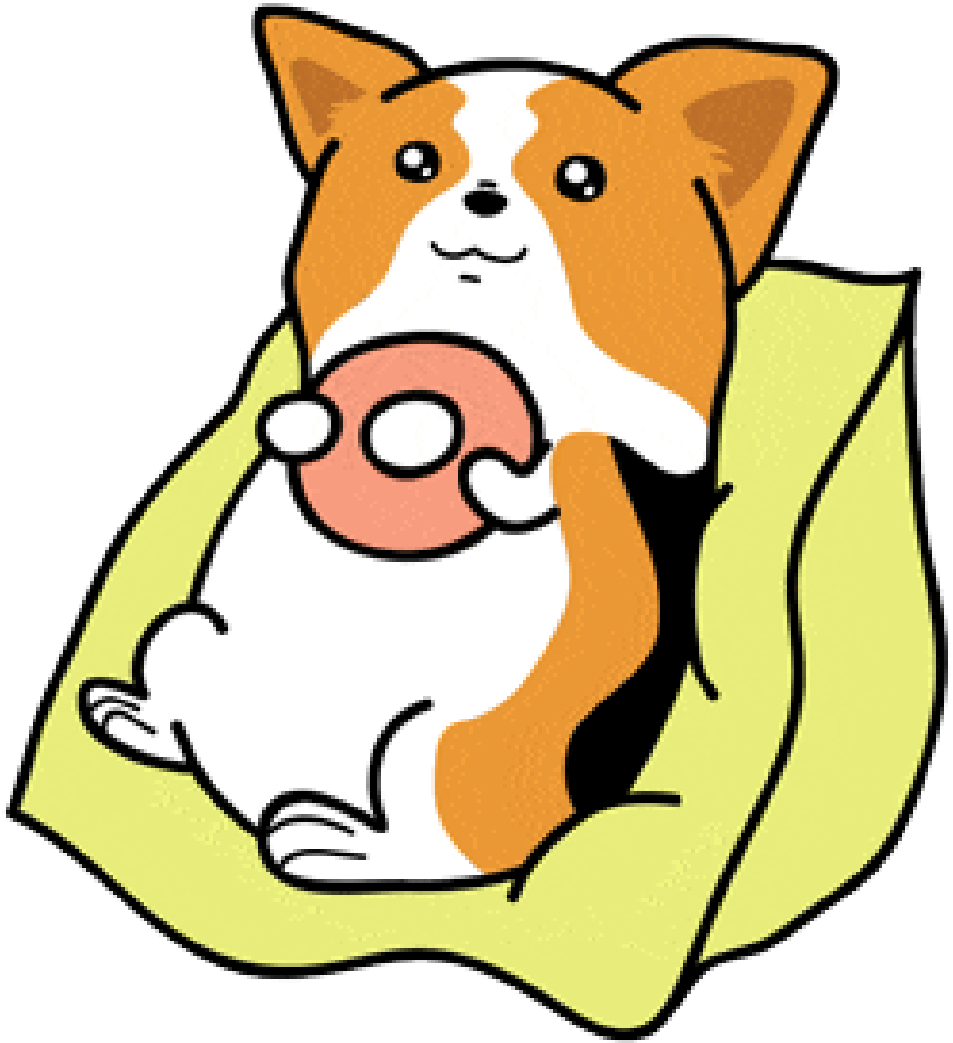
Welcome to Code Club!

Welcome back to Code Club!!!



Eat Snack then come back!

Stargazer Mission

Our Payload Box has arrived!!!!!

Raspberry Pi Sensor Hat – Has Arrived!!!!!

Thermometer, Pressure Sensor (Barometer), GPS, 434Khz Radio Transmitter

Raspberry Pi Camera Module – on the way!

Balloon & Parachute - on the way!

Configure the Raspberry Pi & Hat.

Make an antenna for the Radio Transmitter

Mount our camera on the Payload box

Decorate the box! And pick a mascot!

