

Foundation MTP - Computing

Intent Computing at Talavera will equip children to develop their computational thinking and creativity to understand and influence the world around them. Computer science forms a key part of the computing curriculum and allows children to develop their resilience, curiosity and problem solving skills through the use of programming and reading code. We aim for them to become critical thinkers who are able to evaluate the reliability of a range of online platforms. In addition to this, children will improve their digital literacy skills to be able to use, express themselves and develop ideas through information and communication technology at a level suitable for them to be active participants in an ever changing digital world. Finally children will explore what makes a good digital citizen in order for them to act in a safe and responsible way whilst online enabling them to reflect upon the digital footprint they have begun to create.

Throughout both the academic year and across the different year groups, children will cover but also repeat key skills. Repetition of skills will allow for children to be introduced to them within the first units before developing their confidence and independence of the skills when repeated. Children in Years 3 - 5 will repeat the skills further by apply them to different formats, programs and physical outputs to ensure the skills are further explored, consolidated and embedded enabling them to leave Talavera with appropriate skills to use in the forever growing and changing digital world. In addition to this, throughout the online safety modules, children will experience more challenging and age related issues the further they go through the school.

| | | | 1 | I | 1 | | r |
|--------|--|--|------------------------------------|------------------------------------|---|---|---------------------------------------|
| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 | Additional units/ sessions |
| Year 3 | Write programs that | Use and combine a variety of | • Understand computer networks, | Write programs that | Write programs that | .Select, use, and combine a | Online safety lessons: |
| | accomplish specific goals | software (including internet | including the internet; how they | accomplish specific goals | accomplish specific goals | variety of software (including | <u>1 lesson per half term</u> |
| | Begin to examine a program and | services) on a range of digital | can provide multiple services, | Begin to examine a program and | Begin to examine a program and | internet services) on a range | |
| | answer questions about its steps, | devices to design and create a | such as the World Wide Web, | answer questions about its steps, | answer questions about its steps, | of digital devices to design | Use technology safely, |
| | parts and purpose. | range of programs, systems | and the opportunities they | parts and purpose. | parts and purpose. | and create a range of | respectfully and responsibly; |
| | Begin to convert an algorithm into a | and content that accomplish | offer for communication and | Begin to convert an algorithm | Begin to convert an algorithm into | programs, systems, and | recognise |
| | program that accomplishes a | given goals, including collecting, | collaboration. | into a program that accomplishes | a program that accomplishes a | content that accomplish given | acceptable/unacceptable |
| | specific goal. | presenting information | Begins to explore basic network | a specific goal. | specific goal. | goals, including collecting, | behaviour; identify a range |
| | Identify various forms of <u>input</u> | Develops their ability to use key | functions, shared security, work | Use <u>sequence</u> in programs | Use <u>sequence</u> in programs | analysing, evaluating, and | of ways to report concerns |
| | and <u>output</u> | features of the program. | collaboration, communication, | and various forms of input | and various forms of input | presenting data and | about content and contact |
| | Identify real life object inputs and | Is able to use program specific | storage, printing services etc. | and output | and output | information | Begin to discuss and identify |
| | outputs. | features to present data in an | Begins to explore some of the main | Begin to create a code sequence | Begin to create a code sequence | Use technology safely, | examples of safe and unsafe |
| | Begin to identify inputs that might | efficient way. | services, such as the World wide | for a given purpose. | for a given purpose. | respectfully, and responsibly | technology. |
| | be used in a programming context. | | web, which uses the Internet | Begin to explain what is | Begin to explain what is happening | | Begin to discuss and identify |
| | Begin to output programming using | Beginning to understand how their | transport network | happening in a code sequence | in a code sequence they have | Branch database | examples of respectful or |
| | more than one input and output. | choice of keywords can affect | Computing systems and networks - | they have created. | created. | | disrespectful technology |
