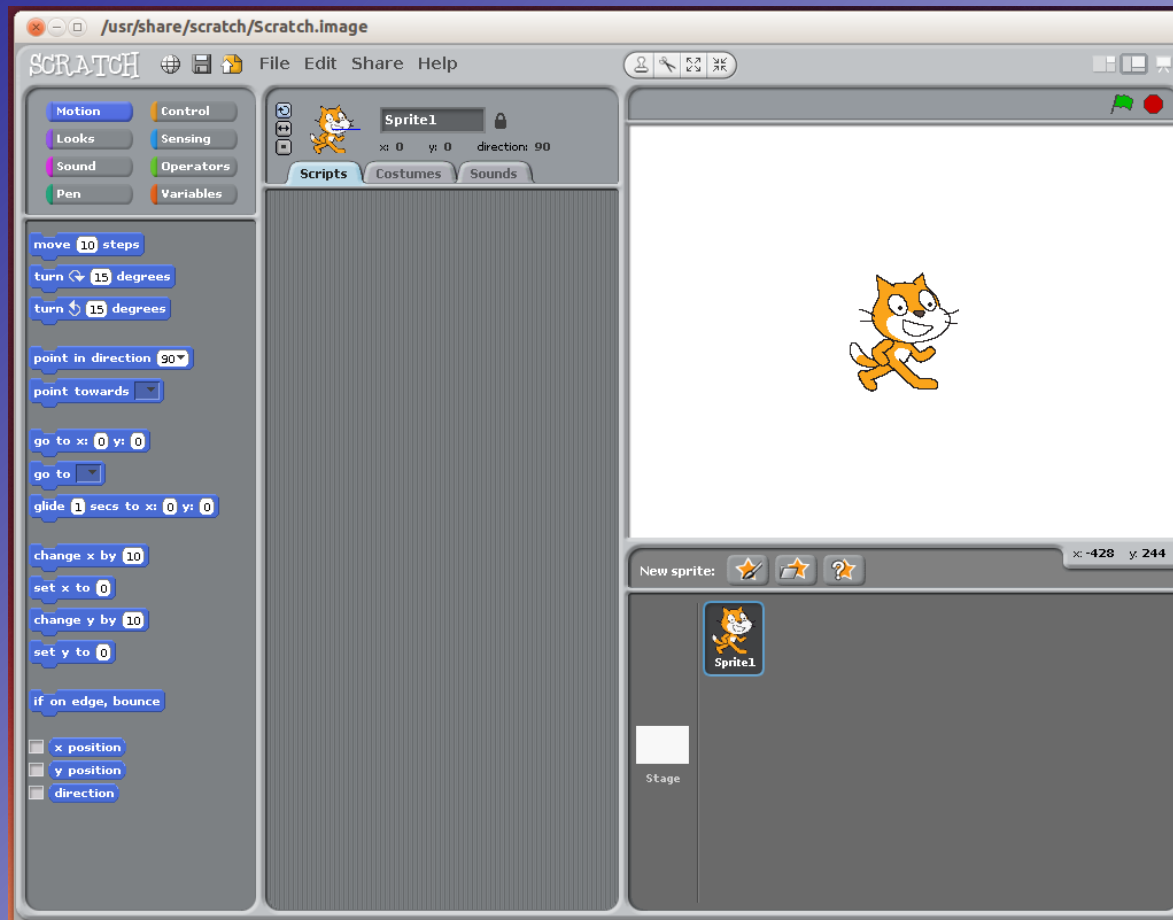# Programming Scratch for Primary Schools

Stewart Watkiss

- STEM Ambassador

- Data Centre Manager for AT&T

- Programming for about 20 years

- Volunteer with Code Club

- Involved in several Raspberry Pi projects

  – Own projects on PenguinTutor.com

  – Technical Book Reviewer for
    Learn Raspberry Pi with Linux

Learning Scratch

- What is Scratch?

- Finding your way around Scratch?

