



Communicating CS In Schools

Jack Morrison



Where did I teach?



THE COOPERS' COMPANY
AND COBORN SCHOOL

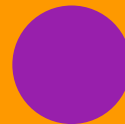
Love as Brethren



Upminster, Essex



Academy School



Co-Educational



"Good" - OFSTED

Who did I work with?



Mr S



Year 10s



Python
Lessons



Mrs F



Years 7-11



Programming
Club

What did I **teach?**

**Python
Lessons**

Year 10

01

**Programming
Club**

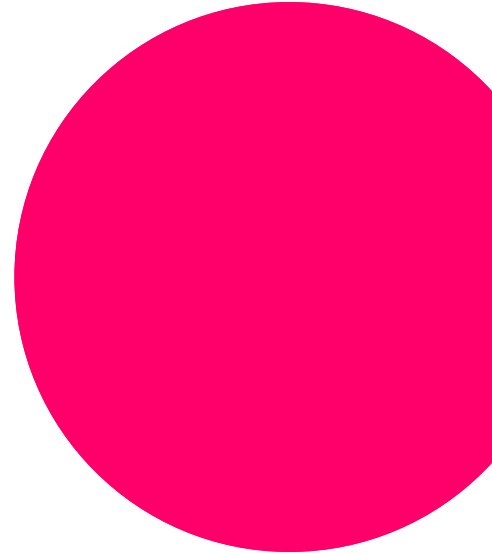