| | Use <u>sequence</u> in programs | their internet search. | Connecting Computers | Begin to identify inputs that | Begin to identify inputs that | | use. |
| | Begin to create a code sequence | Powerpoint | | might be used in a programming | might be used in a programming | | Develop an understanding |
| | for a given purpose. | | | context. | context. | | that they are responsible |
| | Begin to explain what is happening | | | Begin to use logical reasoning | Begin to use logical reasoning | | for my use of technology at |
| | in a code sequence they have | | | to explain how some simple | to explain how some simple | | all times. |
| | created | | | algorithms work and to | algorithms work and to | | Begin to discuss and |
| | Begin to use logical reasoning | | | detect errors in algorithms | detect errors in algorithms | | recognise acceptable and |
| | to explain how some simple | | | and programs | and programs | | unacceptable behaviours. |
| | algorithms work and to detect | | | Begin to develop and adjust | Begin to identify that some | | Begin to discuss ways that |
| | errors in algorithms and | | | codes based on a given problem | algorithms and programs don't | | concerns over content or |
| | programs | | | and requirement. | work because they don't follow | | contact can be reported and |
| | Begin to identify that some | | | Begin to identify that some | logical rules expressed in steps. | | who are safe adults to talk |
| | algorithms and programs don't work | | | algorithms and programs don't | Develops their ability to look for | | to when concerned. |
| | because they don't follow logical | | | work because they don't follow | how their algorithm or code is | | Online Safety |
| | rules expressed in steps. | | | logical rules expressed in steps. | different from a good example | | |
| | Develops their ability to look for | | | Develops their ability to look for | and use this to begin to correct | | Use and combine a |
| | how their algorithm or code is | | | how their algorithm or code is | errors. | | variety of software |
| | different from a good example and | | | different from a good example | Stop frame | | (including internet |
| | use this to begin to correct errors. | | | and use this to begin to correct | | | services) on a range of |
| | Scratch tinkering/ insect game | | | errors. | | | digital devices to design |
| | | | | Probots | | | and create a range of |
| | | | | | | | programs, systems and |
| | | | | | | | content that accomplish |
| | | | | | | | given goals, including |



| Year 4 | Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems Develop ability to use a flowchart or plain English to design an algorithm for a specific goal. Develop ability to examine an algorithm and answer questions about its steps, parts and purpose. Develop their confidence and independence to explain what is happening in their own code sequence Identify some different ways programs can be planned as algorithms e.g. Flowcharts, Normal language and Pseudo codes Develop their ability to write a program by converting algorithms into code. Use sequence, <u>loops</u> and <u>repetition</u> in programs; work with various forms of input and output Develop their confidence and independence to create a code sequence for a purpose. Begin to convert repetition in an algorithm and create code that uses repetition for a real purpose. Use count-controlled and forever loops. Understand the difference between types of loops and identify which is most appropriate for the program Develop ability to input and output programming in multiple ways. Can explain what purpose my repetition code fulfils in my program. | Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Can develop simple safety rules that will keep themselves and others safe. Further discuss and develop understanding of respectful technology etiquette that will improve their use of technology. Develop ability to recognise behaviour that is acceptable or unacceptable when using technology including reflecting upon their own behaviour and how it affects others. Develop their understanding and confidence in how to report concerns over content and contact including the different ways and adults it can be reported to. Online Safety | Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems Develop ability to examine an algorithm and answer questions about its steps, parts and purpose. Develop their ability to write a program by converting algorithms into code Use sequence and repetition in programs; work with various forms of input and output. Develop their confidence and independence to create a code sequence for a purpose. Develop their confidence and independence to explain what is happening in my code sequence. Begin to convert repetition in an algorithm and create code that uses repetition for a real purpose Develop ability to input and output programming in multiple ways. Use logical reasoning to explain how some simple algorithms and programs Find a bug (error) after receiving a hint from my teacher or a peer. Recall common bug types mentioned by a teacher or peers and identify where they might occur in their own code | 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. Begins