- Programming techniques

  - Sequence

  - Selection

  - Repetition

- Variables

- Additional Scratch information

First look at Scratch (v1.4)

First look at Scratch (v2)

Programming techniques

- Sequence

- Selection

- Repetition

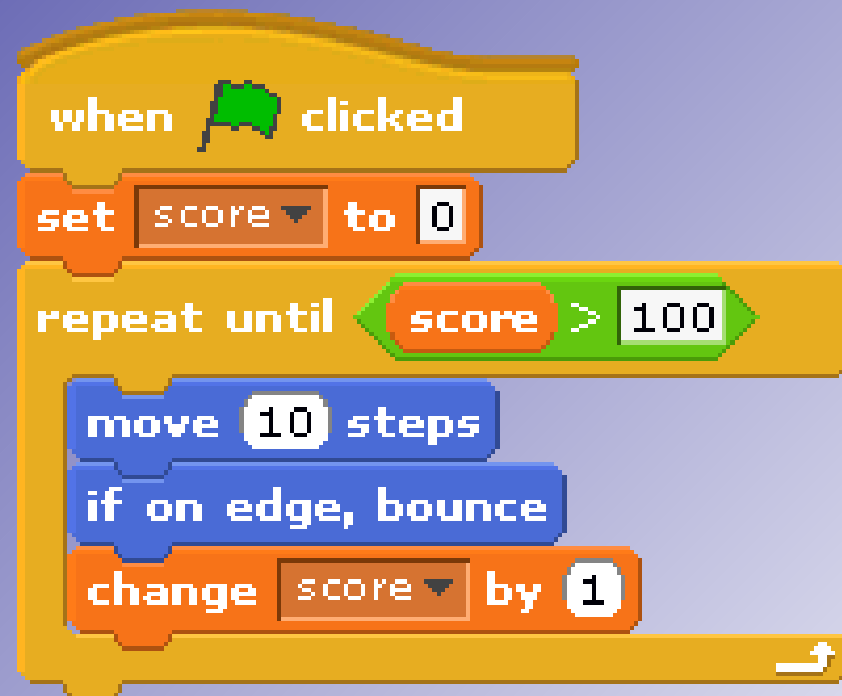- Variables

Sequence

