

Digital Technologies in the Australian Curriculum

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Overview

- Curriculum development process
- Australian Curriculum: Technologies
- Key ideas
- Implementation and resources

Curriculum development process

Learning for life

Australian governments committed to working in collaboration to promote equity and excellence in Australian schooling, with school sectors supporting all young Australians to become

- successful learners
- confident and creative individuals
- active and informed citizens.

Melbourne Declaration on Educational Goals for Young Australians

December 2008



Dimensions of the Australian Curriculum

Learning areas

- *English*
- *Mathematics*
- *Science*
- *Humanities and social sciences – history, geography, economics and business, civics and citizenship*
- *The Arts*
- *Languages*
- *Health and physical education*
- *Technologies – design and technologies, digital technologies*

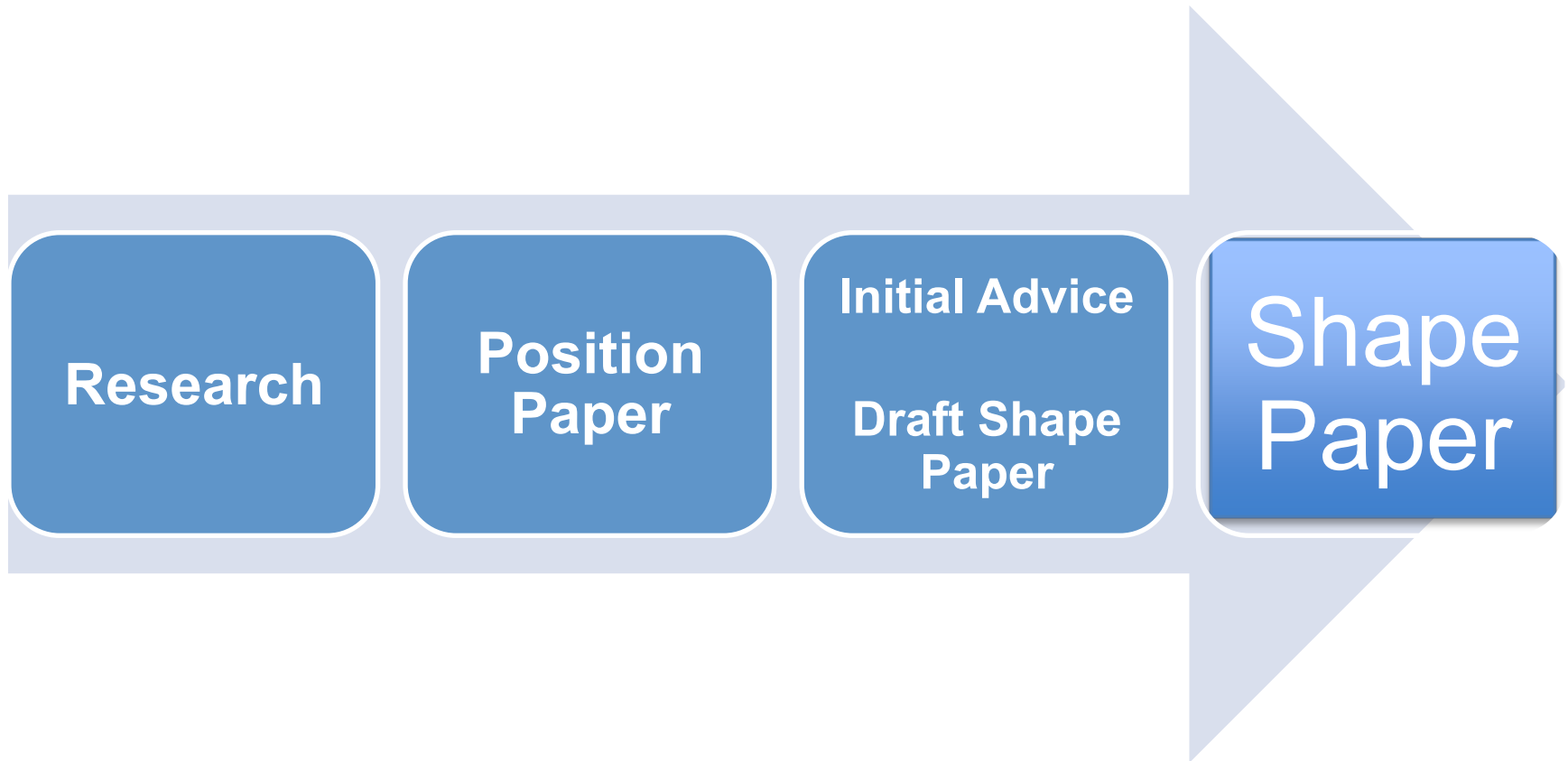
General capabilities

- *Literacy*
- *Numeracy*
- *Information and communication technology capability*
- *Critical and creative thinking*
- *Personal and social capability*
- *Ethical understanding*
- *Intercultural understanding*

