Computing — Year 4 (Spring)

Computational Thinking and Programming
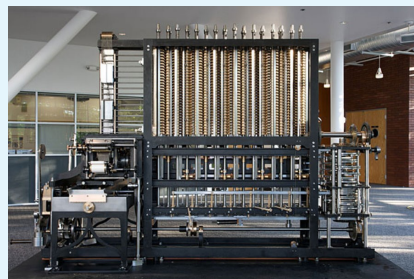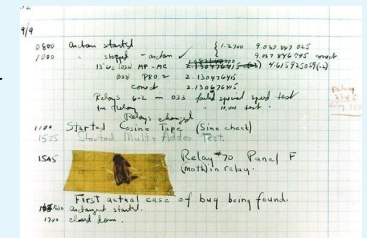
Key vocabulary to remember and use in your learning

decomposition	breaking down a problem into small pieces to make it easier to solve and debug
input	information sent (typed or clicked) into a computer for processing
output	what the computer does with the input
coordinates	where a sprite is on the 'stage' on Scratch
email	electronic mail—a message sent through the internet
computer virus	code that can make something bad or unwanted happen to a device
download	something moved from the world wide web to a home device
financial	related to money

Key knowledge to know and use

- We should decompose problems to make them easier to solve; this also helps when we debug as it makes errors easier to spot
- An event is an action that a computer can identify: an input like a keystroke or mouse click; or something within a program
- We can use different events or inputs to control a program
- Co-ordinates tell us where a sprite is and can be used to move one too
- We write an algorithm that makes a computer draw a picture
- Different events can make different things happen
- A computer virus can be sent by email or other message; alternatively, it can be downloaded from the internet when you click on a link or download any content

Why do we call something that goes wrong 'a bug'?

The first computer 'bug' was identified in 1947 as a dead moth. At 3:45 pm, Grace Murray Hopper records 'the first computer bug' inside the Harvard Mark II computer's log book. The problem was traced to a moth stuck between relay contacts in the computer, which Hopper duly taped into the Mark II's log book with the explanation: "First actual case of bug being found."

Online Safety—Suspicious messages

Computer viruses can be sent via email, message and from files downloaded from the internet. Often the reason for this is financial—to take money from you. It is important to be suspicious of any messages you receive.

The Difference Engine

Charles Babbage's Difference Engine no.2 was designed but never built in the 1840s. Having since been made from the original design, it weighs 5 tonnes, is 11 feet long and 7 feet high. It was designed to tabulate logarithms and trigonometric functions.