Years 7-11

02

**Lectures About
University**

Sixth Form

03





01: Python



What was my
main **teaching
project?**

Aim: Improve the Year 10s' Python skills

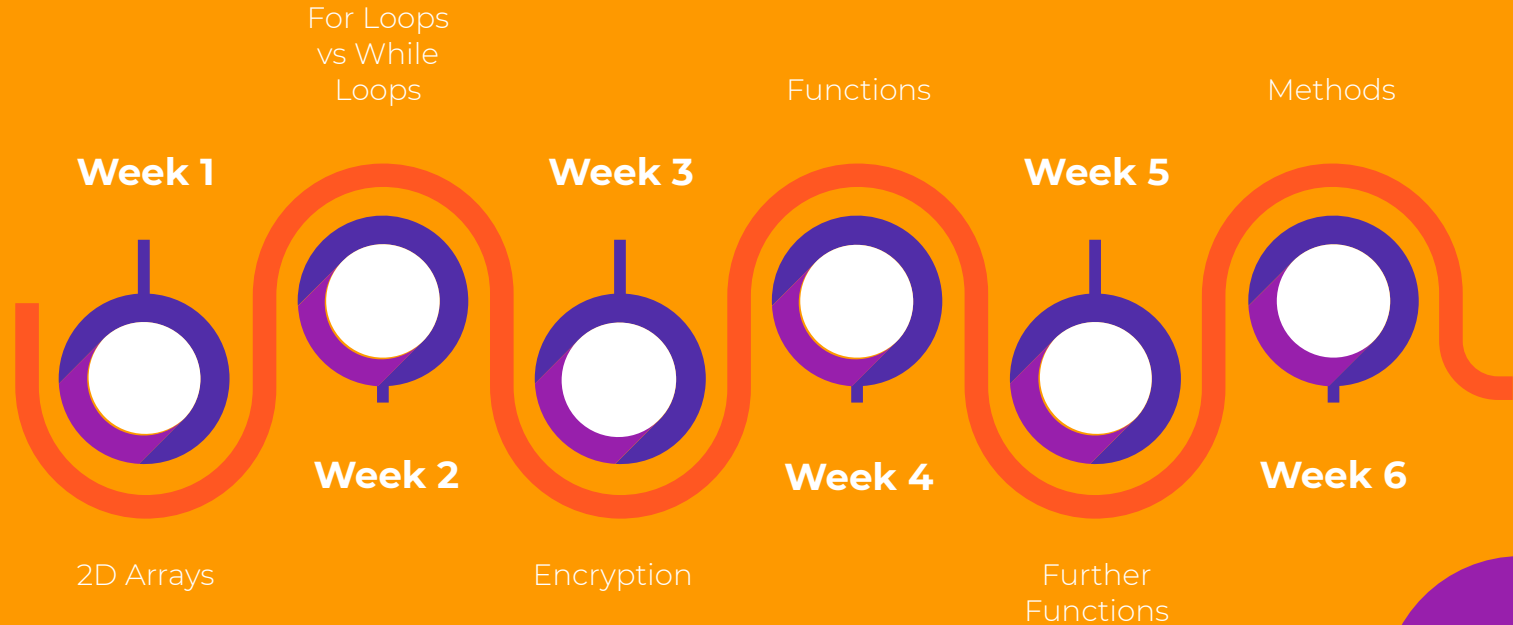
Students: Year 10 class

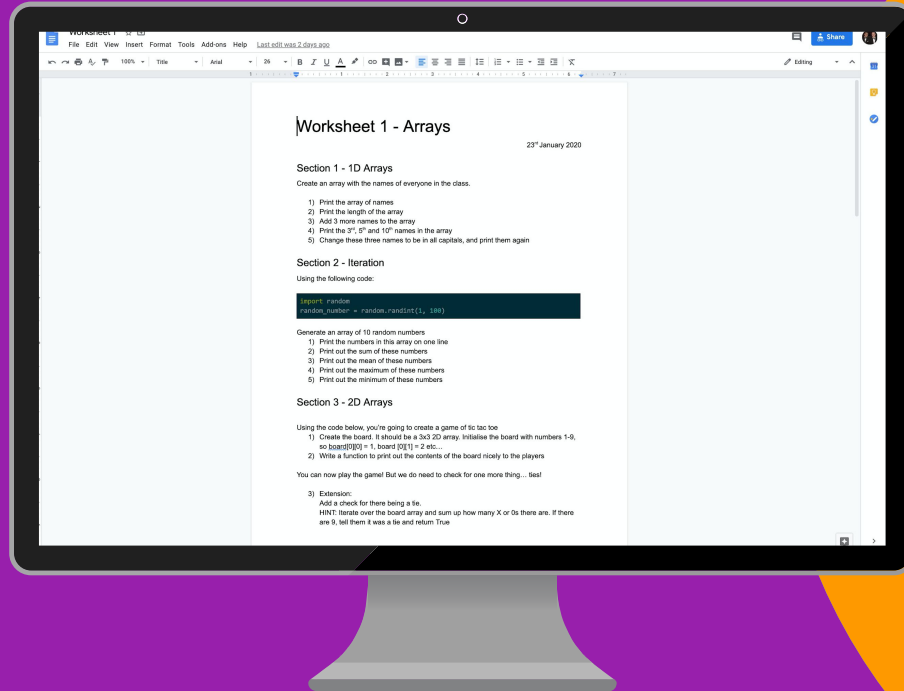
Existing Skills: *Limited* Python lessons

Teaching Approach



Teaching timeline



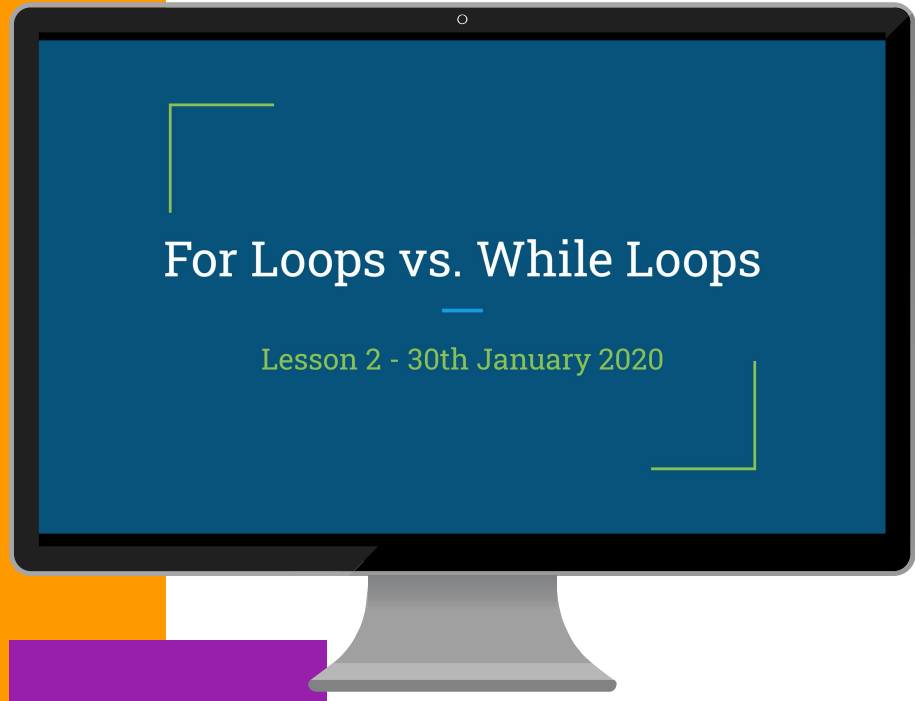


Week 1 - Arrays

- Presentation
- Worksheet
- Kahoot (feedback)

