



# SKILLS FOR THE 21<sup>ST</sup> CENTURY

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# This is about the pupils!

*“Pupils are now ready to use their IT skills to enhance their learning”*

- What does this mean?
  - *Use Cahoot*
  - *Watch a YouTube*
  - *Make a video*
  - *Program a robot*
- It means all of the above but we must ensure that:
  - *We promote independent learning and responsibility*
  - *We prepare our pupils as best we can for their future with technology.*
  - *Do not neglect the basics – remember we still teach to read and count*

# Curriculum

- In many schools the curriculum has changed over recent years
- We are asked to cover more content in either the same or less time!
- BUT .. for independent schools the ISI framework has sharpened leadership team focus on IT skills **of pupils** in section A5.
- How can we deliver these skills?
- What in fact are these skills:
  - *do they include computational thinking?*
  - *do they include e-safety and digital citizenship?*

# What to teach?

## Four Core Modules

- **Device Management**

*Setting up and maintaining a device. Including cloud storage, back-up, device security and useful basic skills*

- **Software**

*Basic Office skills which make them efficient users of IT*

- **Cyber security and e-safety**

*Staying safe online, use of social media, data protection, computer misuse*

- **Coding and Computational Thinking**

*Principles of coding*

# Why teach skills?



# Be an expert not a victim



# When do we teach these skills?

**AT (OR JUST BEFORE) THE POINT OF NEED!**

What do I mean? ... here are some examples:

Year 9: Word skills (columns, tables, content pages, footnotes and styles) for geography and History projects.

Year 7 and 8: Social media use, AUP, coding.

Year 12: BYOD as they need device management skills to cope with the technology

# Timetable

- **Year 7:** 2 x 55 minutes every two weeks (one with 2 teachers and the other with 1 teacher)
- **Year 8:** 1 x 55 minute lesson every two weeks (2 teachers)
- **Year 9:** No allocation but we see them for 3x 55 minutes during the year
- **Years 10 and 11:** No allocation although we do offer iGCSE Computer Science and see them for 1 x 55 minute lesson in the year.
- **Year 12:** 3 A levels and the further maths Block 4. Boys attend 3 compulsory BYOD sessions in the year in block 4.
- **Year 12:** Block 5 which is A level+ (e.g. EPQ). Here there is the opportunity to teach more advanced programming, e-commerce, mobile phone app design modules. This has 3 X 55 minute session every two weeks – one lesson double staffed and there is homework.
- **Year 12:** Liberal Studies they can choose any module.
- **Year 13:** Liberal studies they can choose a module.

# How to deliver skills?

- Project with City of London and St Albans High School for Girls
- <http://learninformatics.co.uk/login.asp>
- It is not the only solution but the key concepts are:
  - *Track pupils skills*
  - *Have evidence of skill use*
  - *Work independently*
  - *Tasks should be easily “assessed”*
- Includes booklet, files, coursework monitoring
- Not just Core Modules but more advanced skills for example:
  - *JavaScript*
  - *Game Design*
  - *Database, SQL, asp, ajax*
- Mathematical concepts of encryption, shortest path algorithms, robotics and AI, Google PageRank algorithm.

## Core Modules



### Device Management

67% complete



### Software Fundamentals

28% complete



### Cyber Security and eSafety

17% complete



### Coding and Computational Thinking

21% complete

## Additional Modules



### Programming and Control

0% complete

## Device Management

Here are the downloads you will need for this module:

Task Booklet: [download](#)

Exercise Files: [download](#)

Marking Engine: [download](#)

Task	Done	Video	Assessment Type
<b>Initial Device Set Up</b>			
New Device Set-up*	x	-	Teacher Assessed
<b>Backup and Recovery</b>			
Restore Points*	x	<a href="#">Video</a>	Teacher Assessed
BackUp*	x	<a href="#">Video</a>	Teacher Assessed
<b>Device Settings</b>			
Account Settings	✓	<a href="#">Video</a>	Marking Engine
Sign-In Options	✓	<a href="#">Video</a>	Marking Engine
Machine Specification	✓	<a href="#">Video</a>	Marking Engine
Connectivity	✓	<a href="#">Video</a>	Marking Engine
Operating System	x	<a href="#">Video</a>	Marking Engine
<b>Installing Software</b>			
Productivity Software	x	<a href="#">Video</a>	Marking Engine
Software Updates*	x	<a href="#">Video</a>	Teacher Assessed
Desktop Personalisation	✓	<a href="#">Video</a>	Marking Engine
The Cloud	✓	-	Marking Engine
Copying Files	✓	<a href="#">Video</a>	Marking Engine
<b>Using My Device</b>			

Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	Complete	
George Angel	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	
Tom Byars	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Daniil Ivanov	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Vincent Liu	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	
Matthew McKendrick	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗	✗	✗	
Jonathan Nicoll	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	
Hamza Rehawi	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Josh Rowing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Luke Sanmoogan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	
Konstantine Siokos	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Xander Tuck	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

### Skill List

- 1 Set time and date on a device
- 2 Add a second language
- 3 Set power save settings
- 4 Set screen brightness
- 5 Turn off notifications
- 6 Check OS license
- 7 Check version of OS
- 8 Set up sign in options
- 9 Set up a basic user and guest user account
- 10 Connect an account to a personal email
- 11 Switch between accounts
- 12 Take a picture with a camera or device and use it for your account
- 13 Find how many internal drives a machine has
- 14 Find how much storage is left
- 15 Find the type of processor a machine has
- 16 Find the name of the device
- 17 Find how much primary memory a device has
- 18 Find the IP address of a device
- 19 Connect external storage and find its drive letter
- 20 Find external ports
- 21 Connect a bluetooth device
- 22 Ensure the operating system is up to date

# It's not VR - what we actually do!

- BEBRAS
- Sway
- Micro:bit
- PyGame
- Google Problems
- Schemes of Work

# Questions for discussion

- What do you think ISI want in A5?
- How do you track skills progress?
- Should we teach skills or just let them fend for themselves?