 9 Computing

Knowledge Organiser Focus	TBA	TBA	TBA	TBA	TBA	TBA
Informal/formal assessment	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.	In class GRIT tasks. Pupil work marked electronically using homework system. Online end of unit quiz.

Year 7 Curriculum Journey

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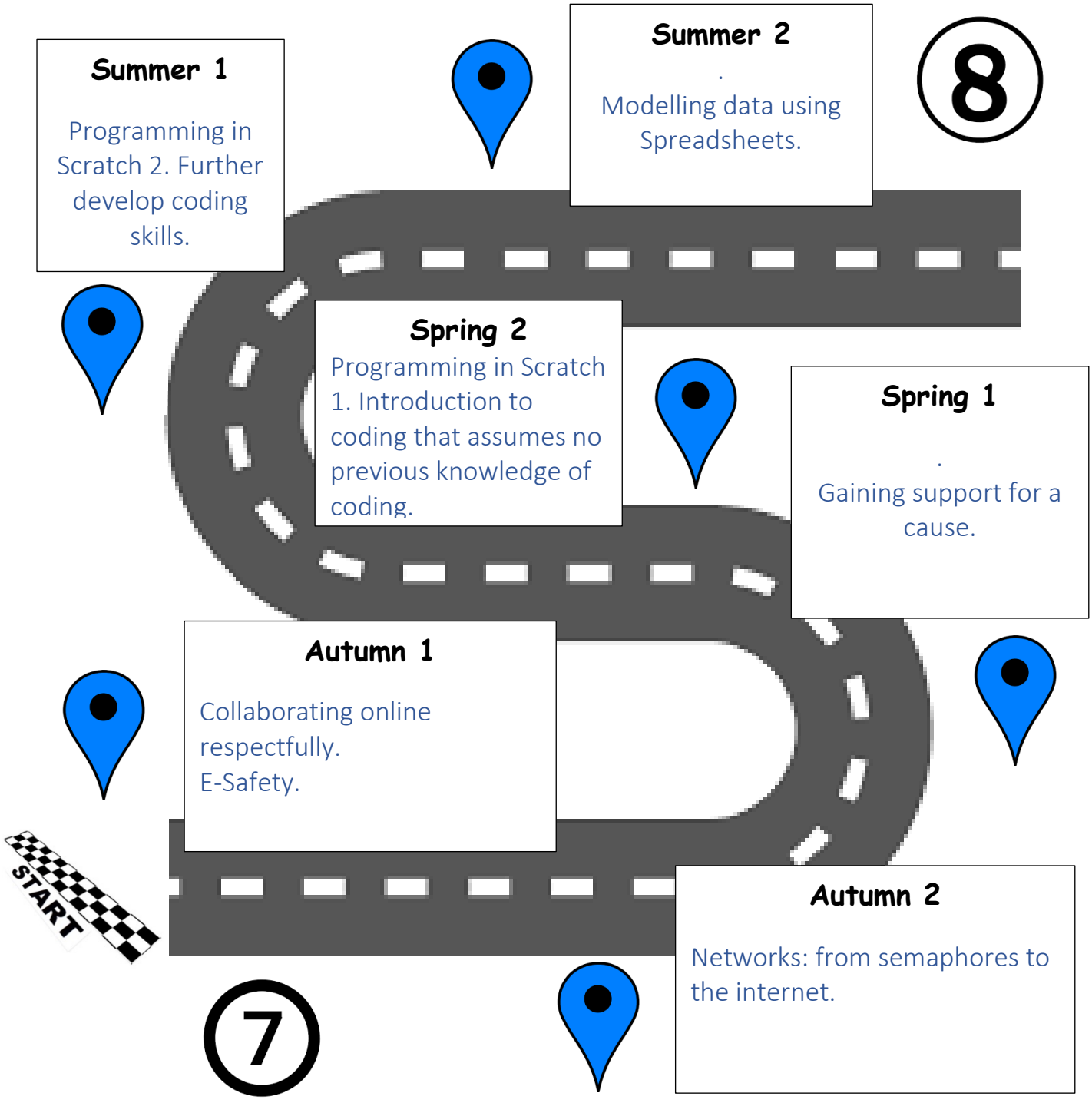
YEAR 7 CURRICULUM JOURNEY

