Progression in Computing at Our Lady of the Assumption Catholic Primary School

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|  | Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Computer Science |  | I know what algorithms are -  programs execute by  following precise and  unambiguous  instructions.  I know how to create and debug  simple programs.  I know how to use logical reasoning to  predict the behaviour  of simple programs. | I know what  algorithms are  I know how algorithms are implemented as programs on digital devices;  I know how to create and debug simple programs  I know how to use logical reasoning to predict the behaviour of simple programs by writing simple cause and effect sentences. . | I know how to design, write and debug programs that  accomplish specific  goals, including  controlling or  simulating physical  systems; solve  problems by  decomposing them  into smaller parts.  I know how to use sequence,  selection and repetition in  programs; work with  variables and various  forms of input and  output.  I know ways to explain how some simple algorithms  work and to detect  and correct errors in  algorithms and  programs.  I know 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. | I know how to design, write and  debug programs that  accomplish specific  goals, including  controlling or  simulating physical  systems; solve  problems by  decomposing them  into smaller parts.  I know how to use sequence,  selection and repetition in  programs; work with  variables and various  forms of input and  output.  I know ways to explain how some simple algorithms  work and to detect  and correct errors in  algorithms and  programs.  I know 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. | I know how to design, write and  debug programs that  accomplish specific  goals, including  controlling or  simulating physical  systems; solve  problems by  decomposing them  into smaller parts.  I know how to use sequence,  selection and repetition in  programs; work with  variables and various  forms of input and  output.  I know ways to explain how some simple algorithms  work and to detect  and correct errors in  algorithms and  programs.  I know 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. | I know how to design, write and  debug programs that  accomplish specific  goals, including  controlling or  simulating physical  systems; solve  problems by  decomposing them  into smaller parts.  I know how to use sequence,  selection and repetition in  programs; work with  variables and various  forms of input and  output.  I know ways to explain how some simple algorithms  work and to detect  and correct errors in  algorithms and  programs.  I know 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. |
|  | I can explain that an algorithm is a  set of instructions.  (1.4, 1.5)  I can turn an algorithm into code that  the computer can understand.  (1.4, 1.7)  I can work out what is wrong when  the steps are out of order in  instructions. (1.4, 1.5)  I can say that if something does not  work how it should it is because my  code is incorrect. (1.7)  I can try and fix my code if it isn’t  working properly. (1.7)  I can make good guesses of what is  going to happen in a program. For  example, where the turtle might go. | I can explain an algorithm is a set of  instructions to complete a task.  (2.1)  I can carefully plan my algorithm so it will work when I make it into code.  (2.1)  I can design a simple program using 2Code that achieves a purpose.  (2.1)  I can find and correct some errors in my program.  (2.1)  I can say what will happen in a  program.  (2.1)  I can spot something in a program that has an action or effect (does  something ) (2.1) | I can make a real-life situation into an algorithm for a program. (3.1)  I can design an algorithm carefully, thinking about what I want it to do and how I can turn it into code. (3.1)  I can identify an error in my program and fix it. (3.1)  I can experiment with timers in my programs. (3.1)  I can identify the difference in using between the effect of a timer or repeat command in my code. (3.1)  I can explain that a variable stores information while a program is running (executing). (3.1)  I can identify ‘If’ statements, repetition and variables. (3.1)  I can read programs with several steps and predict what it will do. (3.1)  I can identify different ways that the internet can be used for communication. (3.5)  I can use email such as 2Email to respond to  others appropriately and attach files. (3.5) | I can turn a real-life situation to solve into an  algorithm, using a design that shows how I can  accomplish this in code. (4.1, 4.5)  I can use repetition in my code. For example,  using a loop that continues until a condition is met such as the correct answer being entered.  (4.1)  I can use timers within my program designs more  accurately to create repetition effects. For  example, I can create a counting machine. (4.1)  I can use selection (decision) in my  programming. For example, using an ‘if  statement’ for a question being asked and the  program takes one of two paths. (4.1)  I can use variables within my program and know  how to change the value of variables. (4.1)  I can use the user inputs and output features  within my program, such as ‘Print to screen’. (4.1)  I can identify errors in my code by using different  methods, such as steeping through lines of code  and fixing them. (4.1)  I can read programs that contain several steps  and predict the outcomes with increasing  accuracy. (4.1, 4.5)  I can recognise the main component parts of  hardware which allow computers to join and form  a network. (4.8)  I can explain that network and communication  components can be found in many different devices  which allow them to join the internet. (4.2, 4.7, 4.8) | I can make more complex real-life problems into  algorithms for a program. (5.1)  I can test and debug my programs as I work. (5.1, 5.5)  I can convert (translate) algorithms that contain  sequence, selection and repetition into code that  works. (5.1)  I can use sequence, selection, repetition, and some  other coding structures in my code. (5.1)  I can organise my code carefully for example, naming  variables and using tabs. I know this will help me  debug more efficiently. (5.1)  I can use logical methods to identify the cause of any  bug with support to identify the specific line of code.  (5.1)  I can explain the importance of computer networks and how  they help solve problems and enhance communication. (5.2)  I can recognize the main dangers that can be perpetuated  via computer networks. (5.2)  I can explain what personal information is and know  strategies for keeping this safe. (5.2)  I can use the most appropriate form of online  communication according to the digital content. For  example, use 2Email, 2Blog and Display Boards.  (5.2 & others) | I can turn a complex programming task into an  algorithm. (6.1)  I can identify the important aspects of a  programming task (abstraction). (6.1)  I can decompose important aspects of a  programming task in a logical way, identifying  appropriate coding structures that would work. (6.1)  I can test and debug my program as I work on it  and use logical methods to identify a cause of a  bug. (6.1)  I can identify a specific line of code that is causing a  problem in my program and attempt a fix. (6.1)  I can translate algorithms that include sequence,  selection and repetition into code and nest these  structures within each other. (6.1)  I can use inputs and outputs within my coded  programs such as sound, movement and buttons  and represent the state of an object (6.1, 6.7)  I can interpret (understand) a program in parts and  can make logical attempts to put the separate parts  together in an algorithm to explain the program as a  whole. (6.1)  I can explain the difference between the internet  and the World Wide Web. (6.2, 6.4,6.6)  I can explain what a WAN and LAN is and describe  the process of how access to the internet in school  is possible. (6.2,6.6) |
| Information  Technology |  | I know how to use technology  purposefully to create,  organise, store,  manipulate and  retrieve digital content. | I know how to use technology  purposefully to create,  organise, store,  manipulate and  retrieve digital content. | I know how to use search  Technologies effectively, appreciate how results are  selected and ranked,  and be discerning in  evaluating digital  content.  I know how to 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. | I know how to use search Technologies effectively, appreciate how results are  selected and ranked,  and be discerning in  evaluating digital  content.  I know how to 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. | I know how to use search  technologies  effectively, appreciate  how results are  selected and ranked,  and be discerning in  evaluating digital  content.  I know how to 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 | I know how to use search  technologies  effectively, appreciate  how results are  selected and ranked,  and be discerning in  evaluating digital  content.  I know how to 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 |
|  | I can sort sound, pictures and  text.  (1.2)  I can add sound, pictures and  text to a program such as  2Create a Story.  (1.6)  I can change content on a file  such as text, sound and images.  (1.3, 1.6, 1.7, 1.8)  I can name my work.  (1.2, 1.3, 1.6, 1.7, 1.8)  I can save my work.  (1.2, 1.3, 1.6, 1.7, 1.8)  I can find my work.  (1.2, 1.3, 1.6, 1.7, 1.8) | I can organise data – for example, using a database such as 2Investigate.  (2.3, 2.4)  I can find data using specific searches – for example, using 2Investigate.  (2.4, 2.5)  I can use several programs to organise information – for example, using binary trees such as 2Question or spreadsheets such as 2Calculate.  (2.4, 2.8)  I can edit digital data such as data in music composition software like 2Sequence.  (2.7 and most units)  I can name, save and find my work. (2.3, 2.4, 2.6, 2.7, 2.8 & most units)  I can include photos, text and sound in my creations.  (2.8, 2.6) | I can carry out searches to find digital content on a range of online systems, such as within Purple Mash or on an internet  search engine.  (Across units)  I can collect data and input it into software.  (3.3, 3.6, 3.8)  I can analyse data using features within software  to help such as, formula in 2Calculate  (spreadsheets). (3.3, 3.6, 3.8)  I can present data and information using  different software such as 2Question (branching  database) or 2Graph (graphing tool). (3.3, 3.6,  3.8,3.9)  I can consider what the most appropriate software to use when given a task by my  teacher. (Across units)  I can create purposeful (appropriate) content  and attach this to emails.  (3.3, 3.5, 3.6, 3.7, 3.8, 3.9) | I understand the purpose of a search  engine and the main features within it.  (4.7)  I can look at information on a webpage  and make predictions about the  accuracy of information contained  within it. (4.7)  I can create and improve my solutions  to a problem based on feedback. For  example, create a program using  2Code. (4.1, 4.2)  I can review solutions that others have  created, using a checklist of criteria.  (4.1, 4.2)  I can work collaboratively to create  content and solutions. (4.1, 4.3, 4.4,48)  I can share digital content using a  variety of applications such as: 2Blog,  2Email and Display Boards. (Across units) | I can search precisely when using a search engine. For example, I know I  can add additional words or removes words to help find better results. (5.2)  I can explain in detail how accurate, safe and reliable the content is on a  webpage. (5.2)  I can make appropriate improvements  to digital work I have created. (Across units)  I can comment on how successful a digital solution is that I have created.  For example, a program built in 2Code that sorts decimals numbers. (Across units)  I can work collaboratively with others creating solutions to problems using  appropriate software such as 2Code.  (Across units)  I can use collaborative modes such as within 2Connect to work with others and  share it. (5.7) | I can use filters when searching for digital  content. (6.2,6.9)  I can explain in detail how accurate and reliable a webpage and its content is. (6.2)  I can compare a range of digital content  sources and rate them in terms of content  quality and accuracy. (6.1, 6.3, 6.4, 6.5, 6.7,6.9)  I can consider the intended audience carefully when I design and make digital  content. (6.1, 6.3, 6.4, 6.5, 6.7,6.9)  I can design and create my own online blogs. (6.4)  I can use criteria to evaluate the quality ofnmy own and others digital solutions,  suggesting refinements. (6.1, 6.3, 6.4, 6.5, 6.7,6.9) |
| Digital Literacy |  | I know that technology has uses outside of school.  I know how to use technology safely  and respectfully.  I know how to keep my personal information private;  I know where to go for  help and support when  they have concerns  about content or  contact on the internet  or other online  technologies. | I know that technology has uses outside of school.  I know how to use technology safely  and respectfully.  I know how to keep my personal information private;  I know where to go for  help and support when  they have concerns  about content or  contact on the internet  or other online  technologies. | I know how to use technology safely, respectfully and  Responsibly.  I know how to recognise  acceptable/unacceptable  behaviour  I know how to identify a  range of ways to  report concern about  content and contact. | I know how to use technology safely, respectfully and  Responsibly.  I know how to recognise  acceptable/unacceptable  behaviour  I know how to identify a  range of ways to  report concern about  content and contact. | I know how to use technology safely, respectfully and  Responsibly.  I know how to recognise  acceptable/unacceptable  behaviour  I know how to identify a  range of ways to  report concern about  content and contact. | I know how to use technology safely, respectfully and  Responsibly.  I know how to recognise  acceptable/unacceptable  behaviour  I know how to identify a  range of ways to  report concern about  content and contact. |
|  | I can say what technology is.  (1.9)  I can say what examples of technology are in school.  (1.9)  I can say what examples of technology are at home.  (1.9)  I know that a chair uses old technology and a smart phone  uses new technology.  (1.9)  I can keep my login information safe.  (1.1 and most units) | I can find information I need  using a search engine.  (2.5)  I can explain the consequences of not  searching online safely.  (2.2, 2.5)  I can share work and  communicate electronically – for  example using 2Email or the  display boards.  (2.2 and others)  I can report unkind behaviour and things that upset me online, to a trusted adult.  (2.2)  I can see where technology is  used at school such as in the  office.  (2.2)  I can notice that my creations  such as programs in 2Code,  need similar skills to the adult  world. e.g. The program used for  collecting money for school trips.  (2.1) | I can create a secure password.  (3.2)  I can explain the importance of  having a secure password and  not sharing it with others. (3.2, 3.5)  I can explain the negative  consequences of not keeping  passwords safe and secure. (3.2, 3.5)  I can explain the importance of  keeping safe online and  behaving respectfully. (3.2)  I can use communication tools  such as 2Email respectfully and use good etiquette. (3.2, 3.5)  I can report unacceptable content and contact online in more than one way to a trusted adult. (3.2) | I can show a good understanding of  the online safety rules we learn at school. (4.2 & across curriculum)  I can demonstrate how to use different online technologies  safely. (4.2 & across curriculum)  I can demonstrate how to use a few different online services safely. (4.2 & across curriculum)  I can explain I have a right to privacy both on and offline.  (4.2 & across curriculum)  I can recognise that my wellbeing can  be affected by how I use  technology.  (4.2 & across curriculum)  I can report with ease any concerns with content and contact online and know  immediate strategies to keep safe. (4.2 & across curriculum) | I can show a secure knowledge of online safety rules taught at  school. (5.2 & across units)  I can demonstrate the safe and  respectful use of different online technologies and online services.  (5.2 & across units)  I can always relate appropriate online behaviour to my right to have personal privacy. (5.2 & across units)  I can explain how to not let my mental wellbeing or others be affected by use of online technologies and  services. (5.2 & across units) | I can demonstrate safe and  respectful use of a range of  different technologies and online services. (6.2, 6.4)  I can identify more discrete  inappropriate behaviours online. For example, someone who may  be trying to groom me or someone  else. (6.2)  I can use critical thinking to help me stay safe online. (6.2)  I can explain the value of protecting my privacy and others online. (6.2, 6.4) |