



COMPUTING AT UPLANDS

**Computational Thinking, The National Curriculum
and Uplands Computing Provision**

Why is computing so important?

- **Enjoyment and personal development**

Embracing creativity, wide range of applications, understanding the technology they use every day

- **Job prospects & requirements**

More and more fields are viewing coding/computing skills as highly positive and necessary. The transferrable skills can be incredibly useful in many different areas. (Digital careers showing almost double the growth of most other industries)

- **Cross-curricular links**

English, Maths, Science, Design & Technology, PSHE & RHE etc.

The Uplands Curriculum Journey – Year 6 Leavers

**Great
computational
thinkers**

Confident
technology users,
able to discuss,
understand and
use computing in a
wider, real-world
context

Responsible,
competent,
knowledgeable
and creative

Excited to continue
their computing
journey into
secondary school
and beyond

The Uplands Curriculum Journey

Teaching Units

Programming 2 units per year	Digital Media 2 units per year	Computer Systems & Networks 1 unit per year	Data & Information 1 unit per year
<ul style="list-style-type: none">- Wide range of languages and programs- Plugged and Unplugged- Computational thinking	<ul style="list-style-type: none">- Many different programs, processes and outputs- Very cross-curricular- Word processing, audio/video creation and editing, research and presentation	<ul style="list-style-type: none">- The Internet, networks, hardware and software- Understanding the technological world around them	<ul style="list-style-type: none">- Creating, storing, sorting organising, analysing and presenting data and information

How do we teach Computing at Uplands?

Key Concepts

Be explicit with computational thinking skills

Plugged and Unplugged (pack, unpack, repack – transferrable skills)

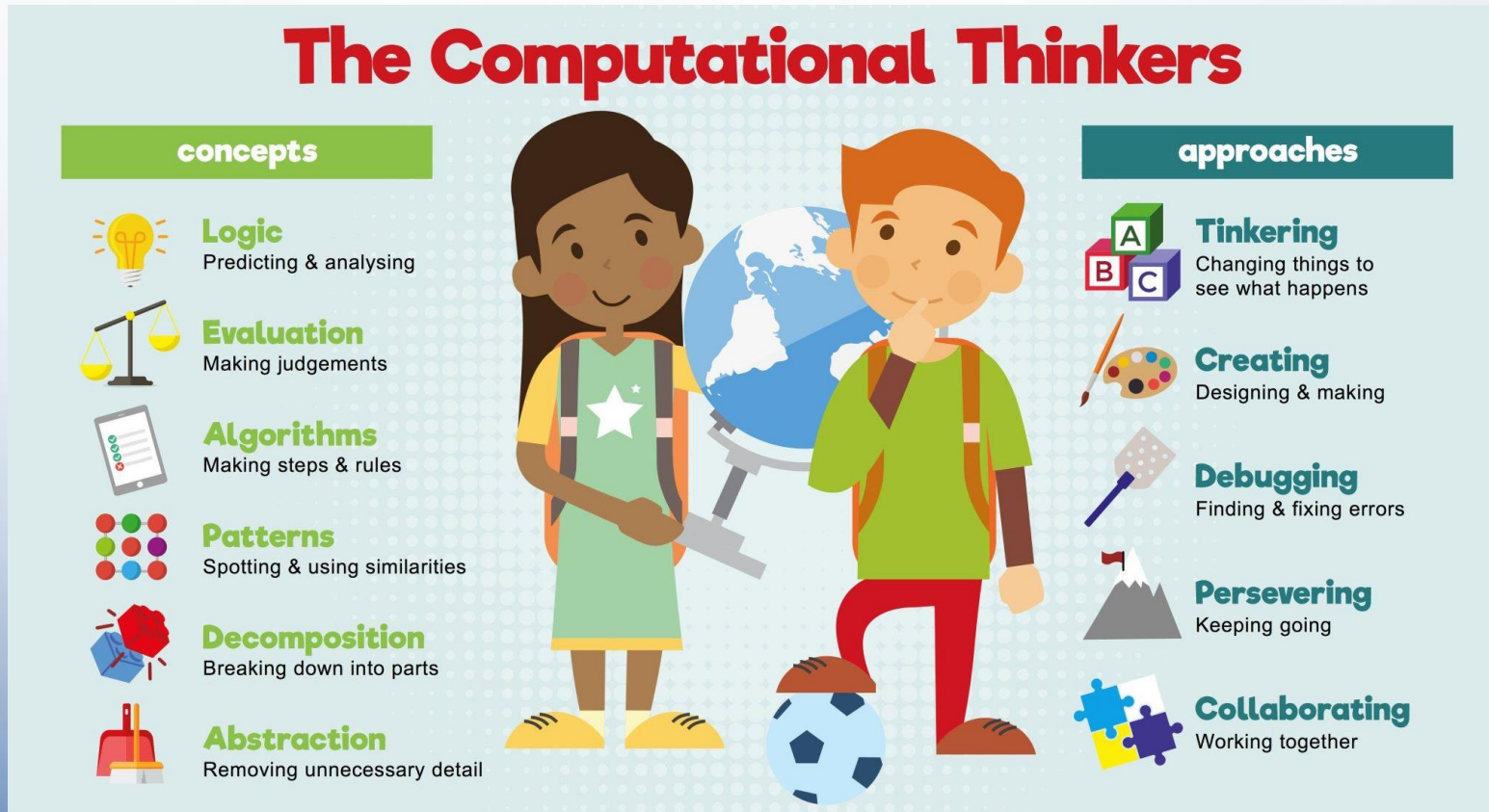
Computing is not just used or taught in computing lessons