In Computing, we want you to become resilient, independent, and informed, technical learners. You will learn how to break problems down, develop solutions, test and evaluate them, and develop a strong knowledge about how computers and their systems work. During year 7 you will learn :



Year 8 Curriculum Journey

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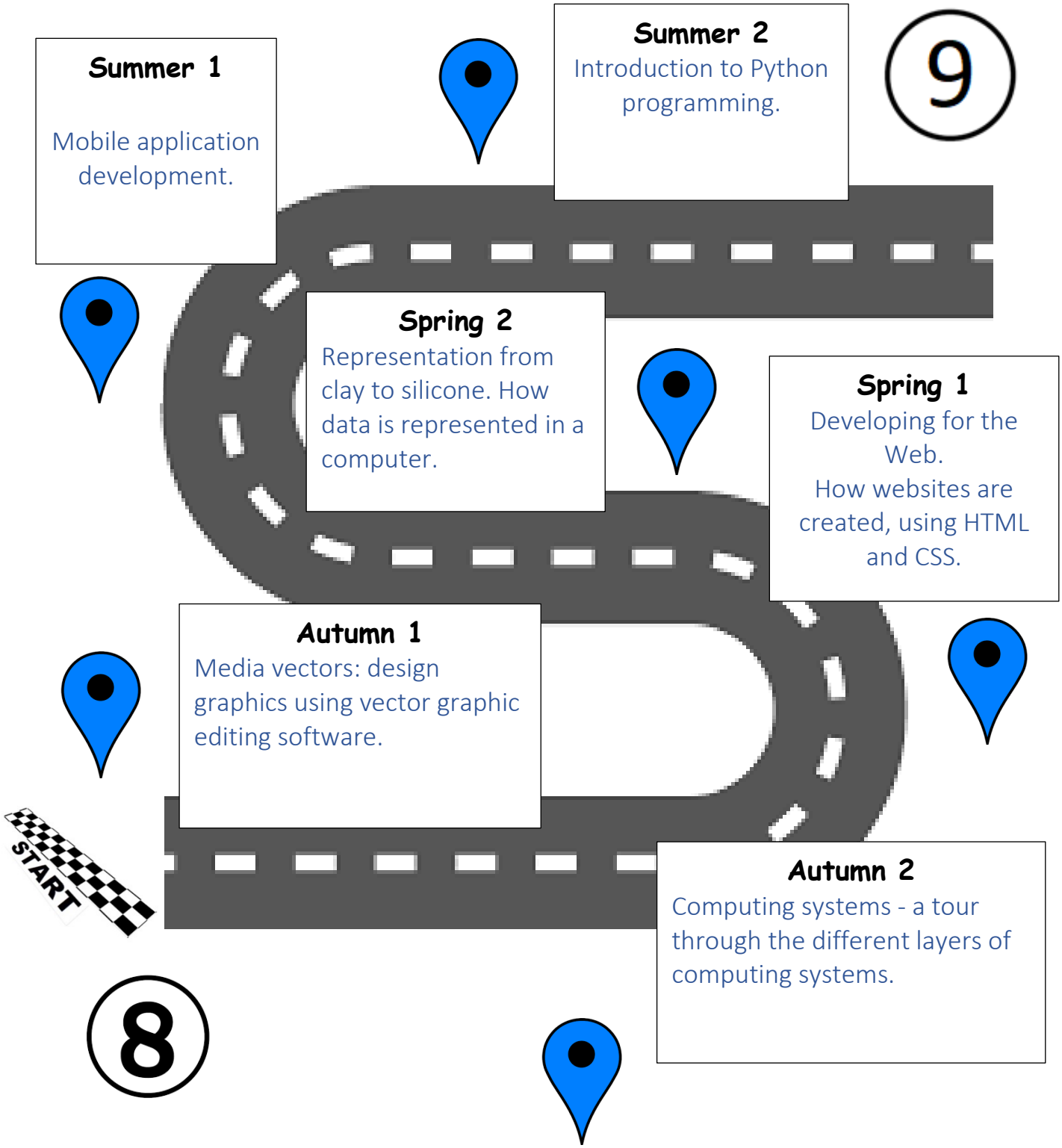
YEAR 8 CURRICULUM JOURNEY

In Computing, we want you to become resilient, independent, and informed, technical learners. You will learn how to break problems down, develop solutions, test and evaluate them, and develop a strong knowledge about how computers and their systems work. During year 8 you will learn :



