Computing skills progression 2021-2022

Skills progression:

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|  | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| E-Safety | Pupils should be taught to use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or their online technologies. | | Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour,  identify a range of ways to report concerns about content and contact. Be discerning in evaluating digital content. | | | |
| I can keep my  password private.  I can tell you what  personal information  is.  I can tell an adult when I see something  unexpected or  worrying online.  I can talk about why  it’s important to be  kind and polite.  I can recognise an age appropriate website.  I can agree and follow sensible e‐safety rules. | I can explain why I need to  keep my password and personal information private.  I can describe the things that happen online that I must tell  an adult about.  I can talk about why I should go online for a short amount of time.  I can talk about why it is important to be kind and polite online and in real life. I  know that not everyone is who they say they are on the  internet. | I can talk about what  makes a secure password  and why they are  important. I can protect my personal  information when I do different things online.  I can use the safety  features of websites as well as reporting concerns to an adult.  I can recognise websites and games appropriate for  my age.  I can make good choices about how long I spend  online. I ask an adult  before downloading files and games from the internet.  I can post positive  comments online. | I can choose a secure  password when I am using a website. I can talk about  the ways I can protect myself and my friends from harm online. I can  use the safety features of websites as well as reporting concerns to an  adult.  I know that anything I post online can be seen by others.  I choose websites and games that are  appropriate for my age. I can help my friends make  good choices about the time they spend online.  I can talk about why I need to ask a trusted adult before downloading files  and games from the  internet. I comment  positively and respectfully online. | I protect my password and  other personal information.  I can explain why I need to protect myself and my  friends and the best ways to do this, including reporting  concerns to an adult. I know that anything I post online can be seen, used and may  affect others. I can talk about the dangers of spending too long online or  playing a game.  I can explain the importance  of communicating kindly and respectfully.  I can discuss the importance  of choosing an age appropriate  website or  game. I can explain why I need to protect my computer or device from  harm. | I protect my password and  other personal  information.  I can explain the  consequences of sharing too much information about myself online.  I support my friends to protect themselves and  make good choices online, including reporting  concerns to an adult.  I can explain the  consequences of spending too much time online or on  a game.  I can explain the  consequences to myself and others of not communicating kindly and  respectfully.  I protect my computer or  device from harm on the internet. |
| Programming | Pupils should be taught to understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous  instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. | | Pupils should be taught to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection and repetition in programs;  work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 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. | | | |
| I can give instructions to my friend and follow their instructions to move around.  I can describe what  happens when I press  buttons on a robot.  I can press the buttons in the correct order to make  my robot do what I want. I can describe what actions  I will need to do to make something happen and  begin to use the word ‘algorithm’.  I can begin to predict what will happen for a short sequence of instructions. I  can begin to use  software/apps to create movement and patterns on a screen. I can use the  word ‘debug’ when I  correct mistakes when I Program. | I can give instructions to my friend (using forward, backward and turn) and  physically follow their  instructions. I can tell you the order I need to do things to make something happen and talk about this  as an algorithm.  I can program a robot or software to do a particular task.  I can look at my friend’s program and tell you what  will happen. I can use programming software to make objects move.  I can watch a program execute  and spot where it goes wrong so that I can debug it. | I can break an open‐ended problem up into smaller parts. I can put programming commands into a sequence to achieve  a specific outcome.  I keep testing my program and can recognise when I  need to debug it.  I can use repeat  commands. I can describe the algorithm I will need  for a simple task. I can detect a problem in an algorithm which could result in a bug in the program. | I can use logical thinking to  solve an open‐ended  problem by breaking it up into smaller parts. I can  use an efficient procedure  to simplify a program. I can use a sensor to detect  a change which can select an action within my program.  I know that I need to keep testing my program while I  am putting it together. I can use a variety of tools to create a program. I can recognise an error in a program and debug it. I  can recognise that an  algorithm will help me sequence more complex programs.  I recognise that using  algorithms will also help solve problems in other learning such as maths, science and design technology. | I can decompose a problem into smaller parts to design  an algorithm for a specific outcome and use this to write a program. I can refine a procedure using repeat commands to  improve a program.  I can use a variable to  Increase programming possibilities.  I can change an input to a program to achieve a different output. I can use ‘if’ and ‘then’ commands to select an action.  I can talk about how a computer model can provide information about a  physical system.  I can use logical reasoning to  detect and debug mistakes  in a program.  I use logical thinking,  imagination and creativity  to extend a program. | I can deconstruct a  problem into smaller steps,  recognising similarities to  solutions used before.  I can explain and program  each of the steps in my  algorithm.  I can evaluate the  effectiveness and efficiency  of my algorithm while I  continually test the  programming of that  algorithm.  I can recognise when I need to use a variable to achieve a required output.  I can use a variable and operators to stop a program.  I can use different inputs (including sensors) to control a device or onscreen action and predict what will happen.  I can use logical reasoning  to detect and correct  errors in algorithms and programs. |