Weigh the Balloon/parachute/payload

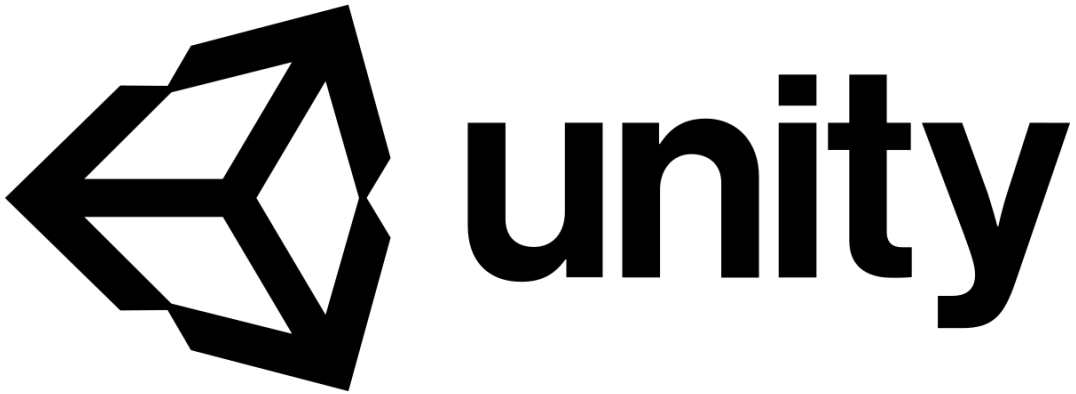
Test the parachute!!!!!

Test our tracking/telemetry

Apply for launch permission!

This Week

Virtual Tour of the School
Using cameras & Unity



360 Cameras

facebook
SURROUND 360

Nikon
SHOCKPROOF 2m/6.6ft
4K
WiFi

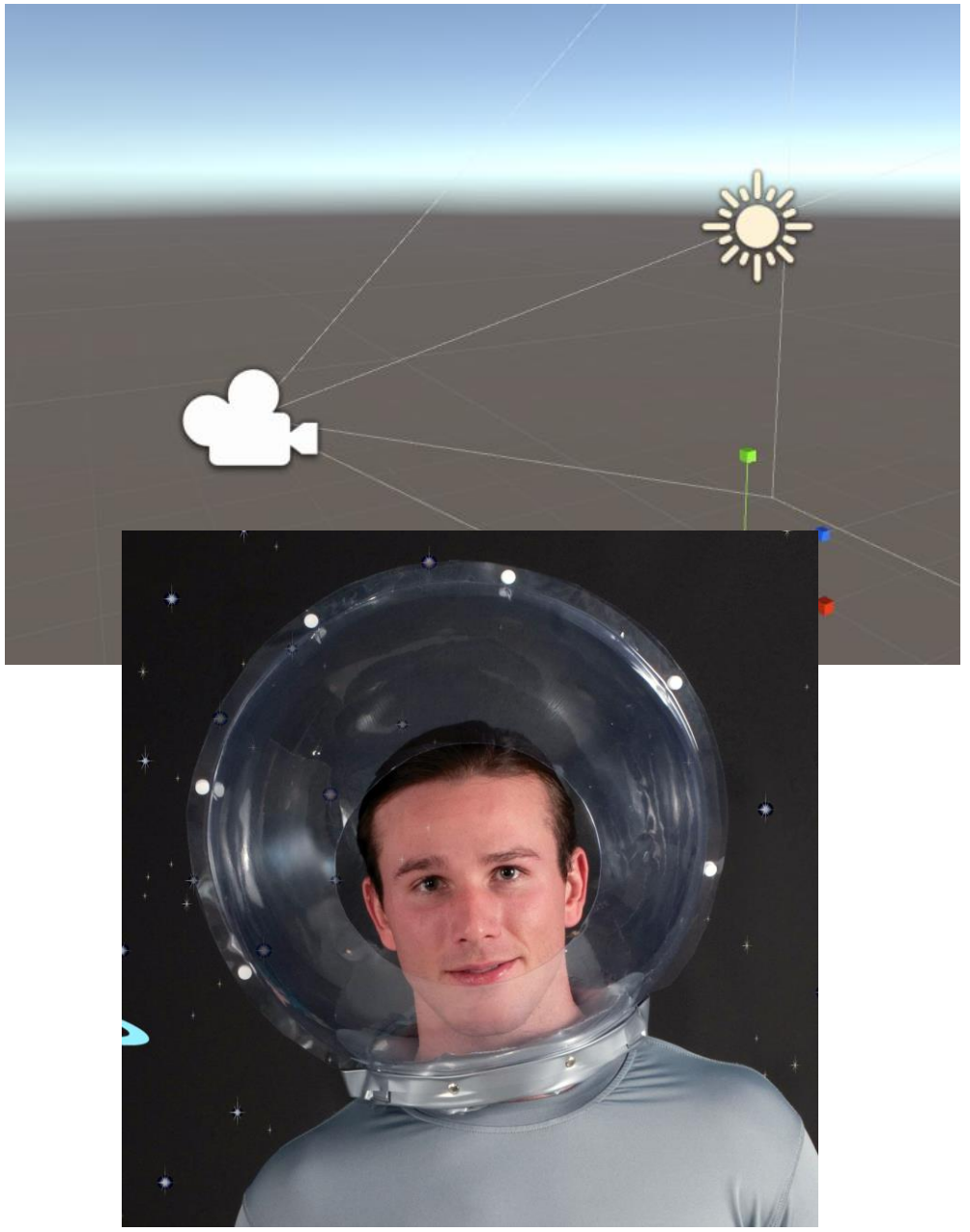
Nikon
SHOCKPROOF 2m/6.6ft
WATERPROOF 30m/100ft

