

# Knowledge Progression for Computer Science and Computational Thinking Year 5

## Year 4

Design /develop an interactive game  
Put Code blocks into the right order for their game  
Use the *if/then/else* block correctly  
Keep track of random numbers and the score  
Integrate sound into their game  
Correct mistakes in their game

## Year 5

Create or select music for use in their coded game  
Use selection and repetition in their coded game  
Correct errors in their game  
Improve their game on the basis of the feedback they receive  
Add instructions to their game  
Compare and contrast Morse and semaphore with the internet  
Explain the algorithm for the Caesar cipher  
Decrypt messages using a general substitution cipher with an unknown key using frequency analysis

## Year 6

Record algorithms for random, linear and binary search  
Record an algorithm for sorting  
Record an algorithm for testing e.g. prime number or common factors  
Correct mistakes in commands typed in Python  
Draw a graph to show the locations in a text-based adventure  
Spot and correct syntax errors in Python print commands  
Use variables and if / elif / else selection in Python  
Define multiple procedures in Python, correctly observing the syntax rules  
Choose randomly from a Python list

## Vocabulary

Selection

Repetition

Variable

Algorithm

Semaphore

Morse code

Caesar cypher

Encryption /Decryption

# Knowledge Progression for Digital Literacy and Online Safety

## Year 5

### Year 5

Appreciate the importance of using encryption to keep information private and the need for strong passwords and https: to protect their identity.

They can act responsibly when creating web pages or writing blog posts.

Can understand the difference between acceptable and unacceptable behaviour when using digital technology.

Recognise that online behaviour can have real life negative effects on other people.

Understand that some people get paid to endorse products online.

Develop a discerning attitude to online content so that they can confidently reach their own conclusions.

Begin to understand how to manage their online reputation.

### Year 4

Can demonstrate that they can act responsibly when using technology, when developing computer games or prototype products or when using sampled music or creating a composition, including observing copyright and any terms and conditions.

They can contribute positively to a shared blog or wiki

Understand that online and peer pressure can be a positive and negative influence

Understand that although information posted on the internet might not always be true or accurate, it lasts forever.

Understand that virtual friends are still strangers that they do not know

### Year 6

Can discuss likely and potential consequences of their actions when using digital technology in a range of contexts

Can identify some principles underpinning acceptable behaviour when using technologies in a range of contexts.

Know about reporting buttons within websites and apps.

Understand the negative consequences of sharing nude selfies and learn that, sending, sharing and storing inappropriate images of Under-18s is a crime.

Develop confidence in saying no when they are posed with a request for inappropriate and/or indecent images of themselves.

Understand the risks involved with online gaming, including exposure to inappropriate content, grooming, bullying, trolling and the use of bribery tactics.

## Vocabulary

Encryption

https:

Copyright

Influencers

Endorsement

Report

Discerning

Online Reputation

# Knowledge Progression for Information Technology

## Year 5

### Year 4

Create a simple composition using sequencing software

Record and combine samples to produce a piece of music

Refine and develop their composition

Find and read an article on Wikipedia and evaluate an article for trustworthiness

Create content for a wiki /blog

Edit their own and others content

Edit the HTML for a web page

Use weather measurement equipment safely

Enter data into a spreadsheet to create simple charts

Take digital photos

Make predictions and present findings using presentation software

### Year 5

Create a tessellating pattern using simple and complex shapes with computer software or a website tool

Use repetition in a coding program to draw more complex geometric figures

Create a pattern using repeating, varied shapes

Can explain how a search engine creates an index from a cached copy of the web and uses this to select and rank results.

Create, and comment on, blog posts

Add an image, audio or video to a blog post or web page they have created

Create complex, compound objects using SketchUp or other 3D Software application

### Year 6

Shoot high-quality video footage, and use advanced features of editing software

Refine their storyboarding

Appreciate the difference between media, project files and exported movies

Use search facilities in a range of online reference tools to research a location

Compare different routes to a location

Learn about GPS and how this can be tracked on an online map

Combine written text about a visit or location with images and video

Use collaborative software to plan and create content for pages

Use identified characteristics to reflect on their own work

## Vocabulary

Tessellating

Search engine

Rank results

3d software design

Web page

Home page

Index