to explore basic network functions, shared security, work collaboration, communication, storage, printing services etc. Begins to explore some of the main services, such as the World wide web, which uses the Internet transport network. Use search technologies effectively, begin to appreciate how results are selected and ranked, and begin to be discerning in evaluating digital content Begin to explore changing the order of search keywords and noting the differences in the results returned. Develop ability to use a range of symbols and keywords to adapt internet searches and make them more effective. Begins to identify that the top results in a returned search doesn't mean it is the most truthful. With adult support, begins to discuss the reliability of searches returned. Computing systems and networks - The Internet | Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals Develops their ability to use key features of the program. Can identify that some tasks will require more than one digital tool, service or device. Photo editing | S via ir or al pi ca g Devel featu Can ia requir servic Can ia evalua usefu Can pi analys appro Devel formu effici Excel |
|--------|--|--|---|---|---|--|

| | collecting, presenting information |
|---|--|
| | Develops their ability to use |
| | program |
| | Is able to use program |
| | specific features to present |
| | data in an efficient way. |
| | To develop disciplinary skills |
| | in line with progression |
| | document. |
| alact use and combine a | Publisher - publishing |
| riety of software (including | (1 per term) |
| ternet services) on a range | |
| digital devices to design | Safer Internet day |
| ograms, systems and | Continuation of objectives |
| ontent that accomplish given bals | from Autumn 2 |
| ops their ability to use key res of the program. | Online Safety |
| entify that some tasks will | Legoland trip - coding |
| e more than one digital tool, e or device | physical devices |
| entify that data can be | Continuation of objectives |
| ted to determine how | from Autumn 1 |
| it is. | Programming - Lego |
| esent data that has been | |
| ed and evaluated in a form | Select, use and combine a variaty of software |
| ons ability to use simple | (including internet |
| la to develop accuracy and | services) on a range of |
| ency | digital devices to design |
| | and create a range of |
| | programs, systems and |
| | content that accomplish |
| | given goals |
| | Develops their ability to use |
| | program |
| | Can identify that some tasks |
| | will require more than one |
| | digital tool, service or |
| | device. |
| | Can identify that data can |
| | be evaluated to determine |
| | now userul IT IS. |
| | been analysed and evaluated |
| | in a form appropriate for my |
| | audience |
| | To develop disciplinary skills |
| | in line with progression |
| | document. |
| | Publisher - publishing |



| | | | 1 | 1 | 1 | 1 | |
|--------|--|-------------------------------------|--|-----------------------------------|---|-------------------------------------|--|
| | Use logical reasoning to explain | | | | | | |
| | how some simple algorithms | | | | | | |
| | work and begin to detect and | | | | | | |
| | correct errors in algorithms | | | | | | |
| | and programs | | | | | | |
| | Find a bug (error) after receiving a | | | | | | |
| | hint from my teacher or a peer. | | | | | | |
| | Recall common bug types mentioned | | | | | | |
| | by a teacher or peers and identify | | | | | | |
| | where they might occur in their | | | | | | |
| | own code. | | | | | | |
| | Scratch Hide and Seek game | | | | | | |
| Year 5 | Design, write and debug | • Select, use and combine a | Use technology safely, | • Design, write and debug | Understand computer | • Select, use and combine a | Online safety class assembly |
| | programs that accomplish | variety of software (including | respectfully and responsibly; | programs that accomplish | networks, including the | variety of software (including | (1 per term) |
| | specific goals, including | internet services) on a range | recognise | specific goals, including | internet; how they can | internet services) on a range | |
| | controlling or simulating | of digital devices to design and | acceptable/unacceptable | controlling or simulating | provide multiple services | of digital devices to design | Safer Internet dav |
| | physical systems: solve | create a range of programs | behaviour: identify a range of | physical systems: solve | such as the World Wide | and create a range of | , |
| | problems by decomposing them | systems and content that | ways to report concerns about | problems by decomposing | Web and the opportunities | programs systems and | Continuation of objectives |
| | into smaller parts | accomplish given goals | content and contact | them into smaller parts | they offer for communication | content that accomplish given | from Spring 1 |
| | Working with a partner can write a | includina collectina, analysina | Know how to report my concerns | Working with a partner can | and collaboration | anals including collecting | Online Safety |
