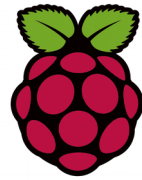# Create game sprites with Blender
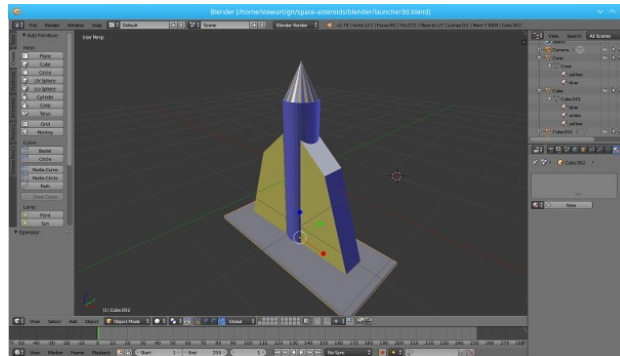
Raspberry Pi Birthday 2018
Blender

Penguin Tutor

Introduction: Stewart Watkiss - Author of Learn Electronics with Raspberry Pi and website PenguinTutor.com

Welcome to short introduction to Blender and how it can be used for creating sprites (actors) for computer games.

What is Blender?

Blender is an open source 3D design tool. A drawing tool for creating 3D objects, animations and even games.
We will just look at it as a 3D object design tool.

How to get started

- Install on the Raspberry Pi
  - sudo apt install blender
- Recommend more powerful computer
  - Raspbian in a Virtual Machine
  - Linux, Windows, MacOS
- Download
  - www.blender.org

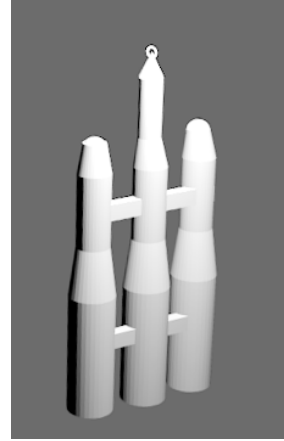Can run blender on the Raspberry Pi - use apt to install.

It is however slow - main issue being lack of memory when creating complex models and animations etc.

Recommend running on a more powerful computer. Personally I run either on Linux laptop or in Raspbian on a Virtual Machine.

Download from www.blender.org

Getting started

- Code Club
  - Pre-release
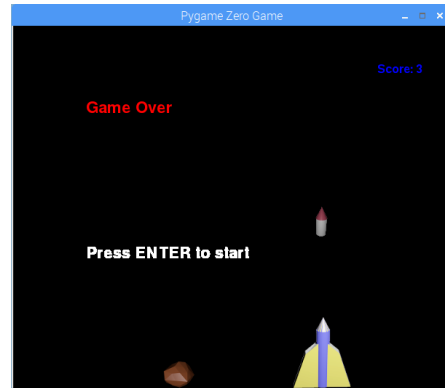- PenguinTutor.com
  - Coming soon - Video tutorials

Blender is different to how most drawing packages work, but with some practice can be used by kids as well as adults.

Code Club has created some tutorials, which will be available to Code Club.

Worked through these with my 10 year old son, which he enjoyed. After only a few hours he created his own Heavy Launch rocket from scratch which was beyond the scope of the Code Club materials..

How to use in games

- Export from Blender as an image
- Remove background using GIMP
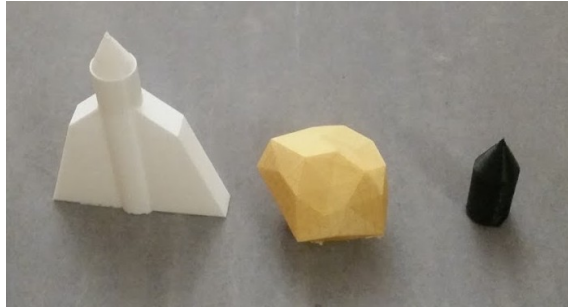- Use in Scratch as a Sprite
- Use in Pygame Zero as an Actor

Will be adding Tutorial on www.penguintutor.com

The Pygame Zero example shown is the game that will be created in the accompanying workshops.

3D printing models

- Export from Blender as STL
- Open in Cura (or similar)
- Save as GCODE

Show actual models printed with 3D print.

What is not so good at is designing things that need exact dimensions, such as a Raspberry Pi case.

Thank You

- Hopefully useful
- Adds another tool that you can help to learn computing and to help create games
- More details:
  - www.penguintutor.com/blender

Thanks for listening. I hope it is useful new tool that you can use for creating sprites for games or for designing 3D print models.

As I've said previously it is a steep learning curve, but still simple enough for children to learn.