

Please evaluate
my talk via the
mobile app!



Creating Apps with 6-Year Old Girls (and their Dads)



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This is not my day job

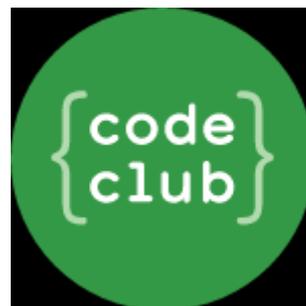
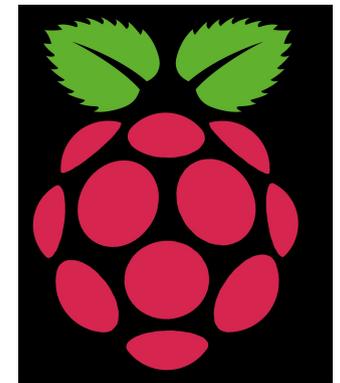
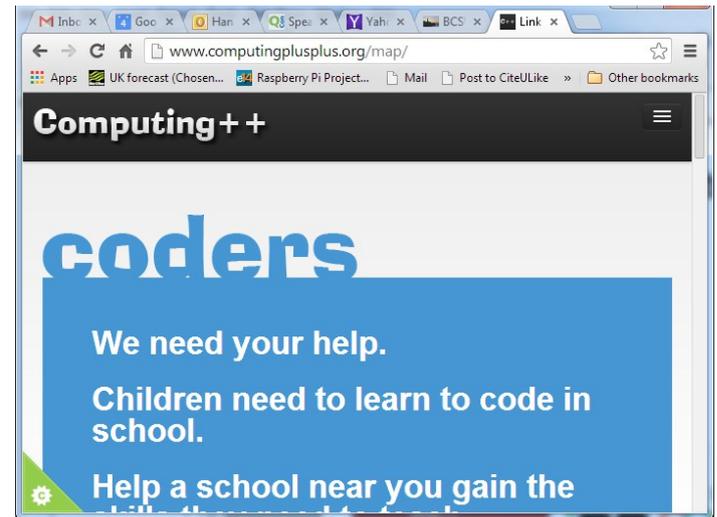
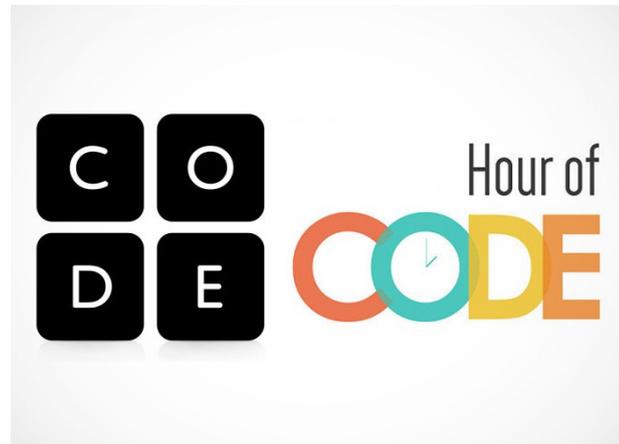
This is something I do because I
enjoy it, and because I think it's
important.