Cross-curriculum priorities

- *Aboriginal and Torres Strait Islander Histories and Cultures*
- *Asia and Australia's engagement with Asia*
- *Sustainability*

Australian Curriculum: Technologies Shaping Process



Australian Curriculum: Technologies writing process

Appointment of
Writers and Advisory
group

Writing

Consultation and
Trialling

Revising

Available for use;
awaiting final
endorsement

Digital Technologies (Available for use; awaiting final endorsement)

[Rationale/Aims](#)[Organisation](#)[Design and Technologies](#)[Digital Technologies](#)

Filters

Band Levels

Strands

General capabilities

Cross-curriculum priorities

Apply filters

Clear filters

View



Show



Band descriptions



Content descriptions



Achievement standards



Icons

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Foundation to Year 2

Foundation to Year 2 Band Description

Learning in Digital Technologies builds on concepts, skills and processes developed in the Early Years Learning Framework. It focuses on developing foundational skills in computational thinking and an awareness of personal experiences using digital systems.

By the end of Year 2, students will have had opportunities to create a range of [digital solutions](#) through guided play...

[Read full description](#)

Foundation to Year 2 Content Descriptions

Digital Technologies knowledge and understanding

Identify, use and explore [digital systems](#) (hardware and software components) for a purpose (ACTDIK001)



Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (ACTDIK002)



Digital Technologies processes and production skills

Collect, explore and sort [data](#), and use [digital systems](#) to present the [data](#) creatively (ACTDIP003)



Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (ACTDIP004)



Explore how people safely use common information systems to meet information, communication and recreation needs (ACTDIP005)



Work with others to create and organise ideas and information using information systems, and share these with known people in safe online environments (ACTDIP006)



Foundation to Year 2 Achievement Standard

By the end of Year 2, students identify how common digital systems (hardware and software) are used to meet specific purposes. They use digital systems to represent simple patterns in data in different ways.

Students design solutions to simple problems using a sequence of steps and decisions. They collect familiar data and display them to convey meaning. They create and organise ideas and information using information systems and share information in safe online environments.

Digital Technologies (Available for use, awaiting final endorsement)

🖨️ Print this page

Home / F-10 Curriculum / Technologies / Digital Technologies

Overview ▾

Foundation to Year 10 Curriculum ▴

Show/Hide Curriculum

- Band level descriptions
- Content descriptions
- Achievement standards
- Icons

🔄 Reset filters Apply filters ▾

Band Levels

- Select all
- Foundation to Year 2
- Year 3 and 4
- Year 5 and 6
- Year 7 and 8
- Year 9 and 10

Strands

- Select all
- Digital Technologies knowledge and understanding
- Digital Technologies processes and production skills

General capabilities

- Select all
- Literacy
- Numeracy
- Information and communication technology capability
- Critical and creative thinking
- Personal and social capability
- Intercultural understanding

Curriculum



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Foundation to Year 2

Foundation to Year 2 Band Description

Learning in Digital Technologies builds on concepts, skills and processes developed in the Early Years Learning Framework. It focuses on developing foundational skills in computational thinking and an awareness of personal experiences using digital systems.

By the end of Year 2, students will have had opportunities to create a range of digital solutions through guided play...

[Read full description](#) »

Foundation to Year 2 Content Descriptions

Digital Technologies knowledge and understanding

Identify, use and explore digital systems (hardware and software components) for a purpose (ACTDIK001)



Recognise and explore patterns in data and represent data as pictures, symbols and diagrams (ACTDIK002)



Digital Technologies processes and production skills

Collect, explore and sort data, and use digital systems to present the data creatively (ACTDIP003)



Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems (ACTDIP004)



Explore how people safely use common information systems to meet information, communication and recreation needs (ACTDIP005)



Work with others to create and organise ideas and information using information systems, and share these with known people in safe online environments (ACTDIP008)