Making a Simple 360 Viewer in Unity

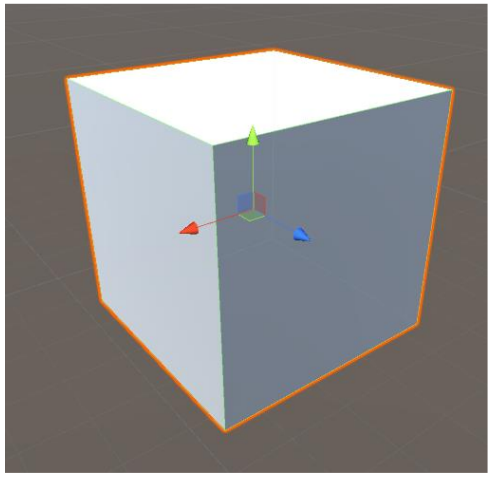
Everything you see in a Unity game is from a *Camera* which works just like a camera in real life – i.e. you're looking through the viewfinder/on the screen

We want to take a 360 picture, which is spherical, and look around it

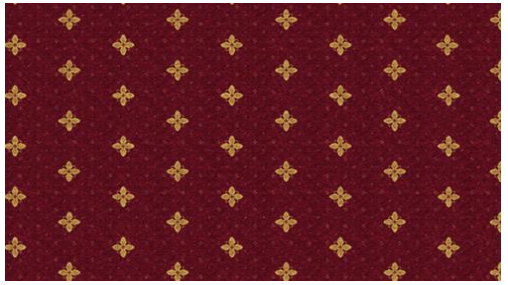
To do that, you have to imagine you're inside a ball with the picture painted on the inside of the ball