| Handling Data | Pupils should be taught to use technology purposefully to organise and manipulate digital content. | | Pupils should be taught 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 talk about the  different ways in which  information can be  shown. I can use  technology to collect  information, including  photos, video and  sound. I can sort  different kinds of  information and  present it to others.  I can add information  to a pictograph and  talk to you about what I have found out. | I can talk about the different  ways I use technology to  collect information, including  a camera, microscope or  sound recorder.  I can make and save a chart or  graph using the data I collect.  I can talk about the data that  is shown in my chart or graph.  I am starting to understand a  branching database.  I can tell you what kind of  information I could use to  help me investigate a  question. | I can talk about the  different ways data can be organised.  I can search a ready‐made database to answer questions.  I can collect data to help me answer a question. I can add to a database. I can make a branching  database.  I can use a data logger to monitor changes and can talk about the information collected. | I can organise data in  different ways.  I can collect data and  identify where it could be inaccurate.  I can plan, create and  search a database to  answer questions.  I can choose the best way to present data to my friends.  I can use a data logger to record and share my readings with my friends. | I can use a spreadsheet and  database to collect and record data.  I can choose an appropriate  tool to help me collect data.  I can present data in an appropriate way.  I can search a database using different operators to  refine my search.  I can talk about mistakes in data and suggest how it  could be checked. | I can plan the process  needed to investigate the world around me.  I can select the most  effective tool to collect data for my investigation.  I can check the data I  collect for accuracy and plausibility. I can interpret the data I collect. I can  present the data I collect in an appropriate way.  I use the skills I have  developed to interrogate a database. |
| Multimedia | Pupils should be taught to use technology purposefully to organise and manipulate digital content. | | Pupils should be taught 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. | | | |
| I can be creative with  different technology  tools. I can use  technology to create  and present my ideas. I  can use the keyboard  or a word bank on my  device to enter text. I  can save information in  a special place and  retrieve it  again | I can use technology to  organise and present my  ideas in different ways.  I can use the keyboard on my  device to add, delete and  space text for others to read.  I can tell you about an online  tool that will help me to share  my ideas with other people.  I can save and open files on  the device I use. | I can create different  effects with different  technology tools.  I can combine a  mixture of text,  graphics and sound  to share my ideas  and learning.  I can use appropriate  keyboard commands  to amend text on my  device, including  making use of a  spellchecker.  I can evaluate my  work and improve its  effectiveness.  I can use an appropriate tool to  share my work  online. | I can use photos, video and sound to create an atmosphere when presenting to different  audiences.  I am confident to explore new  media to extend what I can  achieve.  I can change the appearance of  text to increase its  effectiveness.  I can create, modify and present documents for a particular purpose.  I can use a keyboard confidently and make use of a spellchecker  to write and review my work.  I can use an appropriate tool to  share my work and collaborate online.  I can give constructive feedback  to my friends to help them improve their work and refine my own work. | I can use text, photo, sound  and video editing tools to  refine my work.  I can use the skills I have  already developed to create  content using unfamiliar  technology.  I can select, use and  combine the appropriate  technology tools to create  effects that will have an  impact on others.  I can select an appropriate  online or offline tool to create and share ideas.  I can review and improve my work and support others  to improve their work. | I can talk about audience,  atmosphere and structure  when planning a particular  outcome.  I can confidently identify  the potential of unfamiliar  technology to increase my  creativity.  I can combine a range of  media, recognising the  contribution of each to  achieve a particular  outcome.  I can tell you why I select a  particular online tool for a  specific purpose.  I can be digitally discerning  when evaluating the effectiveness of my work  and the work of others. |
| Technology in our lives | Pupils should be taught to use technology purposefully to store and retrieve digital content and to recognise common uses of information technology beyond school. | | Pupils should be taught to 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. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. | | | |
| I can recognise the way we use technology in  our classroom.  I can recognise ways  that technology is used in my home and  community. I can use links to websites to find information.  I can begin to identify  some of the benefits of using technology. | I can tell you why I use technology in the classroom.  I can tell you why I use technology in my home and community.  I am starting to understand that other people have  created the information I use.  I can identify benefits of using technology including finding  information, creating and communicating.  I can talk about the  differences between the internet and things in the physical world. | I can save and retrieve work on the internet, the  school network or my own device.  I can talk about the parts of a computer.  I can tell you ways to  communicate with others online.  I can describe the World Wide Web as the part of  the internet that contains websites. I can use search  tools to find and use an appropriate website. I can think about whether I  can use images that I find online in my own work. | I can tell you whether a resource  I am using is on the  internet, the school  network or my own  device.  I can identify key words to use when searching safely  on the World Wide Web. I think about the reliability  of information I read on the World Wide Web. I can tell you how to check  who owns photos, text and clipart. I can create a hyperlink to are source on the World Wide Web. | I can describe different parts  of the internet.  I can use different online communication tools for  different purposes.  I can use a search engine to find appropriate information and check its reliability.  I can recognise and evaluate different types of information I find on the  World Wide Web.  I can describe the different parts of a webpage.  I can find out who the information on a webpage belongs to. | I can tell you the internet  services I need to use for different purposes.  I describe how information is transported on the  internet.  I can select an appropriate tool to communicate and  collaborate online.  I can talk about the way search results are selected and ranked.  I can check the reliability of a website.  I can tell you about  copyright and acknowledge  the sources of information that I find online. |