| | program by converting algorithms | evaluating and presenting data | over content and contact including | write a program by converting | Can explore some of the main | analysing evaluating and | |
| | into code | and information - partially | the different ways and adults it can | algorithms into code | services such as the World wide | presenting data and | |
| | Use my knowledge of the rules that | Develop ability to select the right | be reported to | Use my knowledge of the rules | web which use the Internet | information | Select use and combine |
| | avern algorithms and programs to | digital tool that matches the | Can explain why they should report | that agvern algorithms and | transport network | Develop ability to select the right | a variety of software |
| | predict how they might operate | purpose and intended outcome | concerns over content and contact | programs to predict how they | Can explain in non-technical | digital tool that matches the | (including internet |
| | explain how they work and correct | Can design digital systems to | Can explain why their behaviour is | might operate explain how they | language how the internet | purpose and intended outcome | services) on a range of |
| | simple errors | collect data | acceptable or unacceptable when | work and correct simple errors | connects computers around the | Can design digital systems to | digital devices to design |
| | Independently explains what is | Begin to identify that data can be | using technology including the | Independently explains what is | world | collect data | and create a range of |
| | happening in their own code | evaluated to determine how useful | effect it could have on others | happening in their own code | Can explain how a network or | Begin to identify that data can be | programs systems and |
| | sequence | it is | Can identify that some people act | sequence | internet communication and | evaluated to determine how | content that accomplish |
| | Identify different ways programs | Can explain why they chose to | differently online and may consider | Identify different ways | collaboration service could be | useful it is | aiven goals including |
| | can be planned as algorithms e a | present data in a chosen way | that they are not responsible for | programs can be planned as | used for benefit or for harm | Can explain why they chose to | collecting analysing |
| | Flowcharts Normal Janauage and | Can explain why they have chosen | their actions when using online | algorithms e.g. Flowcharts | Can identify that the Internet is | present data in a chosen way | evaluating and |
| | Pseudo codes | to use a tool that might not be | technology | Normal Janaugae and Pseudo | a network or networks that many | Can explain why they have chosen | presenting data and |
| | Can identify and explore possible | digital | Have a secure understanding of | codes | home and school devices are | to use a tool that might not be | information |
| | program enhancements | Microsoft nublisher | respectful technology etiquette that | Can identify and explore possible | connected to | digital | Develop ability to select the |
| | Use sequence selection and | | will improve their use of technology | program enhancements | Can explore basic network | Green screens and other | right digital tool that |
| | repetition in programs: work | | Online Safety | Use sequence selection and | functions shared security work | Microsoft based programs | matches the purpose and |
| | with if else statements for | | | repetition in programs: work | collaboration communication | | intended outcome |
| | various forms of input and | | | with variables and various | storage, printing services etc | | Can design digital systems |
| | output | | | forms of input and output | Use search technologies | | to collect data. |
| | Can create code that uses | | | Can create code that uses | effectively and appreciate | | Begin to identify that data |
| | conditional selection for a real | | | conditional selection for a real | how results are ranked. | | can be evaluated to |
| | Durdose. | | | Durdose. | Can change the order of search | | determine how useful it is. |
| | With a partner, creates a code | | | With a partner, creates a code | keywords and note the | | Can explain why they chose |
| | sequence for a purpose | | | sequence for a purpose | differences in the results | | to present data in a chosen |
| | Develops ability to convert | | | Develops ability to convert | returned | | way. |
| | repetition in an algorithm and | | | repetition in an algorithm and | Can use a range of symbols and | | , Can explain why they have |
| | create code that uses repetition | | | create code that uses repetition | keywords to adapt their search | | chosen to use a tool that |
| | for a real purpose | | | for a real purpose | and make it more effective | | might not be digital |
| | Further develops ability to input | | | Further develops ability to input | (speech marks, subtract symbol | | To develop disciplinary skills |
| | and output programming in multiple | | | and output programming in | asterisk tilde AND/OR) | | in line with progression |
| | ways (using different outputs to | | | multiple ways (using different | Can identify that the top results | | document. |