Year 9 Curriculum Journey

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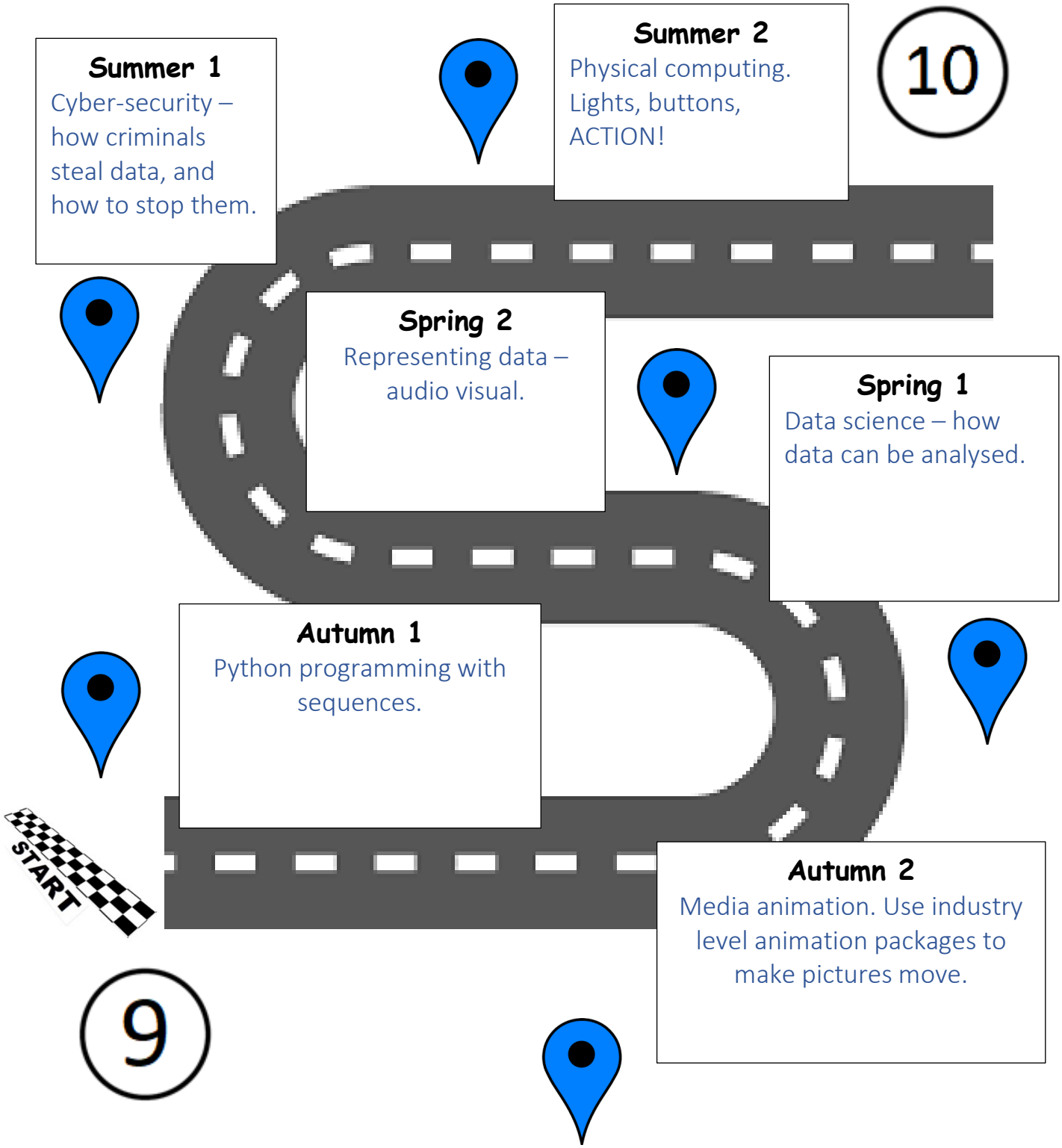
YEAR 9 CURRICULUM JOURNEY

In Computing, we want you to become resilient, independent, and informed, technical learners. Year 9 builds on previous work in year 7 and 8 and prepares you to make informed options decisions to progress to either Computer Science or Creative iMedia. During year 9 you will learn :



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