Foundation to Year 2 Achievement Standard

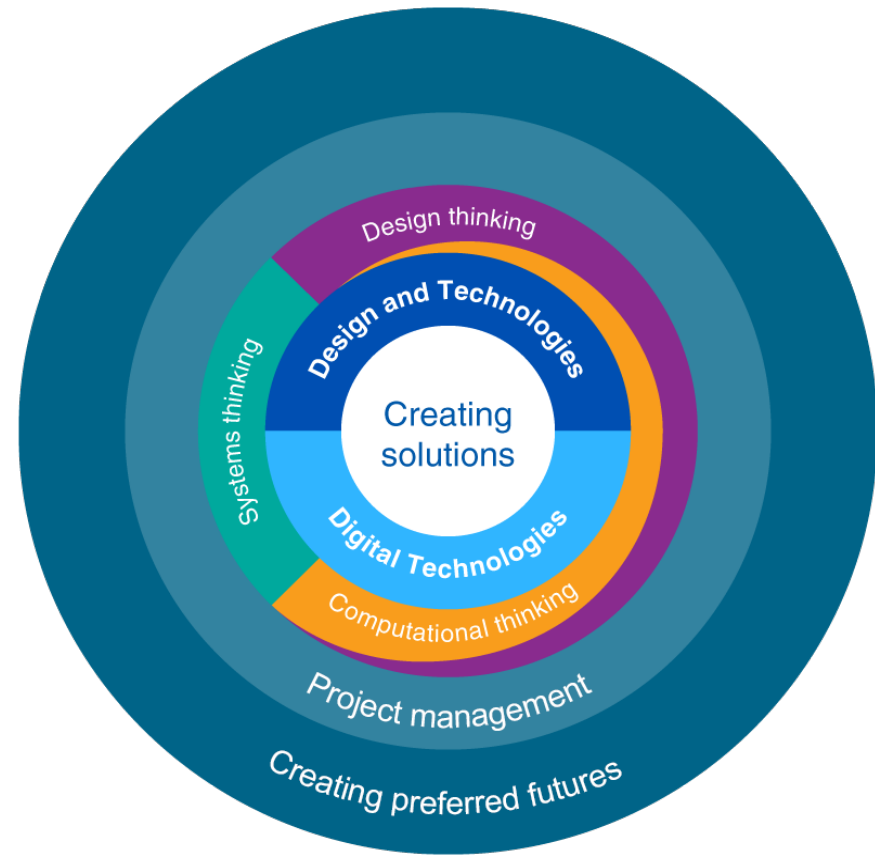
By the end of Year 2, students identify how common digital systems (hardware and software) are used to meet specific purposes. They use digital systems to represent simple patterns in data in different ways.

Australian Curriculum: Technologies

Technologies curriculum

Curriculum has been developed:

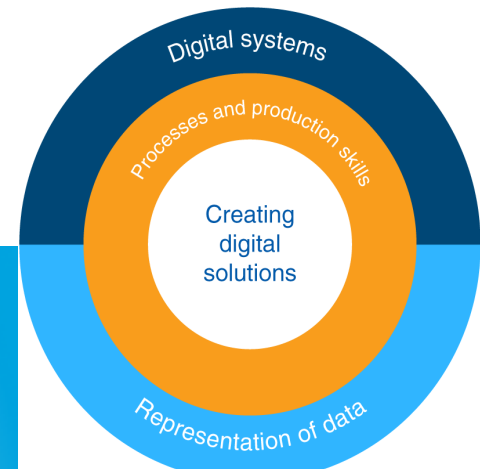
- from Foundation to Year 8 in two subjects: Design and Technologies and Digital Technologies
- from Years 9 to 10 in two optional subjects: Design and Technologies and Digital Technologies



Digital Technologies structure

Comprises two related strands:

- Digital Technologies knowledge and understanding – the information system components of data, and digital systems (hardware, software and networks)
- Digital Technologies processes and production skills – using digital systems to create ideas and information, and to define, design and implement digital solutions, and evaluate these solutions and existing information systems against specified criteria.