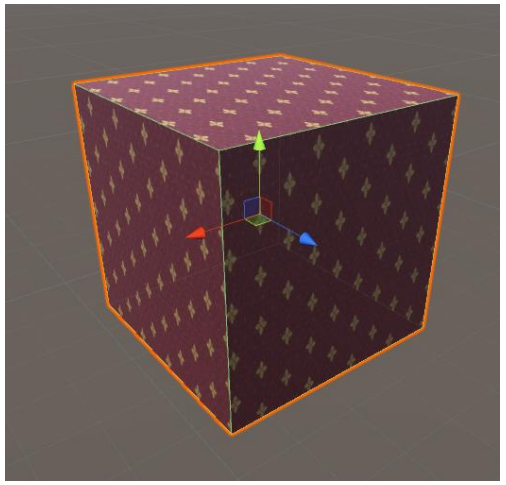
Objects, Textures, Materials & Shaders



Objects - things with shapes in the 3d space.
Spheres, cubes, cones, tanks, spaceships, doors, walls, houses etc



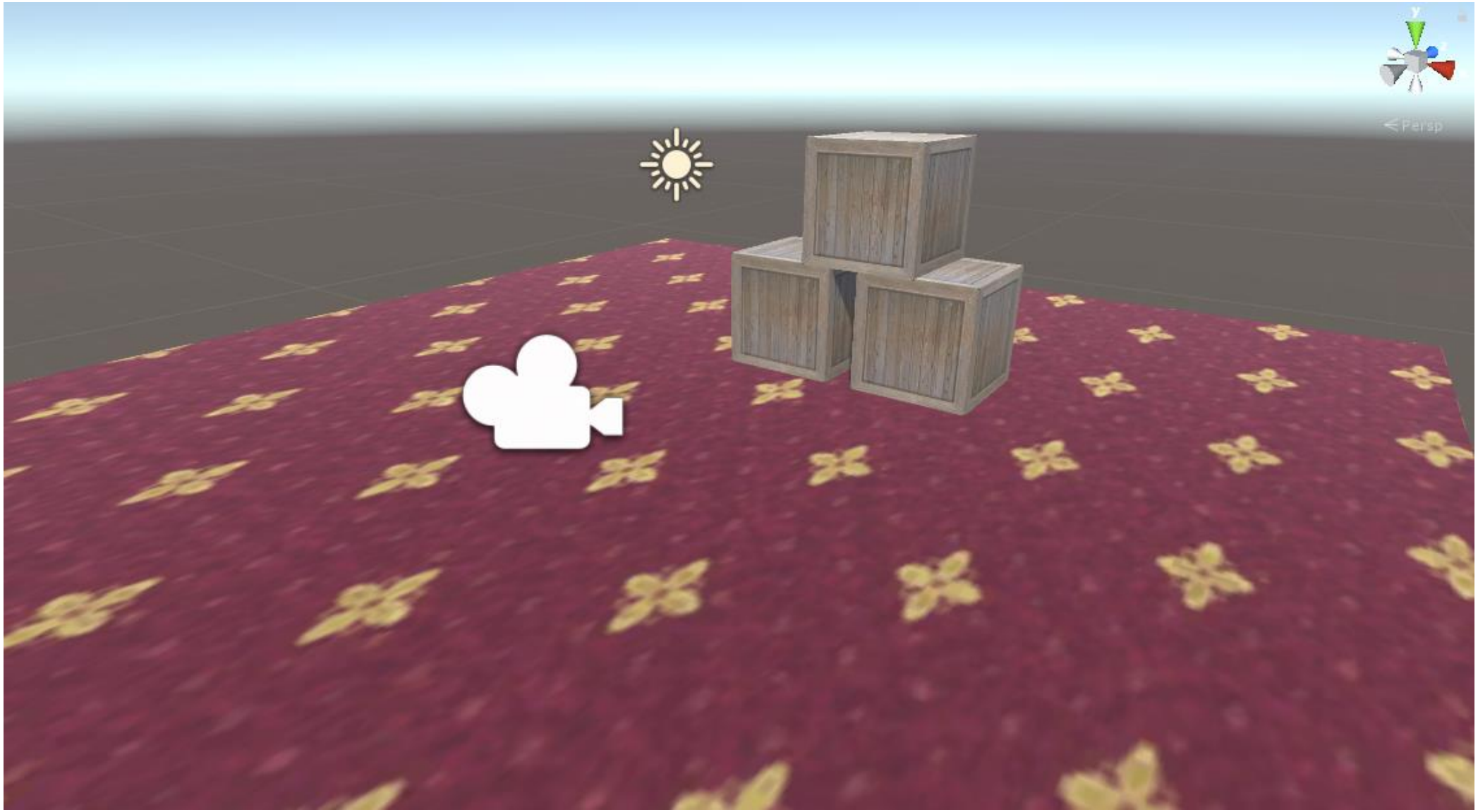
Textures – Patterns or pictures we want to used in our environment