Selection

```
if  < score > 10 >
    say  Well done! You win!
```

```
if  < touching edge ? >
    say  You reached the end of the screen
else
    move 10 steps
```
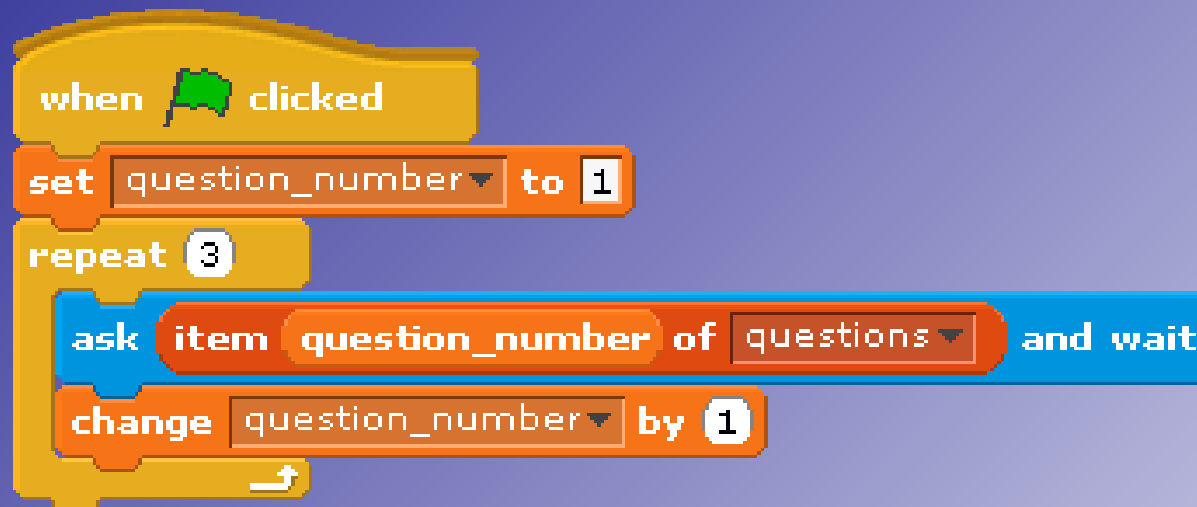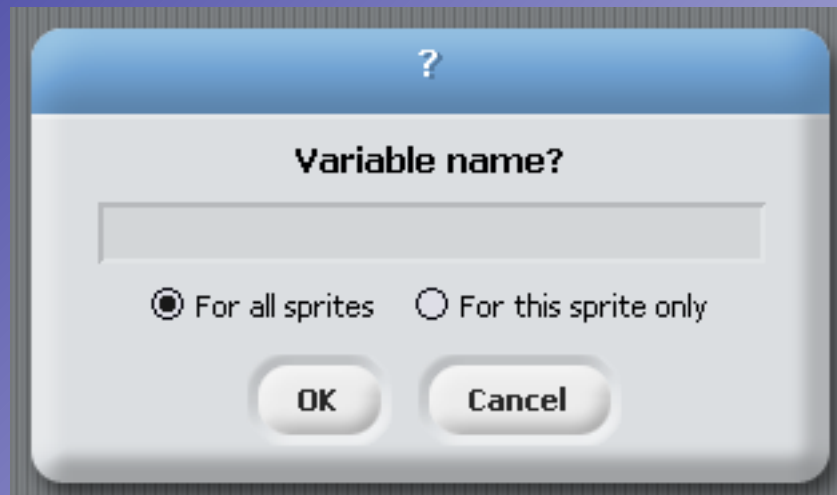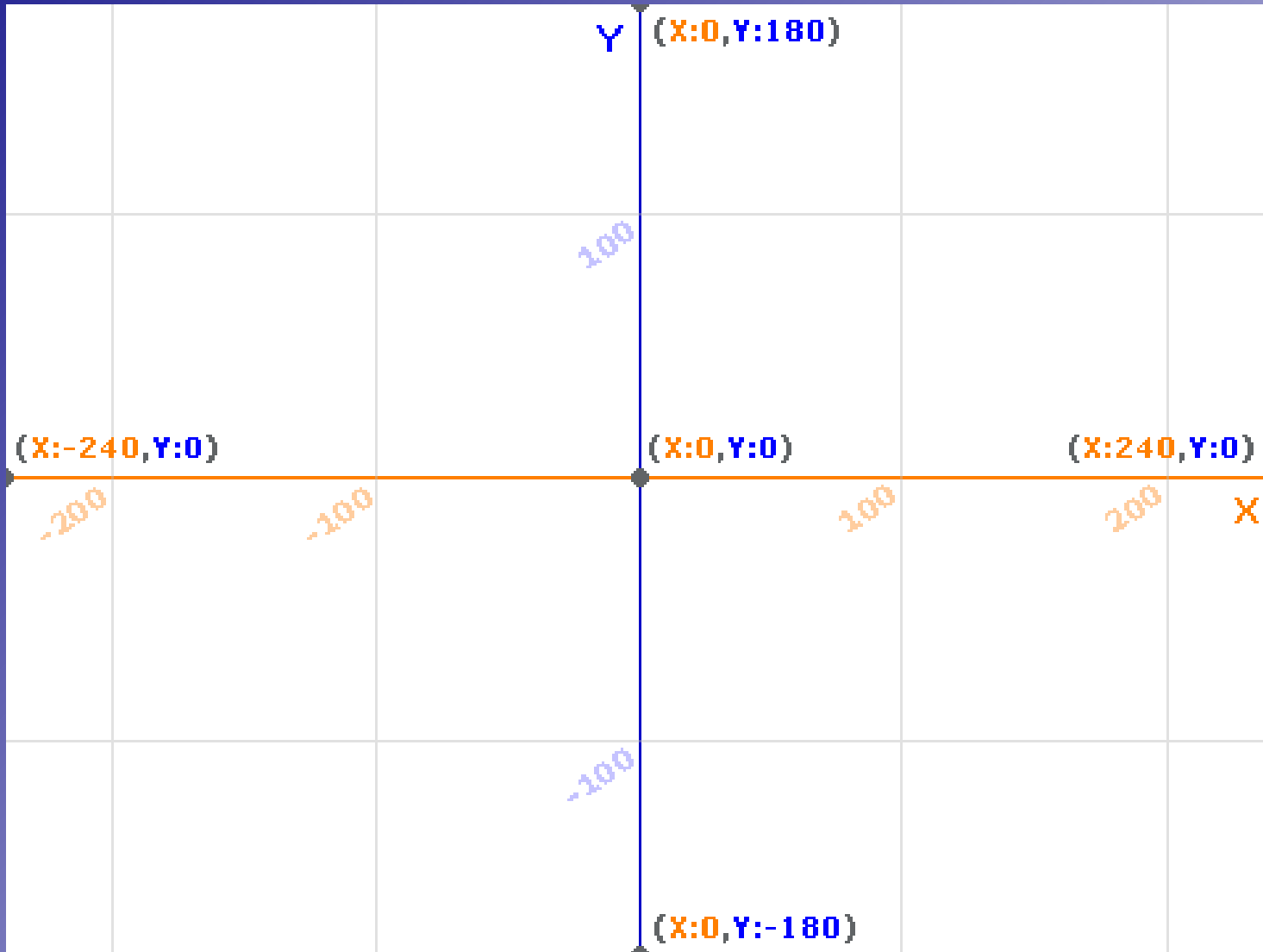
Repetition