Hopefully I can convince you
of that too

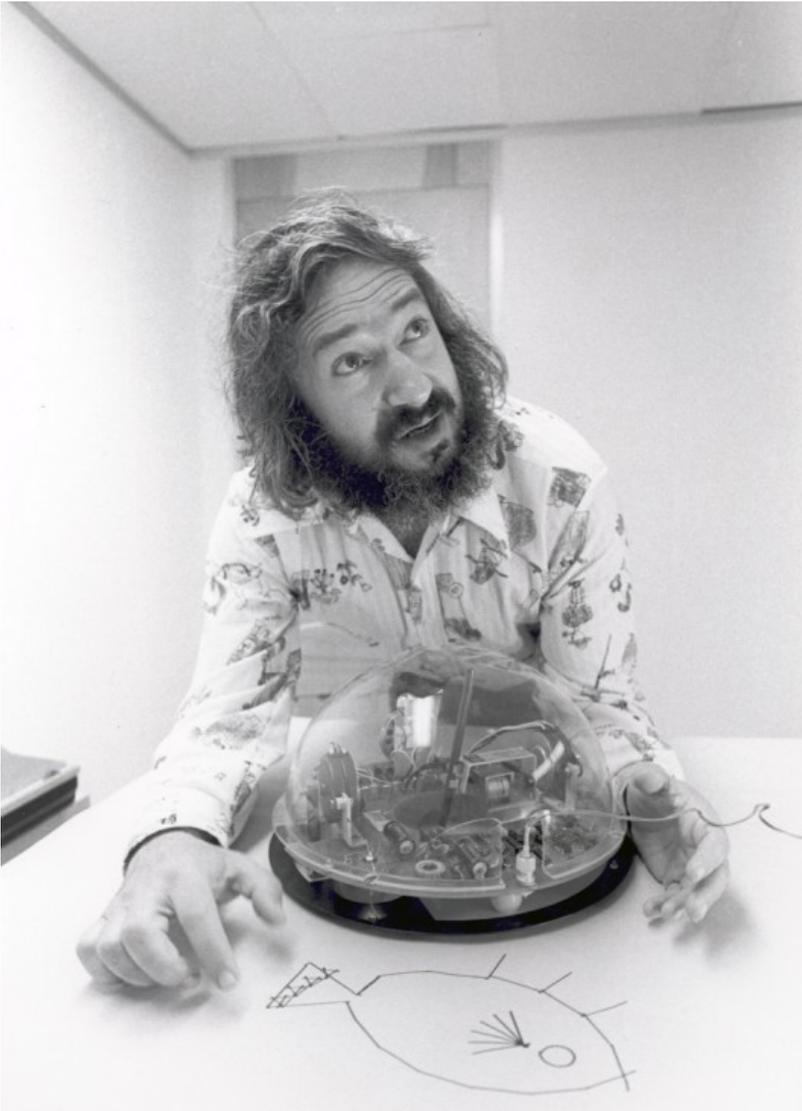




Codecademy



Computational thinking



Teaching our kids to code?

- Networks
- HCI
- Social aspects
- Testing
- Maths
- Graphics
- Image processing
- Machine vision
- AI
- IT
- Systems administration
- Machine Learning
- Language processing
- Hardware
- Robots
- Breaking down a problem
- Modularisation
- Data structures
- Modelling
- Abstraction
- Algorithm design
- Computability

The future requires computation

- We sell ourselves short
- The kinds of cognitive skills we get from computational literacy are vital
 - Can everyone learn to code in a hour / week / month / year / decade / lifetime ?
 - Would it be useful for everyone to try ?
 - Are there elements of coding that have meaningful and useful widespread application ?
 - Can we demystify technology ?

An aside on gender

- You can't be what you can't see

Workshop overview

- One-day BYOD Android coding workshop
- Hands-on: everyone walks away having written an app, and having got that app onto their own phone/tablet
- Uses AppInventor
 - Block-code cloud-based android dev platform
 - Great for rapid prototyping
 - Great for kids
 - Not perfect

What's provided?

- Speaker notes & workshop guide
- Slide deck
- Handout (~14 pages)
- FAQ
- Set of assets (sound files &c)
- All on hannahdee.eu/appinventor



Nawr mae gennym lun o gath

Ac mae gennym sŵn miaow

Yr hyn sydd angen ei wneud nawr yw llunio **RHAGLEN** sy'n gwneud i'r sŵn miaow chwarae wrth inni dapio'r gath.

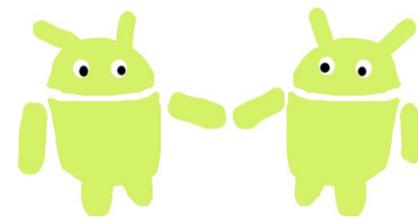
I ysgrifennu rhaglenni yn AppInventor, rhaid inni gychwyn y Golygydd Blociau (*Blocks Editor*).

Family

- Building apps with kids is great fun.
- If you have aunties/uncles/mums/dads too...
 - Crowd control suddenly becomes a lot easier
 - You're demystifying tech for parents as well as kids
 - All of a sudden there's something else to do on a wet Saturday
- Sibling effect (particularly useful for younger sisters)

