



Year 7 Computing Exam

Revision Booklet

First name

Last name



You will need a highlighter and a pen to complete this revision material.

When you see the below images, it means:



Read the section of information carefully and try to remember the information given ready for the test.



Complete the task relating to the information you have just read.



Internet Safety Revision

Read the text from the below fact sheet, then answer the tasks relating to the text you have just read.



Stay Safe Online

Remember the 5 SMART rules when using the Internet and mobile phones.

- S - SAFE:** Keep safe by being careful not to give out personal information when you're chatting or posting online. Personal information includes your email address, phone number and password.
- M - MEET:** Meeting someone you have only been in touch with online can be dangerous. Only do so with your parents' or carers' permission and even then only when they can be present.
- A - ACCEPTING:** Accepting emails, IM messages, or opening files, pictures or texts from people you don't know or trust can lead to problems – they may contain viruses or nasty messages!
- R - RELIABLE:** Someone online might lie about who they are, and information on the internet may not be true. Always check information with other websites, books or someone who knows.
- T - TELL:** Tell your parent, carer or a trusted adult if someone or something makes you feel uncomfortable or worried, or if you or someone you know is being bullied online.

Cyberbullying - Where someone intimidates or makes someone feel bad over an electronic device, such as a Mobile phone or the Internet.

CEOP - CEOP stands for Child Exploitation and Online Protection Centre (UK). This is whom you should contact if you are getting cyberbullied.

Phishing - The fraudulent practice of sending emails claiming to be from trustworthy companies in order to induce individuals to reveal personal information, such as passwords and credit card numbers.

Online dangers - Situations that could be harmful to you that can arise from using online methods of communicating with others. These could be physical or psychological

Privacy Settings - Where someone intimidates or makes someone feel bad over an electronic device, such as a mobile phone or the Internet.



Trolling - Someone who posts inflammatory, unnecessary, or off-topic messages in an online community, such as a forum, chat room, or blog, with the main intent of provoking readers into an emotional response or of otherwise disrupting normal on-topic discussion.



Task 1

Give four tips on how to stay safe online while using social media.

Tip 1.....

Tip 2.....

Tip 3.....

Tip 4.....



Task 2

What is the name of the company that you can contact when you are being cyberbullied?

.....

In your own words, explain what cyberbullying is:

.....

Passwords

Passwords should be kept secure at all times, this means you should **NEVER** write it down anywhere. Make sure that you choose a password that you will always remember.

Have a few different passwords for your online accounts. This will make sure that if a cyber-criminal gets hold of one, this will not be the key to unlock all your others. You should try to change your password on a regular basis, this will ensure it's extra safe from anyone who may potentially get hold of it and then act fraudulently with your personal details. A secure password should be:

- Alphanumeric – consisting of letters and numbers
- At least six characters long
- Use upper and lower case characters
- Be memorable!

A good example would be to choose three random (memorable) words and a number, such as **7PurpleHouseCats**

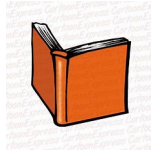




Task 3

Write out 3 different examples of strong passwords (not ones you will use though!)

- 1.....
- 2.....
- 3.....



Using Email

Emails are a very useful tool to have and use. At school we use Outlook. One of the main advantages of email is that you can quickly and easily send electronic files such as documents and photos to several contacts simultaneously by attaching the file to an email. Below is some information about some of the basic tools in Outlook and what they do.

Compose a New E-mail Message

This is when you are writing a new email message to a recipient. Simply click new Email. This will open up a new window ready for content of the email to be entered.



Reply to an E-mail Message

This will send the received message alongside your response so that the communication between you and the sender can be continued.



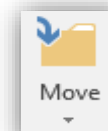
Forward an E-mail Message

This re-sends the selected message to whomever you have chosen to forward it to, this is usually someone else besides the sender.



Move an Email into a folder

This feature allows you to organise your emails into folders. If you click on move it will come up with a list of your created folders and you can pick where to place it.



Task 4

What are two benefits of using email to communicate?

- 1.....
- 2.....



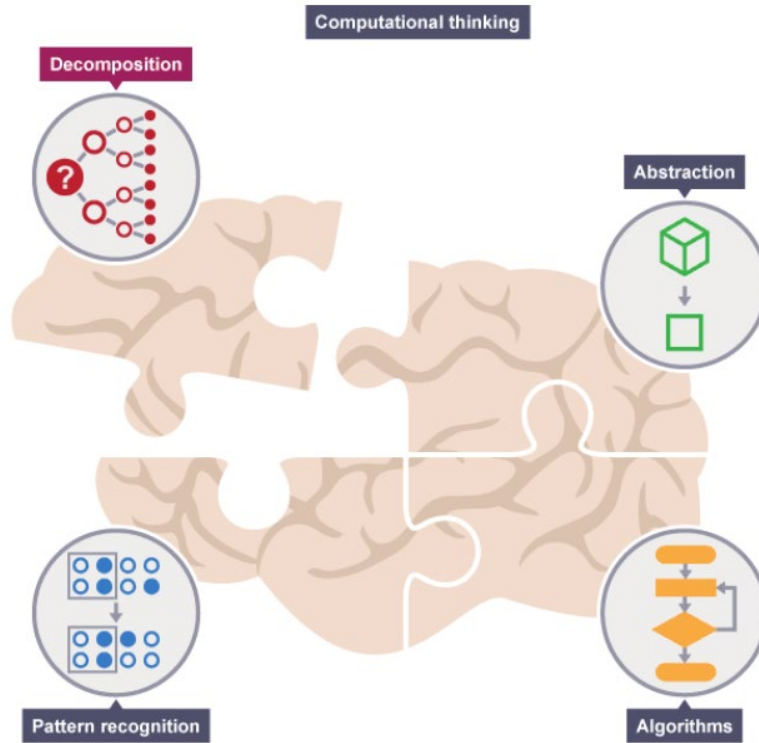


Computer Science Revision

Computational Thinking

Read through the below information.

