UPGRADE 9
Research how new technology could solve those dangers and add to your work

UPGRADE 8
Research and add another slide about how misuse of email or user accounts has been dangerous before and give recommendations

UPGRADE 7
Research and make a slide to send to classmate on how to safely use files, folders, email, user accounts and printing in school

UPGRADE 6
Create a word processed letter about how to use the computer systems correctly and professionally send it via email to your teacher

UPGRADE 5
Change and make a second version of a word processing document for an child audience making good formatting choices

UPGRADE 4
Save all work with appropriate filenames in the correct folder. Send an email on the school network correctly and make good formatting choices when improving documents
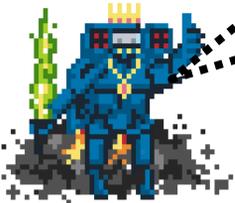
UPGRADE 3
Set up folders to store work on your user area and access the shared drive for lesson resources. Improve a word processing documents look and print it

UPGRADE 2
Write some rules for a strong password and get logged on by yourself

UPGRADE 1
Logon to the network and make a new password with support

UPGRADE 9

Research when online dangers had an effect to people or the world, writing a report to say what happened and lessons learnt

UPGRADE 8

Using feedback improve the 2nd presentation with high quality information making it visual good for the audience

UPGRADE 7

Evaluate how well you have used software before adapting (new version) the presentation for a OAP audience

UPGRADE 6

Improve presentation for needs of Yr6 audience and add how eSafety changes the way people work and go online at home

UPGRADE 5

Add a classmates opinion into your presentation about being respectful online (netiquette) and what to do with dangerous information

UPGRADE 4

Find good information using advanced searches ("quotes", OR, - NOT) about protecting personal information when online

UPGRADE 3

Find online information with basic keyword searches and say how to using ICT at home and in school safely

UPGRADE 2

Without help find information on how to be safe online and add it to a presentation slide

UPGRADE 1

Using help find some dangers of being online and add them to a presentation slide

UPGRADE 9
Define a function for a hexagon shape and make a pattern of 12 hexagons

UPGRADE 8
Research "define a function in Python" and explain how functions would make patterns more efficient

UPGRADE 7
Research "what is pseudocode" and then write the pseudocode for your pattern algorithm

UPGRADE 6
Without help decompose, create an algorithm and efficiently code a pattern made with shapes using iteration (loops, repetition)

UPGRADE 5
Make efficient algorithms and code for at least two different shapes using iteration (loops, repetition)

UPGRADE 4
Decompose, make and test at least two different algorithms for shapes to code them and explain how they work
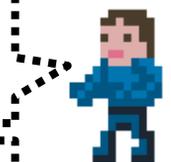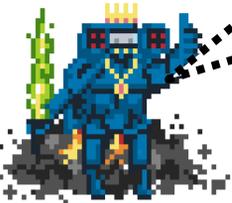
UPGRADE 3
Use given algorithms for different shapes to find repeating patterns and identify the amount of repeats needed

UPGRADE 2
Code a square with a given algorithm (set of instructions) and test to see if it works and makes a square

UPGRADE 1
With help list a set of instructions to make a shape

UPGRADE 9
Write a detailed report on how numbers are represented in computers using many examples

UPGRADE 8
Research and write why hexadecimal numbers are used in computers giving examples of the use

UPGRADE 7
Carry out several complex calculations with binary and hexadecimal. Turn three decimal numbers into binary, add them and convert the result to hexadecimal.

UPGRADE 6
Turn decimal numbers into hexadecimal and be able to add three binary numbers together

UPGRADE 5
Add two binary numbers together correctly over a series of calculations and turn binary numbers into hexadecimal

UPGRADE 4
Turn decimal numbers into binary and binary into decimal
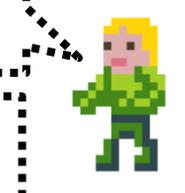
UPGRADE 3
Without help show how binary is used to represent decimal numbers

UPGRADE 2
With help write down the link between binary digits (1 and 0) and electrical current

UPGRADE 1
Name the method used by computers to understand instructions and user input

UPGRADE 9

Produced a detailed design document and user guide for the NASA Mars Rover Program, showing deep understanding of all code

