Australian Curriculum v8.3

Linking document for EdBlocks lesson activities

This document aims to demonstrate how the EdBlocks lesson activities align to the technologies learning area requirements of the Australian Curriculum (v8.3) in the year 3-4 band and the year 5-6 band.

Contents

How to use this document

This document is first broken out into the year level bands (years 3-4 and years 5-6). It is then subdivided into the two technology learning area subjects (digital technologies and design and technologies) per level band.

EdBlocks supports some of the individual curriculum content areas as well as aiding in meeting the technology learning area achievement standards. Specific individual curriculum content areas supported by EdBlocks are identified by their curriculum ID and content description per subject.

Please note: only individual curriculum content areas in the technology learning area subjects supported by EdBlocks are covered in this document.

Where EdBlocks supports an individual content area, summary statement(s) of how the program supports the content area are provided in the 'EdBlocks elaboration(s)' section. The EdBlocks elaborations address how the EdBlocks lesson activities program or specific elements of the program address the content area. These summaries have been written in a style reflective of other elaborations provided in the online curriculum to enable easy use in reporting, as appropriate.

A list of any specific activities which contribute to meeting the content area is also provided. These activities are all from either the EdBlocks lesson activities student worksheets or extension activities outlined in the EdBlocks teacher's guide.

Please note, the EdBlocks elaborations assume completion of the specific activities listed.

A summary statement of how use of EdBlocks as a program broadly supports the achievement standards is also provided per technology learning area subject.

Years 3 and 4

Digital technologies

Curriculum ID	Content description	EdBlocks elaboration(s)	Specific activities
ACTDIK007	Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data	• The EdBlocks program enables students to experiment with different types of digital system components and peripheral devices to perform input, output and storage functions through the interaction of the online app accessed through a computer or tablet and the Edison robot. • The EdBlocks program enables students to recognise that different types of data can be transferred within digital systems, such as from a computer to a peripheral device, such as a printer, or to the Edison robot using the EdComm cable.	• Activity 1 • Activity 9 • Activity 23, find the answer #2
ACTDIK008	Recognise different types of data and explore how the same data can be represented in different ways	• The EdBlocks program enables students in recognising representations of different types of data such as waves for sound and light. • The EdBlocks program allows students to interact with data being represented in different ways, such as having the Edison robot be able to be programmed using both barcodes and EdBlocks.	• Activity 3, extension activity 1 • Activity 9, extension activity 1
ACTDIP009	Collect, access and present different types of data using simple software to create information and solve problems	• The EdBlocks program allows students to collect different types of data and practice selecting appropriate formats or layout styles to present the data as information depending on the type of data and the audience, for example lists, tables, graphs and presentations.	• Activity 6, extension activity 2 • Activity 14, extension activity 2 • Activity 17, extension activity 1 • Activity 20
ACTDIP010	Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them	• The EdBlocks program allows students to experiment with different ways of describing a set of instructions, for example writing two versions of the same simple set of instructions for Edison, the programmable robotic device.	• Activity 8, extension activity 2 • Activity 18, find the answer #3 • Activity 19, extension activity 1 • Activity 19, extension activity 2

ACTDIP011	Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input	• The EdBlocks program allows students to design and implementing simple interactive digital solutions using a visual programming language. • The EdBlocks program allows students to implement programs that make decisions on the basis of user input or choices such as through selecting a button, or providing external input such as a clap, to enable the program to 'branch' to a different segment of the solution.	• Activity 12 • Activity 15 • Activity 23
ACTDIP012	Explain how student solutions and existing information systems meet common personal, school or community needs	• The EdBlocks program allows students to imagine and consider alternative uses and opportunities for information systems used in the classroom, such as applying the programs used by the Edison robot to real-world situations. • The EdBlocks program allows students to test the adequacy of student solutions, for example by reviewing their own and other classmates' solutions to seek out reasons for success and failure and provide feedback.	• Activity 1, extension activity 1 • Activity 3, extension activity 2 • Activity 13, find the answer #4 • Activity 18, extension activity 1 • Activity 22, find the answer #1 and #2
ACTDIP013	Plan, create and communicate ideas and information independently and with others, applying agreed ethical and social protocols	• The EdBlocks program allows students to use online tools to share information such as by participating in a forum or collaborative space on a specific topic. • The EdBlocks program provides practice for students to organise and create different types of information for sharing and collaborating online, for example sharing result data online with students from another school, and practice engaging in good online etiquette and safe online sharing behaviours.	• Activity 17, extension activity 2

The EdBlocks program assists with the Years 3 and 4 Achievement Standard by providing a framework and activities for students to:

- Describe how a range of digital systems (hardware and software) and their peripheral devices can be used for different purposes.
- Explain how the same data sets can be represented in different ways.
- Define simple problems, design and implement digital solutions using algorithms that involve decision-making and user input.
- Explain how their created and observed solutions meet the solution's purposes.
- Collect and manipulate different data when creating information and digital solutions.
- Safely use and manage information systems for identified needs using agreed protocols.

Design and technologies

Curriculum ID	Content description	EdBlocks elaboration(s)	Specific activities
ACTDEK010	Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs	• The EdBlocks program allows students to explore what people in design and technologies occupations do and in what industries they work.	• Activity 12, extension activity 2
ACTDEP014	Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions	• The EdBlocks program provides practice for students to explore the properties of materials to determine suitability. • The EdBlocks program allows students opportunity to critique and select appropriate techniques, materials and designs to produce working models.	• Activity 3, extension activity 2 • Activity 5, extension activity 2 • Activity 21, extension activity 2

The EdBlocks program assists with the Years 3 and 4 Achievement Standard by providing a framework and activities for students to:

- Explain how products and services are designed to best meet the needs of communities.
- Describe contributions of people in design and technologies occupations.
- Describe how the features of technologies can be used to produce designed solutions.
- Explain needs or opportunities and evaluate ideas and designed solutions against identified criteria for success.