The four cornerstones of computational thinking are:



Decomposition

Breaking a larger problem down into smaller more manageable tasks.

Abstraction

Focusing on the important information only, ignoring irrelevant detail.

Pattern Recognition

Looking for similarities among and within problems.

Algorithmic Thinking

Developing a step-by-step solution to the problem, or the rules to follow to solve the problem.



What is an algorithm?

Algorithms are one of the four cornerstones of Computer Science. An algorithm is a plan, a set of step-by-step instructions to solve a problem. If you can tie shoelaces, make a cup of tea, get dressed or prepare a meal then you already know how to follow an algorithm.

In an algorithm, each instruction is identified and the order in which they should be carried out is planned. Algorithms are often used as a starting point for creating a computer program, and they are sometimes written as a flowchart or in pseudocode.

Computers are only as good as the algorithms they are given. If you give a computer a poor algorithm, you will get a poor result – hence the phrase: ‘Garbage in, garbage out.’

Algorithms are used for many different things including calculations, data processing and automation.



Task 4

From the above text, highlight all the information that relates to what an algorithm is used for.

What is pattern recognition?

When we decompose a complex problem we often find patterns among the smaller problems we create. The patterns are similarities or characteristics that some of the problems share.

Pattern recognition is one of the four cornerstones of Computer Science. It involves finding the similarities or patterns among small, decomposed problems that can help us solve more complex problems more efficiently.



What are patterns?

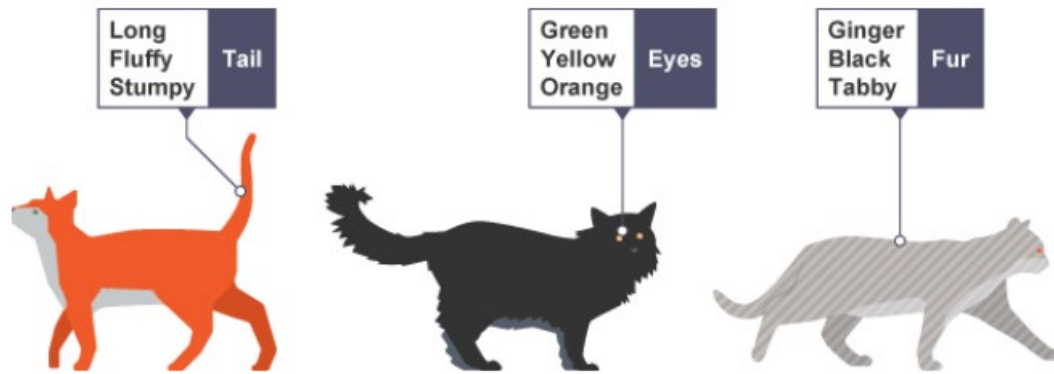
Imagine that we want to draw a series of cats.

All cats share common characteristics. Among other things they all have eyes, tails and fur. They also like to eat fish and make meowing sounds.

Because we know that all cats have eyes, tails and fur, we can make a good attempt at drawing a cat, simply by including these common characteristics.

In computational thinking, these characteristics are known as patterns. Once we know how to describe one cat we can describe others, simply by following this pattern. The only things that are different are the specifics:

- one cat may have green eyes, a long tail and black fur
- another cat may have yellow eyes, a short tail and striped fur



Task 5

Highlight all the information from the above text that refers to why we need to look for patterns in problems and how it helps us to problem solve.

Task 6

*Create a **mind map** on the **next page** that shows your understanding of the four cornerstones of computational thinking.



Area for mind map drawing.

A large, empty rectangular box with a black border, intended for drawing a mind map.



Scratch Programming

Scratch is a programming language that makes it easy to create interactive stories, animations, games, music, and art, and share your creations on the web. Scratch uses Blocks. If a programming language comprises blocks and nested blocks, it is called a **block-structured programming language**.

Types of Block in Scratch

Scratch gives you ten categories of block, each of which includes a number of blocks you can use to do similar jobs. Some of these are:

- **Motion** - Motion blocks are what you use to place your sprites on the stage or move them. They are dark blue. You can only use motion blocks with sprites, not with the stage.
- **Looks** - Looks blocks are coloured purple, and they control what your sprites and backdrop look like, how big they are, and whether they are displayed in front of or behind other assets. Looks blocks also include blocks that let you display text.
- **Sound** - These blocks allow you program sound so that you can attach these to your sprites. These blocks add a more interactive affect to the game for the user.
- **Control** - Control blocks let you control the blocks within your scripts, inserting conditional statements, loops, repeats and pauses. They can make your code much more efficient, and can be very powerful when combined with variables and/or operators.
- **Sensing** - Sensing blocks are coloured light blue. They let you identify what's happening at a given point and make your sprites or background respond.
- **Operator** - Operator blocks let you make comparisons between or perform arithmetic functions on different values and can be used in conjunction with data blocks or sensing blocks among others.

Task 7



Write out what the variables and the sound blocks do in your own words below:

Variable

.....
.....
.....