Repetition

Variables

- Numbers
  - like x and y are used in algebra
- Text – word or sentence
  - called strings
- Logical values
  - true or false

- List

Variables

- Difference between a shared variable and a sprite variable

Stage grid

(X:0,Y:180)

Y

100

(X:-240,Y:0)

(X:0,Y:0)

(X:240,Y:0)

-200

-100

100

200

X

-100

(X:0,Y:-180)

Broadcast messages
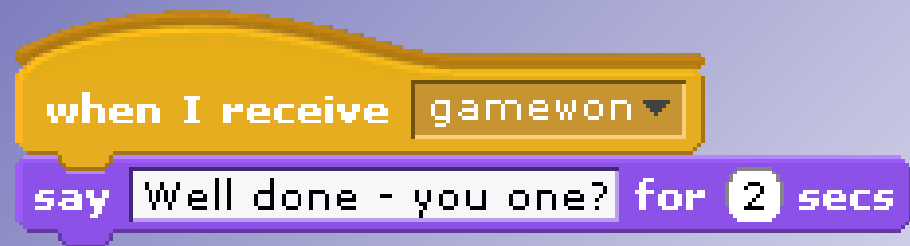
What we've covered

- Scratch

  – Interface, Stage, Sprites and code

- Programming techniques

  – Sequence, Selection and Repeition

- Variables

- Additional Scratch information

Questions

Homework!

- Work through Quiz Game

- Raspberry Pi Education Manual (Scratch)

Teaching computing

- See CAS guide to the National Curriculum

- Raspberry Pi Manual

References

- Computing at School - Computing in the National Curriculum

    – www.computingatschool.org.uk/primary

- Scratch

    – http://scratch.mit.edu/

- CAS Raspberry Pi Education Manual

    – http://pi.cs.man.ac.uk/download/Raspberry_Pi_Education_Manual.pdf

- Junior computer science

    – http://code-it.co.uk/

- Code Club (After school club)

    – https://www.codeclub.org.uk/

- The MagPi (Raspberry Pi magazine)

    – http://www.themagpi.com/

    –