Week 2 - For Loops vs While Loops

- Presentation
- Interspersed worksheet questions



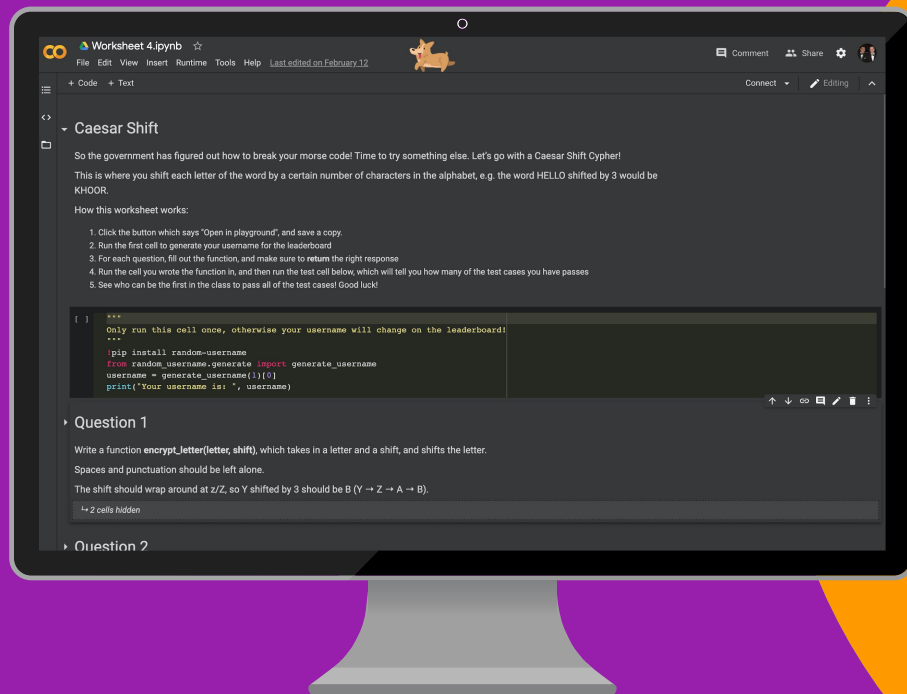


Week 3 - Encryption

- Quiz on last week's materials
- Shorter presentations

[1] <https://www.lexialearning.com/blog/how-motivate-students-using-competitive-and-collaborative-activities>