Materials – coverings we put onto Objects – using Textures

Shaders – tells the computer how to draw the material onto the object

Unity – lets make some crates/carpets



Making a Simple 360 Viewer in Unity

1) Make a Sphere

Easy peasy – GameObject -> 3D Object -> Sphere

2) Put our picture on the inside of the sphere

Photo -> Texture -> Material

3) Position our camera *inside* the sphere, so we're looking at the picture on the inside

Put the sphere at 0,0,0 and then put the camera at 0,0,0 too

Making a Simple 360 Viewer in Unity

For Speed, we don't usually draw (or *Render)* the inside of objects (you'll see this in some games - Clipping)

But our camera is
INSIDE the sphere!

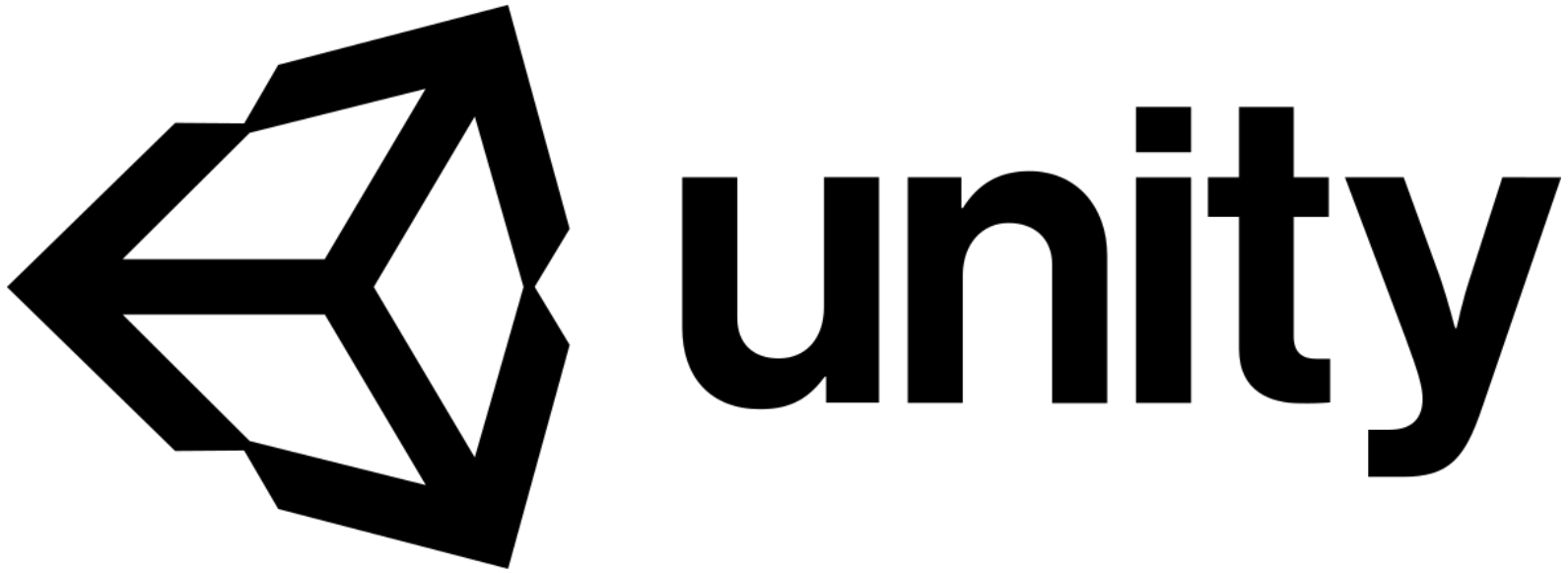
We need to flip it so it renders on the inside rather than the outside

This is called - flipping the 'normals'

A 'normal' is the direction the face of an object is pointing

We do this with a special *"Shader"* which tells the PC what to draw

Unity – Putting it all together



Today's Activity

- Go and photograph the school!

