KNOWLEDGE NUGGET: DAY 2 - BINARY 101	
Topic	Networks

Learning objectives	Success criteria

Students will…
• be introduced to Networking and gain a basic understanding of:
  ○ how devices are linked together and communicate
  ○ Internet Protocol (IP) Addresses
• learn the difference between Decimal and Binary numbers
• learn how to convert Binary to Decimal and vice versa
• take part in a binary challenge
	- Watching and understanding the video in its entirety.
	
	- Participating in the group binary challenge and follow on discussions.

Resources	**Suggested use of teaching time**
- Knowledge Nugget Video - Printable worksheet	Video – 10 minutes Binary Challenge – 5 Minutes (introduced as part of the video)

Learning activity

The video will introduce networking, IP addresses and decimal and binary numbers. The knowledge nugget video will talk through what an IP address does and why it is formatted in a particular way. Decimal and binary numbers will be introduced including the link to bits and bytes.

This session will talk through how to convert binary numbers to decimal and vice versa. The teacher can pause the video during this phase to allow students to have a go themselves or wait until the Binary Challenge towards the end of the video (see worksheet):

- Convert 99.86.111.46 to binary
- Convert 00001101 11100000 11100110 00100101 to decimal

Please note that the correct answers and walkthrough are provided as part of the Day 5 knowledge nugget video.

Evaluation and next steps

Websites:

https://www.bbc.co.uk/bitesize/guides/zwsbwmn/revision/1 BBC Bitesize - introduction to binary

https://www.sciencefriday.com/educational-resources/write-your-name-in-binary-code/ Learn how to write your name in binary code

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https://www.ncsc.gov.uk/cyberfirst/girls-competition to register for the next CyberFirst Girls' Competition.

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