Fun

- Coding is fun.
- Coding in stuff like AppInventor is **really** fun

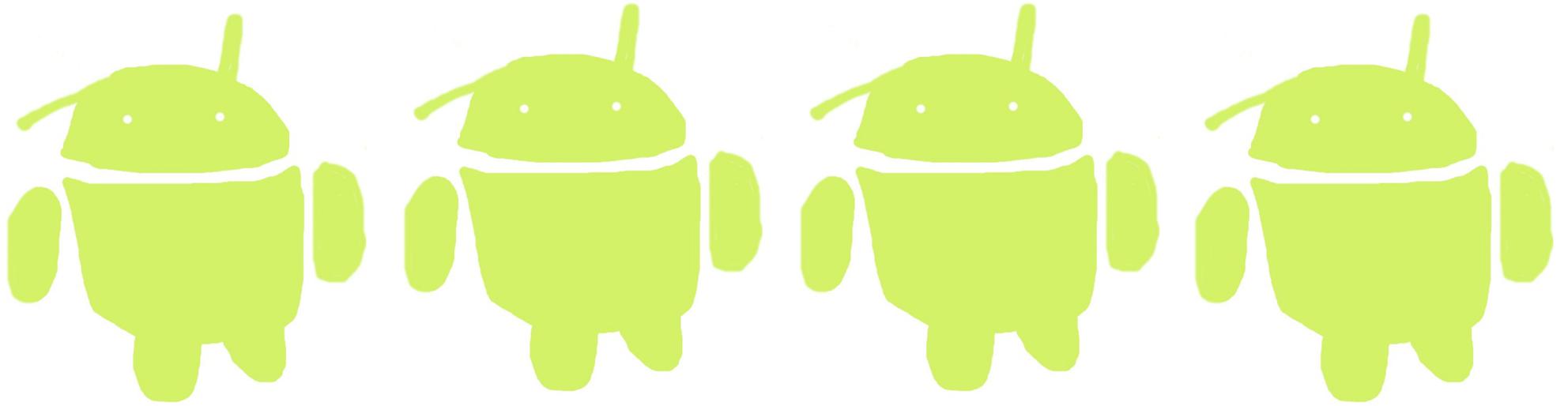


Day

- Intros
- Hello Android!
- Installing AppInventor
- Overview of AppInventor
- Making your first app
- What's special about mobile?
- Changing an app
- Getting your app on your phone
- Getting into groups
- Ideas for apps
- Planning your own app
- Q&A
- Coding your app
- Showing it all off
- Next steps

It's not actually a day though

- Usually run the workshop 10-4
- Installation of the ApplInventor software used to knock out the first hour
 - New version seems much more stable and doesn't rely on meddlesome JRE stuff so I have hopes it'll be smoother now
- Allowing for breaks, which you need to do... it's closer to 3h
 - Can be compressed into an afternoon, particularly if you have control of hardware



What does a phone have that a normal computer doesn't?





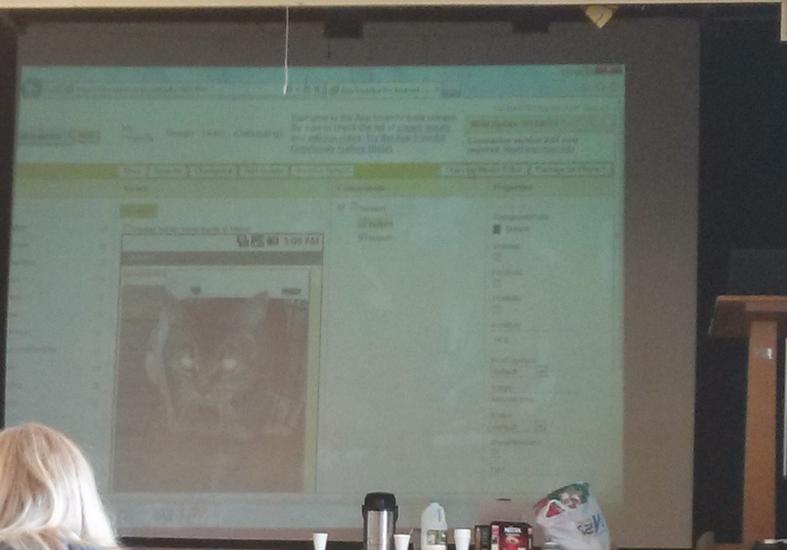
Some special things about mobile ...