OR

- Stay here and we'll build a simple 3rd person "level" in Unity

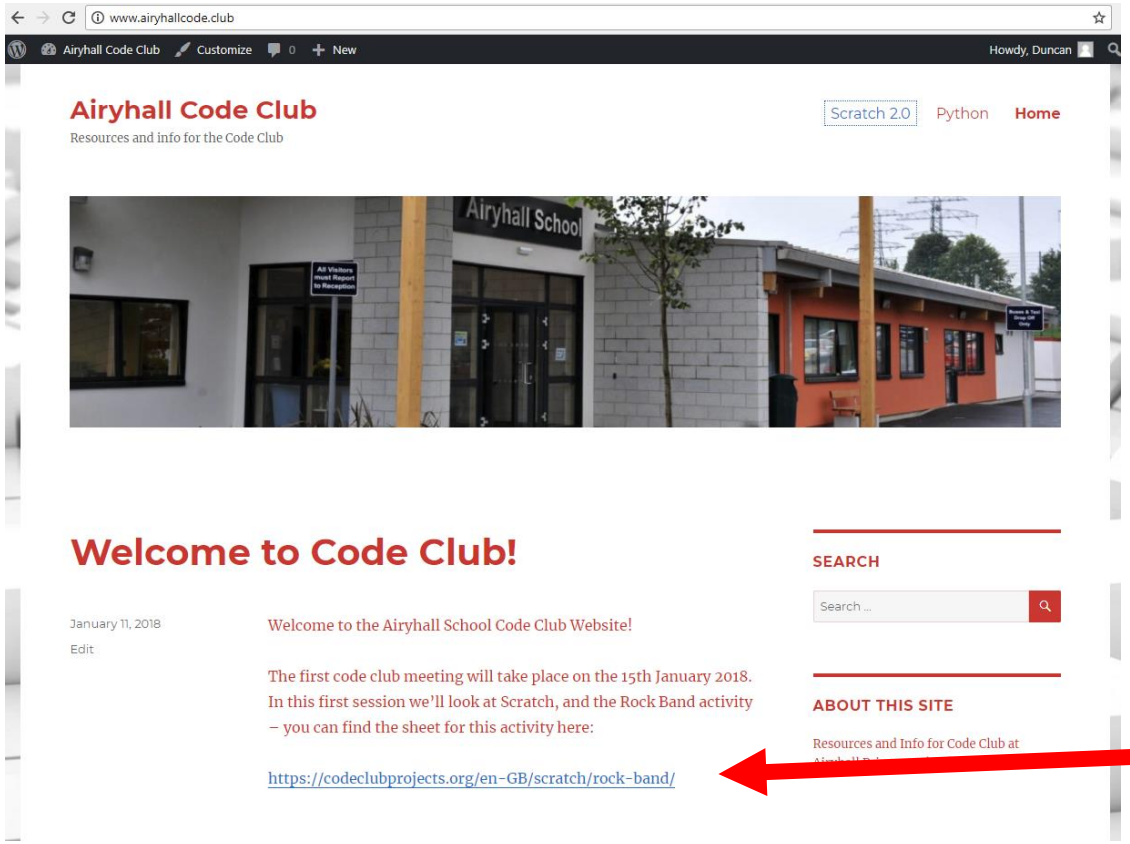
OR

- Pick a Scratch or Python activity from the Project pages

Today's Activity

Open up a new browser TAB, and go to:

http://airyhallcode.club



Click the link for the activity notes!

CODE CLUB