DIGITAL TECHNOLOGIES HUB

Australian Curriculum V9.0 **Digital Technologies**

# Programming

**Implementation** describes the automation of an algorithm, typically by writing a computer program or using appropriate software

ACARA, 2022

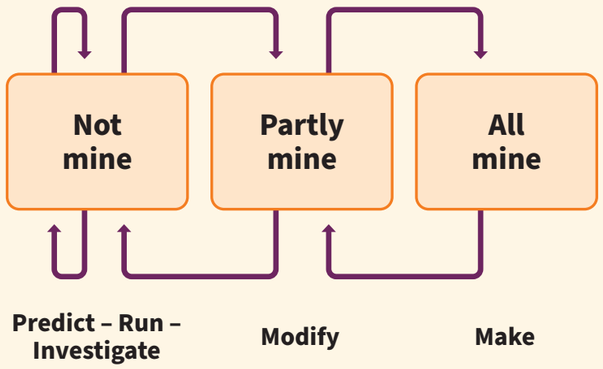
## Teaching programming Years 3–10

**View your year band for an overview of the content related to programming. In some cases it includes suggested related content so you can integrate with another learning area.**

**Use-Modify-Create** is one approach to support and guide your students. A learner runs (uses) an existing program to see what it does, then modifies it and, when able, creates a new project of their own.

**Pair programming** is another useful pedagogy. Two students, a driver and a navigator, work side by side. The driver controls the programming actions while the navigator assists with instructions for programming, looks for errors and monitors progress against the algorithm. After some time the roles are reversed.

### Use-Modify-Create adapted




**For suggested resources**

https://bit.ly/ProgrammingYears3to10

From Years 3–6 students are expected to use a visual programming language which is often referred to as block-based programming. From Years 7–10 students are expected to use a general purpose programming (GPP) language such as Python, JavaScript or C++.

Here are a range of resources and approaches that you might use to implement programming.

| Learning resources and approaches | Visual programming | General purpose programming |
|---|---|---|
| Coding platforms and environments | Scratch, Snap, Blockly, micro:bit, Pencil code and Tynker | Replit, Glitch, JSFiddle, and CodePen, W3Schools, Swift (Apple's coding environment) |
| Online courses, tutorials and coding challenges | Code.org, Grok Academy, Scratch community | Grok Academy, W3Schools, Codeacademy, DT Hub and Khan academy |
| Project-based learning | micro:bit, Programmable robots, App inventor | Arduino, Raspberry pi, micro:bit, Programmable robots and robotic kits |

## Foundation

This concept does not appear in the Australian Curriculum: Digital Technologies in Foundation.

There is related content in Mathematics.

Use and interpret everyday language of location and direction, such as: between, near, next to, forward, toward, above, below, on top of, under.

Describe the position of an object compared to another object

**Related content**

Connect language of position and movement to students' lives.

**Mathematics**

Describe the position and location of themselves and objects in relation to other people and objects within a familiar space Mathematics | AC9MFSP02

## Years 1–2

This concept does not appear in the Australian Curriculum: Digital Technologies in Years 1–2.

A pre-cursor to using a formal programming language is to use a push button programmable floor robot.

This enables students to use computational thinking, learn basic programming concepts and implement simple algorithms. (See Algorithms).

There is related content in Mathematics.

Provide relevant contexts to use locational and directional language such as quarter, half-turns, left and right, forwards and backwards, clockwise and anticlockwise, and use steps to describe distance.

**Related content**

Using a floor robot to move along a pathway.

**Mathematics**

Give and follow directions to move people and objects to different locations within a space | Mathematics AC9M1SP02

Locate positions in two-dimensional representations of a familiar space; move positions by following directions and pathways | Mathematics AC9M2SP02