UPGRADE 8

Extend the NASA Mars Rover Program beyond the original brief using additional broadcast and code for the samples list

UPGRADE 7

Independently, design, build and test a fully working NASA Mars Rover Program with all problems solved

UPGRADE 6

Make use of the broadcast function to improve communication of mission progress in the in the NASA Mars Rover Program

UPGRADE 5

Use more than one variable and/or list (e.g. samples, timer) in a program designed to solve a Mars Rover problem and successful use a list for collecting samples in the NASA Mars Rover Program

UPGRADE 4

Develop any working code to solve a problem for either the Mars Rover Test Sites or the NASA Mars Rover Program
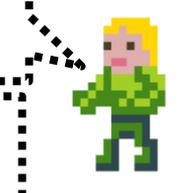
UPGRADE 3

Control the Mars Rover to do one of; stay in the test zone, collect samples, move automatically or collect rocks

UPGRADE 2

Control the Mars Rover's movement with any user input (keyboard or mouse)

UPGRADE 1

With help control the Mars Rover with at least 1 sequence of code

UNIT 6
COMPUTING IN THE WORLD

UPGRADE 9
Analyse the multiple train problem to develop a working model. Test, evaluate, refine the model, justifying your changes

UPGRADE 8
Analyse the train model and consider way to develop further. Test and evaluate the improved model.

UPGRADE 7
Without help design, develop and test the train model to ensure that it fully covers all the aspects of the real world system and is safe to use in the real world for all people

UPGRADE 6
Create a control system for the train module that uses sub-routines to make your program more efficient. Get some feedback and test the system before evaluating it fully

UPGRADE 5
Use a range of inputs /outputs successfully in the greenhouse model and evaluate. Think of improvements and then improve your model

UPGRADE 4
Design a flowchart to solve either the lighthouse of greenhouse using a model and evaluate the success
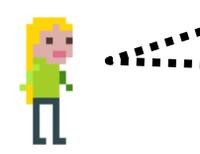
UPGRADE 3
Create a control system to solve one small problem for either the lighthouse or greenhouse and say how it has been successful

UPGRADE 2
Identify a few sensors and motors to be used in the smart home and say how they will work together to solve problems

UPGRADE 1
With help identify a sensor and motor to be used in the smart home and say how they will work together

UPGRADE 9
Explore and discuss why they are file size differences for a 300px by 300px coloured circle saved as a bitmap (.BMP) and a vector (.SVG)

UPGRADE 8
Explore how doubling the resolution for a 8px by 8px image would effect the look of the image and file size. Use an example and calculations to explain.

UPGRADE 7
Write a report on how image files are represented and affected by resolution (dpi) and colour depth using visual examples and worked calculations

UPGRADE 6
Research and compare Unicode against ASCII for representing text in computers. Research and compare lossy and lossless compression for storing image files in computers

UPGRADE 5
Explain what is ASCII, how it works and how it affects file size. Explain the difference between vector and bitmap images and how colour depth affects the size of bitmap images

UPGRADE 4
Convert file sizes (e.g. how many kB in 2 GB) and calculate the size of memory needed for images and/or visual displays

UPGRADE 3
Correctly order the file sizes from smallest to largest

UPGRADE 2
Show which files would be larger and with support write why those files would be larger

UPGRADE 1
Name types of files and the software that use them

UNIT 8
DESIGN A DIGITAL DEVICE

YR 7

YR 7

UPGRADE 9
Defend an ethical statement on the positive or negative implementations of either modern hardware or software

UPGRADE 8
Create a presentation to research the hardware needed for an Internet connection and how the protocols TCP, IP and FTP work

UPGRADE 7
Write a report and research how new technologies, hardware and software are changing people, communities and cultures

UPGRADE 6
Research how communication technologies impact home, work and leisure and other computing devices

UPGRADE 5
Describe alternative hardware and software (user interfaces) for the digital device and state why you have not used those alternatives

UPGRADE 4
Describe the hardware, software and connection selected within your digital device

UPGRADE 3
Identify the internal hardware used with a home computer system or your digital device

UPGRADE 2
With help for a range of hardware say which are input, output or storage devices and for software say what each application is used for

UPGRADE 1
Name types of hardware and software