- Small screens and big fingers
 - Also, no mouse pointer...
- Moves around a lot
- (Probably) contains a camera
- Has other sensors like GPS, compass,
- Has wireless
- (Probably) can vibrate...
- **ALSO IT IS A PHONE**



Mobile as motivator

- Writing a program for a computer is just not as cool as writing a program for a phone (or a tablet).
- We see similar things with hardware hacking
 - Kids love arduino, and anything to do with robots
- Achievement lies in getting your code to make an object **do** something
 - take a picture, vibrate, make a phone call, light up an LED, move a motor, make a noise



Galluogi Breuddwydion



Empowering Dreams

bcS
The Chartered Institute for IT
Cangen Canolbarth Cymru
Mid-Wales Branch



App ideas

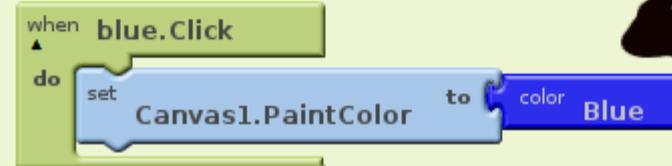
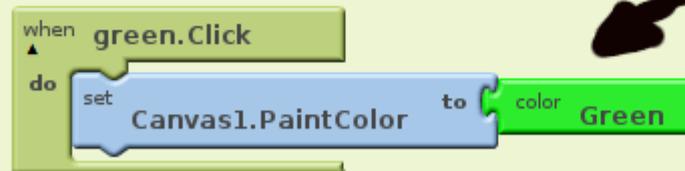
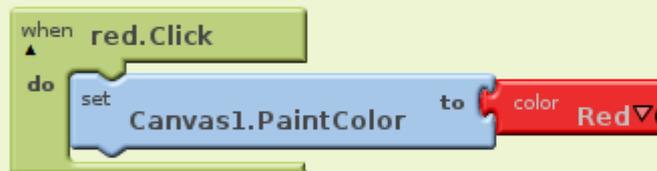
- Paintbox (12+)
- Drum machine (tap to play) (6-10)
- Photo-moustache-adder (10-12)
- Wobble app (14+)
- Djembe (8)
- Planecrash (16)
- Pong (14)

Canvases have quite a few drawing options

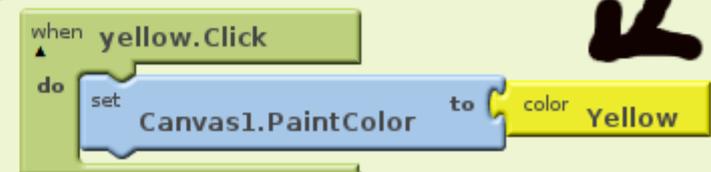


Here we use circle. To draw a circle you need centre and radius (x,y,r).

There are four buttons in this app, and I have renamed them red, green, blue and yellow so it doesn't get confusing



To change the colour of a drawing, you have to change the PaintColor that will appear on the canvas. You could think of the PaintColor as like picking up a new pen



2. I learned a lot at the workshop (Please circle)

Yes (10) 9 8 7 6 5 4 3 2 1 No

3. I will give programming a go in future (Please circle)

Yes (10) 9 8 7 6 5 4 3 2 1 No

4. Was this workshop at the right level for you and your group/children/parents?

Too basic 10 9 8 7 6 (5) 4 3 2 1 Too Advanced

5. It would help us if you wrote down a bit about your group/yourself – ages, experiences and so on – so we can work out who the right audience is.

My name is _____ and I am 7 years old.
I have two brothers. I have a happy
life. I go to _____ Primary School.

6. What age range do you think this workshop is appropriate for?

I think the age range should be
7 and over.

7. What one improvement would have made it better for you?

Nothing

3. I will give programming a go in future (Please circle)

Yes 10 9 8 7 6 5 4 3 2 1 No

4. Was this workshop at the right level for you and your group/children/parents?

Too basic 10 9 8 7 6 5 4 3 2 1 Too Advanced

5. It would help us if you wrote down a bit about your group/yourself – ages, experiences and so on – so we can work out who the right audience is.

I am six.
6. What age range do you think this workshop is appropriate for?

Six and up.
7. What one improvement would have made it better for you?

Nothing
8. Should we run this again? (Please circle)

Other feedback

- I'm 11 and I found it moderately easy and had a great time
- My wife and children (7-15) had no programming experience prior to this but now they are confident in making android apps
- I am 14 and I thought it was very easy to understand and the booklets helped + it was very interactive
- I'm 12, almost 13, boy who enjoys using apps, this was my first time making an app and I was pretty successful

Requirements

- A room big enough
 - Nice to be near a cafe
 - Nice to be near some open space
- Wifi
 - Big potential gotcha: School wifi is *&\$%ing irritating
- Projector & screen & maybe amplification
- Helpers (1:15 ratio is good)
- Printed copies of the booklet

