

Countdown Timer

AS3.5 Portfolio Scaffold

The Portfolio Scaffold is used as a guide to help kids understand the stages and expectations of the assessment. The Assessment Task for the Electronics outcome and specifications will be given to you by your teacher.

IMPORTANT if you follow this template you will need to have supporting evidence from a notebook or journal to evidence “iterative development”

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Construct and test your electronics outcome

Evidence constructing, testing, and debugging your electronics system on all input/output interfaces.
Include:

Potentiometer

Draw or Sketch the Potentiometer interface using correct circuit symbols

Sample Program Code used

Testing/calibration of potentiometer

potentiometer	Analog Readings

LCD interface via I2C

Draw or Sketch the LCD interface using correct circuit symbols and wiring labels

Sample C++ code used

Real Time Clock interface via I2C

Draw or Sketch the RTC interface using correct circuit symbols and wiring labels

Sample C++ code used

Switch interface

Draw or Sketch the Switch interface using correct circuit symbols and wiring labels

Sample C++ code used

Here you could show code that turns an LED on/off or code that starts a timer on an LCD. It is up to you.

Testing of switch

<i>Input</i>	<i>What I expected the outputs to do?</i>	<i>What the outputs actually did?</i>
Button press		

Neo Pixel Display using External C++ Library

Draw or Sketch the Neopixel interface using correct circuit symbols and wiring labels

Sample C++ code used

Show how you addressed the relevant implications within development

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Circuit schematics of the complete electronic system

Sketch a circuit schematic for your proposed electronic system, include correct circuit symbols and labels for components you select.

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Purpose and function of components and interfaces

Include evidence that shows you are able to describe/explain/justify the interfaces and functions of the components of the systems used.

A photograph of your electronics system. Annotate your photographs with descriptions of:

- each component (what it does, how it functions)
- each interface (what it does, how it functions)

Explain the behaviour and function of the electronics outcome

C++ Program Functions

Potentiometer (Voltage Divider) and Arduino Analog to digital conversion

I2C communications and LCD interface and RTC interface

Switch debounce and software or hardware solutions to solve debouncing

Justification of Components

This section is required for Excellence only. The box is way too small

Justify User Interface features used (control used to program timer, display system used to view timer)

Justify methods used to resolve switch debounce

Do not be limited by the size of the box. Use more space if needed