Years 5 and 6

Digital technologies

Curriculum ID	Content description	EdBlocks elaboration(s)	Specific activities
ACTDIK014	Examine the main components of common digital systems and how they may connect together to form networks to transmit data	• The EdBlocks program allows students to describe digital systems as having internal and external components that perform different functions, for example external components for inputting data including keyboard, mouse, stylus; internal processing components; external output components including the Edison robot which performs the program actions. • The EdBlocks program allows students to explore and explain how data may be transmitted between two digital systems in different ways, for example by using the Edison robot to read a barcode program, activating a pre-set program and by downloading a program using EdBlocks and the EdComm cable.	• Activity 4 • Activity 9 • Activity 9, extension activity 1
ACTDIP016	Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information	• The EdBlocks program allows students to use digital systems to validate data, for example by testing their time entries in EdBlocks program using the Edison robot. • The EdBlocks program allows students to use the EdBlocks software to build a visualisation of the dataset, for example, by representing music as visual steps.	• Activity 12 • Activity 18 • Activity 20

ACTDIP019	Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition)	• The EdBlocks program allows students to follow, modify and describe the design of a program involving simple algorithms represented diagrammatically or in English, for example explaining a program designed in EdBlocks in terms of its processes and inputs and outputs. • The EdBlocks program allows students to experiment with different ways of representing an instruction to make a choice, for example branches which result between two different circumstances using 'wait until' blocks in the EdBlocks visual program. • The EdBlocks program allows students to experiment with different ways of representing an instruction to make a repetition, for example loops acting as a 'REPEAT' statement in EdBlocks. • The EdBlocks program enables students to design the instructions for the Edison robot to perform a variety of tasks.	• Activity 16 • Activity 16, find the answer #3 and #4 • Activity 23, extension activity 2
ACTDIP020	Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input	• The EdBlocks program allows students to experiment with different options that involve repeat instructions, for example, loops acting as a 'REPEAT' statement in EdBlocks. • The EdBlocks program allows students to plan and implement a solution using a visual programming language, for example designing and creating programs involving decisions and repetitions, that requires user input to make selections, taking into account user responses. • The EdBlocks program allows students to program a robot to operate independently, for example to find its way out of a maze. • The EdBlocks program allows students to experiment with different ways of instructing to make choices and repeat instructions, for example using the 'wait until' blocks in EdBlocks to allow for making choices and the loop blocks to allow for iterations (repeat instructions) until a goal is achieved.	• Activity 12 • Activity 12, extension activity 1 • Activity 15, extension activity 1 • Activity 16 • Activity 16, find the answer #3 and #4 • Activity 20, extension activity 1 • Activity 23, extension activity 2
ACTDIP021	Explain how student solutions and existing information systems are sustainable and meet current and future local community needs	• The EdBlocks program allows students to imagine how the functioning of one type of information system could be applied in a new way to meet a community or national need, for example considering how the obstacle detection capabilities of the Edison robot could improve driverless cars.	• Activity 3, extension activity 2 • Activity 18, extension activity 2

| ACTDIP022 | Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols | • The EdBlocks program allows students to use a range of communication tools to share ideas and information, for example participating in collaborative online environments. | • Activity 17, extension activity 2 |

Achievement standards summary statement

The EdBlocks program assists with the Years 5 and 6 Achievement Standard by providing a framework and activities for students to:

- Explain the fundamentals of digital system components (hardware, software and networks) and how digital systems are connected to form networks.
- Define problems in terms of data and functional requirements and design solutions by developing algorithms to address the problems.
- Incorporate decision-making, repetition and user interface design into their designs and implement their digital solutions, including a visual program.
- Manage the creation and communication of ideas and information in collaborative digital projects using validated data and agreed protocols.

Design and technologies

http://www.australiancurriculum.edu.au/technologies/design-and-technologies/curriculum/f-10?layout=1#level5-6

Curriculum ID	Content description	EdBlocks elaboration(s)	Specific activities
ACTDEK020	Investigate how electrical energy can control movement, sound or light in a designed product or system	• The EdBlocks program allows students to investigate the properties of materials to solve problems requiring the control of movement, sound or light, for example the amount of light reflected from different surfaces to control a sensor.	• Activity 4, extension activity 1
ACTDEK023	Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use	• The EdBlocks program allows students to identify the properties of materials for the design and construction of a sustainable household item, for example a UV-absorbing shade-sail. • The EdBlocks program allows students to examine the materials and systems used in a public use system that affect the way people live, for example a driverless car technology.	• Activity 3, extension activity 2 • Activity 5, extension activity 2
ACTDEP028	Develop project plans that include consideration of resources when making designed solutions individually and collaboratively	• The EdBlocks program allows students to reflect on planned steps to see if improvements can be made.	• Activity 13, find the answer #3

Achievement standards summary statement

The EdBlocks program assists with the Years 5 and 6 Achievement Standard by providing a framework and activities for students to:

- Describe how design and technologies contribute to meeting present and future needs.
- Explain how the features of technologies impact on designed solutions.
- Suggest criteria for success and use these to evaluate their ideas and designed solutions.