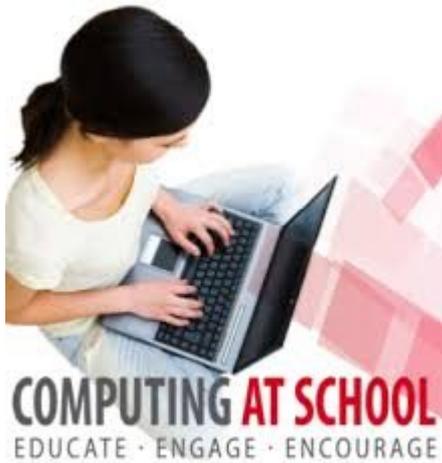
What about helpers?

- I reckon – if you're a developer – you can learn this stuff in a day.
- Helpers need to have basic appinventor
 - Most of the questions are logical though
 - AND every time I run this there's something I have to look up online (kids ask some interesting questions)
- Bottom line?
 - Busking it is totally feasible.

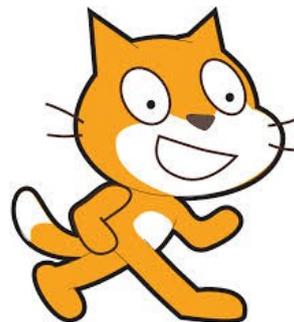
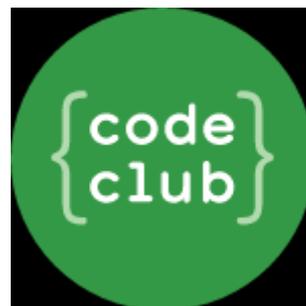
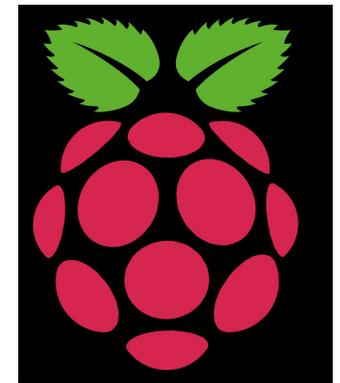
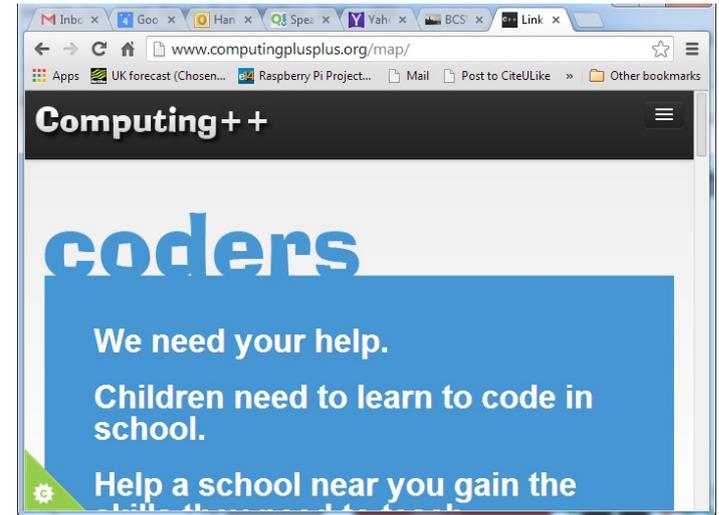
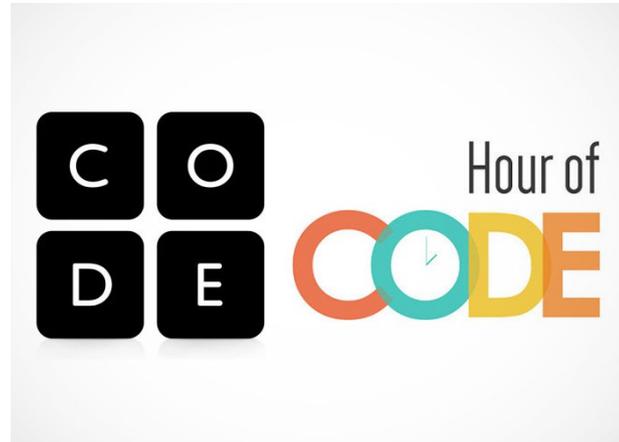
Future of mobile

- You can do this
 - You now know what you need
 - Mobile is intrinsically motivating
 - Programming is fun
 - Working with kids is rewarding
 - Running it with the families has additional benefits





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