[2] <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0085434>

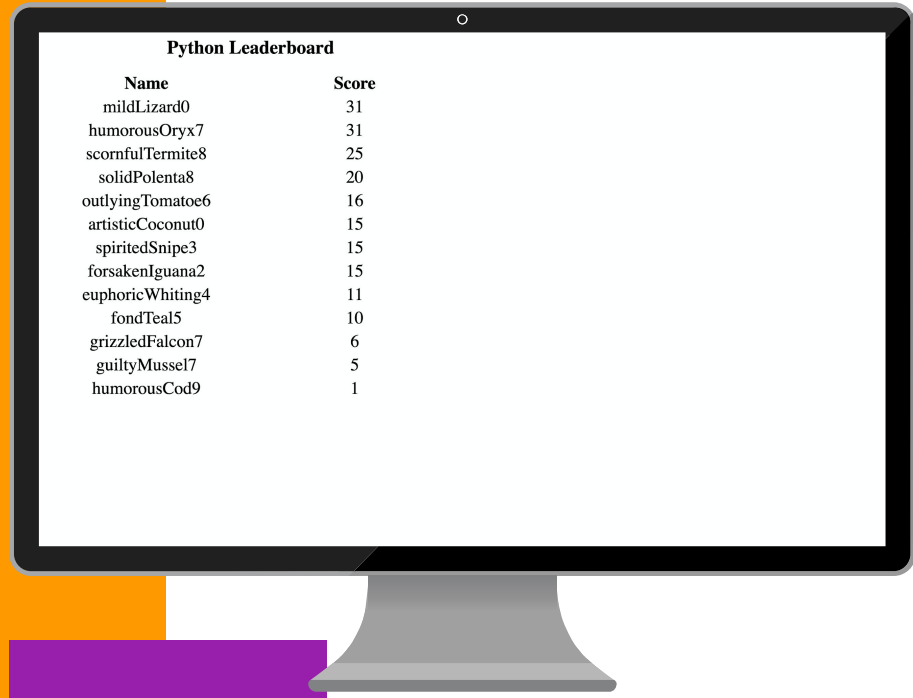


Week 4 - Functions

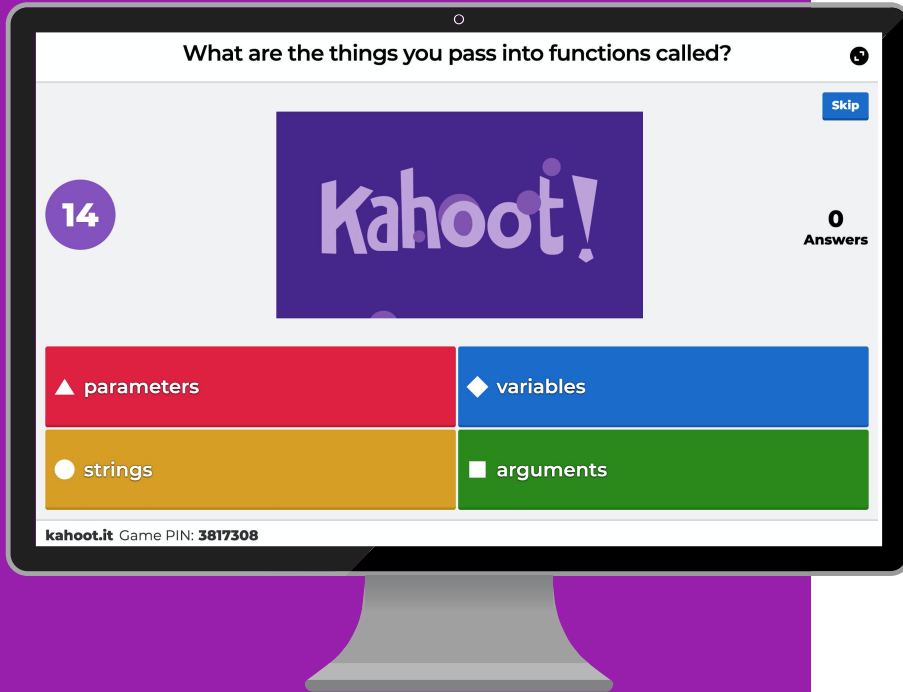
- Functions presentation
- Google Colab
- Class Leaderboard
- Difficult worksheet

Week 5 - Further Functions

- More visual presentation on functions
- Easier/shorted worksheet questions



Name	Score
mildLizard0	31
humorousOryx7	31
scornfulTermite8	25
solidPolenta8	20
outlyingTomatoe6	16
artisticCoconut0	15
spiritedSnipe3	15
forsakenIguana2	15
euphoricWhiting4	11
fondTeal5	10
grizzledFalcon7	6
guiltyMussel7	5
humorousCod9	1



Week 6 - Methods

- Kahoot on key course content
- Lesson content based on student feedback



02: Programming Club



~20 Students

each week at lunch time

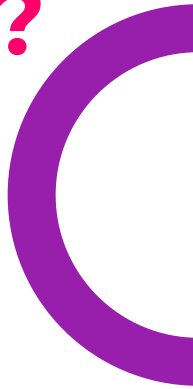
Years 7-11

working on any kind of programming

Many Topics

From Python, to Scratch, to HTML, to 3D Printing...

**What was
Programming
Club?**



Why did I help out in programming club?

01

Meet more students

02

Practice teaching
techniques

03

Help students with an
interest in computing

04

Teach different
materials



03: Lectures about Uni





What I study



Getting into Uni



University Life



Uni vs Sixth Form



**What did I
talk about?**

Review



What did (& didn't) go to plan?



They
Learned
Something!



Lesson
Planning



They want to
study
Computing

Intelligent
Students

Range of
Interests

CS in **Schools**
vs at **Uni**

What was
surprising?

What was challenging?

Engagement



Easier
Questions &
Competition

Feedback



In **Person** >
Online

Differing **Skill**
Levels



Feedback &
Practice

Key Learnings

1. **Interested** students learn **better**
2. You **can't** make **everyone** passionate about CS
3. Teaching is **hard**



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Thanks for listening

Any Questions?

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