

Engineering



Activities

Redstone Electronics

Input, Output, Shake-it-all-aboutput.

Advanced Redstone

Clocks, timers, and logic gates.

Portus

A recreation in Minecraft of the port of ancient Rome.

Southampton, London, Brighton, Newport (IoW), Winchester

HUGE models of these cities created by University of Southampton software from "open data".

Minecraft Archaeology

Try out your skills as an archaeologist, excavating a settlement.

Most of these maps are available to download and play at home.

<https://is.gd/x82xPI>

Requires PC/Mac (Java) version of Minecraft.

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Portus: Port of Rome

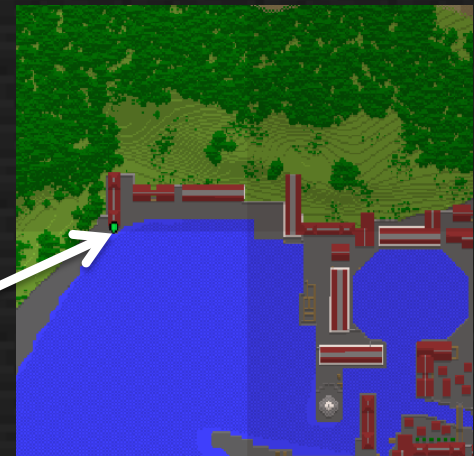
Portus was the port of ancient Rome.

It is studied by University of Southampton archaeologists.

This Minecraft map helps us imagine what it might have been like to live and work there.

Follow the clues or just explore!

First clue!



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Blue Road

Redstone is turned on by...

- Switches
- Buttons
- Pressure plate
- Trapped Chest
- Redstone Torches
- Redstone repeater

Redstone acts a bit like electronic wire. It can transmit a signal from here to there.

Redstone 1: Input, Output



Orange Road

Redstone turns on...

- Doors
- Redstone Lamps
- Block with redstone torch on top/
side
- Pistons & Sticky Pistons
- Redstone Repeater
- TNT!!!
- Railcart points

Put inputs next to outputs or join them with redstone wire.

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Purple Road

Redstone signal only goes 16 blocks.

Use a repeater to make it go further.

Light detectors give no signal at night, 2 at dawn and 16 noon.

A comparator next to a chest gives a bigger signal the more full the chest is.

Redstone 2

Repeaters & signal strength



Red Road

Redstone repeaters pass on a redstone signal after a delay.

Right clicking changes length of delay.

Repeaters are one-way.

Make a clock using a “NOT” plus some repeaters.

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Redstone 3 Logic



We've made examples of
"OR", "NOT", "NOR" and
"AND" logic gates.

Computers are made from
logic gates.

Get a "truth table"
handout and see if you
can discover what
each "gate" does with
redstone signals.

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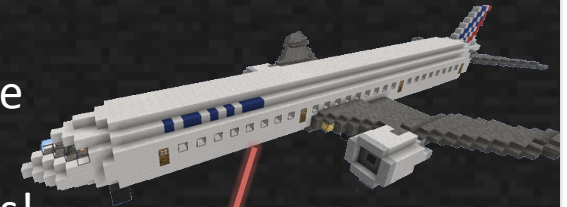
LIDAR

LIDAR is a system where an aeroplane measures the height of the surface of the planet using a LASER. It fires the laser and measures where the sparkles are. Don't worry, it's not dangerous!

The government give this data away as "open data".

We combine this data with maps which show the locations for buildings, ocean and roads.

We then load this into Minecraft maps to make our city maps.



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London

Houses of Parliament: /tp 4432 17 -1976

Buckingham Palace: /tp 3460 17 -2140

The Shard: /tp 7210 254 -2480

HMS Belfast: /tp 7559 21 -2666

Tower of London: /tp 7894 43 -2949

O2 Arena: /tp 13456 65 -2362

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Southampton

Oceanography Centre: /tp 6232 46 - 1448

Town Quay: /tp 5474 30 -1835

Bargate: /tp 5504 33 -2611

Guildhall Square: /tp 5439 49 -3192

Football Stadium: /tp 6414 32 -2926

University: /tp 5985 58 -6300

Boating Lake on Common: /tp 5165 47 -5436

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Archaeology



- We've worked with the archaeology department to simulate what happens to buildings over time.
- Can you discover what lies beneath this hill?
- Tips:
 - look out for darker dirt (podzol blocks). This was once wood that has decayed underground.
 - Be careful! It's easy to go too fast and break things.