Encourage and nurture experimentation and creativity – *no wrong answers, just learning points*

The background features a blue gradient with decorative circuit-like lines in the corners. These lines are composed of straight segments and small circles, resembling a stylized PCB or network diagram. The lines are light blue and extend from the corners towards the center of the page.

Most of our work is on developing our Computing curriculum outside of actually using computers.

The Heart of Computing at Uplands: Computational Thinking



Coding programs, apps and languages are just vehicles for the transferrable computational thinking skills that are essential.

The Heart of Computing at Uplands: **Computational Thinking**

By taking these concepts with them between **plugged** and **unplugged** activities, **packing** and **unpacking**, the children will deepen their understanding and be able to easily identify opportunities to use them

concepts



Logic

Predicting & analysing



Evaluation

Making judgements



Algorithms

Making steps & rules



Patterns

Spotting & using similarities



Decomposition

Breaking down into parts



Abstraction

Removing unnecessary detail

The Heart of Computing at Uplands:

Computational Thinking - Activities

concepts



Logic

Predicting & analysing



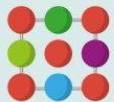
Evaluation

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Scientific predictions (experimentation and activities), Sudoku, crosswords, puzzles

Making comparisons, evaluating work/performance on criteria, would you rather?

Creating and editing highly specific instructions, rules, maps, recipes etc.

Numerical patterns, social patterns (if I do this, what happens etc.), spot the difference/similarity between a variety of items/images

Creating to-do lists/breaking larger jobs into series of smaller ones

Transportation maps, riddles & word problems

Computing at Home



Continue packing and unpacking

- Think about unplugged activities (as well as using technology if you have access to it)



Use computing vocabulary (Computational Thinking concepts and approaches)



Computing challenges



Discuss current units (all information on LTP)

- Resources are readily available to better understand the concepts and programs we use

Computing at home – Some resources

Document pack

- Computational thinking, School Long Term Plan, National Curriculum Objectives

Barefoot Computing

- Activities, Ideas, Information & Courses
- <https://www.barefootcomputing.org/primary-computing-resources>

Games

- Lightbot, Fix the Factory

NCCE (National Centre for Computing Education)

- Activities, Projects, Progression
- <https://teachcomputing.org/curriculum>

BBC Bitesize

- Games, Videos, Articles
- <https://www.bbc.co.uk/bitesize/subjects/zvnrq6f>

Uplands Dropbox Folder

- Program files, Useful links, Computing Challenges
- <https://www.dropbox.com/sh/rwtgrr7dvyv19g7/AAAM6Csgx33Y68tqMPwkSpu1a?dl=0>

Ask us!

Questions