| | those explored in lower school) | | | outputs to those explored in | in a returned search doesn't mean | | Word - publishing |
| | Use if else statements to create | | | lower school) | it is the most truthful or reliable | | |
| | different outcomes | | | | | | |



| | Conditional selection for a real purpose. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Can use a checklist of common errors and fixes. Develops ability to use their knowledge of algorithmic processes and rules to detect and correct errors in algorithms or programs. Scratch - microbits | | Ose logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Can use a checklist of common errors and fixes. Develops ability to use their knowledge of algorithmic processes and rules to detect and correct errors in algorithms or programs. Scratch - quiz | are searching a database of websites not the actual website when using a search engine. Computing systems and networks - Systems and Sharing | | |
|--------|--|---|--|---|--|--|
| Year 6 | Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Know how to and can advise other on how to report my concerns over content and contact including the different ways and adults it can be reported to. Can confidently explain why they should report concerns over content and contact. Can confidently explain why both their own and others behaviour is acceptable or unacceptable when using technology including the effect it could have on others. Can confidently identify that some people act differently online and may consider that they are not responsible for their actions when using online technology. Have a secure understanding of respectful technology etiquette that will improve their use of technology. Can explain how a specific tool, service, device or interaction can be used or conducted respectfully, safely or unsafely. Online Safety | Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Can confidently write a program by converting algorithms into code. Can complete an unfinished program. Can find alternative solutions and explain why the final was chosen. Can explain how decomposition helps them tackle complex problems by breaking up the task into manageable chunks. To define and use procedures and variables Can explain why I chose to use a specific input or output. Understand what a procedure is. To create blocks to carry out a predetermined procedure Understand what a variable is Create variables to fulfil a purpose. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Can debug their own code independently. Can confidently use my knowledge of algorithmic processes and rules to detect and correct errors in algorithms or programs. Scratch - variables in games | Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Can explain how search results are selected and ranked. Can identify which websites they feel are trustworthy and reliable and explain why. Can identify clues which suggest an untrustworthy sources or pop up including scam emails. Further develop ability to change the order of search keywords and note the differences in the results returned Further develop ability to use a range of symbols and keywords to adapt their search and make it more effective (speech marks, subtract symbol, asterisk, tilde, AND/OR) Embedded in foundation subjects | Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Can explain why the digital tool they have chosen is right for their project and intended outcome Can explain how and why they have collected a specific type of data. Can explain why data is, or isn't useful for a specific purpose. Can explain their choice of layout and presentation including how it is suited to their target audience. Websites | Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Know how to and can advise other on how to report my concerns over content and contact including the different ways and adults it can be reported to. Can confidently explain why they should report concerns over content and contact. Can confidently explain why both their own and others behaviour is acceptable or unacceptable when using technology including the effect it could have on others. Can confidently identify that some people act differently online and may consider that they are not responsible for their actions when using online technology. Have a secure understanding of respectful technology etiquette that will improve their use of technology. Can explain how a specific tool, service, device or interaction can be used or conducted respectfully, safely or unsafely. Online Safety | Online safety class assembly (1 per term) Safer Internet day Continuation of objectives from Autumn 1 Online Safety Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Can explain why the digital tool they have chosen is right for their project and intended outcome Can explain how and why they have collected a specific type of data. Can explain why data is, or isn't useful for a specific purpose. Can explain their choice of layout and presentation including how it is suited to their target audience. To develop disciplinary skills in line with progression document. |
| | | | | | | Word - publishing |