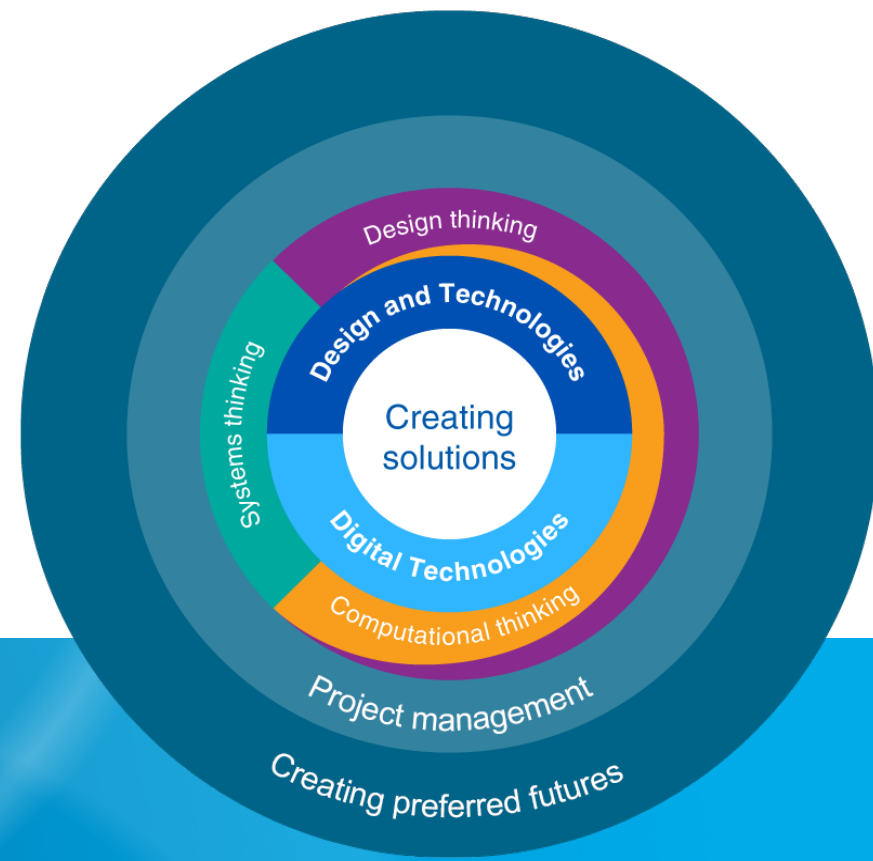
ICT in the Australian Curriculum

- the capability assists students to become effective *users* of ICT
- the Digital Technologies curriculum assists students to become confident *creators* of digital solutions

Key ideas

Key ideas

- Creating preferred futures
- Project management
- Types of thinking:
 - systems thinking
 - design thinking
 - computational thinking



Computational thinking

- underpins learning in Digital Technologies and is used in Design and Technologies
- problem-solving method that is applied to create solutions that can be implemented using digital technologies
- involves integrating strategies, such as organising data logically, breaking down problems into parts, interpreting patterns and models and designing and implementing algorithms.

Key concepts

A number of key concepts underpin the Digital Technologies curriculum:

- **Abstraction**, which underpins all content, particularly the content descriptions relating to the concepts of *data representation* and *specification, algorithms and implementation*
- **Data collection** (properties, sources and collection of data), **data representation** (symbolism and separation) and **data interpretation** (patterns and contexts)
- **Specification** (descriptions and techniques), **algorithms** (following and describing) and **implementation** (translating and programming)
- **Digital systems** (hardware, software and networks and the internet)
- **Interactions** (people and digital systems, data and processes) and **impact** (impacts and empowerment).

Implementation and resources

Implementation

- Facilitating implementation support discussions with stakeholders: professional learning, initial teacher education and resources
- Developing work sample portfolios
- Working with ESA to identify resources on Scootle to support content descriptions

Implementation discussion

- Australian Computer Society
- Australian Council for Computers in Education
- Australian Council for Deans of Education
- Australian Council of Deans of ICT
- Australian Institute for Teaching and School Leadership (AITSL)
- Information Technology Industry Innovation Council
- National ICT Australia (NICTA)
and Group X National (Digital Careers)
- Australian Information Industry Association (AIIA)
- Education Services Australia
- CSIRO Education
- Office of the Chief Scientist

Design and Technologies (Available for use: awaiting final endorsement)

Technologies / Design and Technologies / Foundation to Year 2 / Design and Technologies knowledge and understanding

Content description	Elaborations
Explore how technologies use forces to create movement in products	<ul style="list-style-type: none"> exploring how the principles of push and pull are used in the design of toys, for example in a spinning toy such as an Aboriginal mammandur identifying, and playing and experimenting with, components such as wheels, balls, slides, springs and available local materials, tools and equipment to solve problems requiring movement selecting materials to demonstrate how material properties are appropriate for particular designed solutions, for example materials that enable sliding or floating exploring a system such as a marionette or Indonesian wayang kulit shadow puppet to see that by combining materials with forces movement can be created combining materials and using forces in design, for example designing the door on a cage or a simple conveyor belt to move materials short distances exploring how to manipulate materials using a range of tools, equipment and techniques to create movement, for example when constructing a toy boat that floats and moves

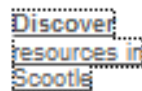
Code

ACTDEK002

ScOT catalogue terms

[Engineering](#) ; [Mechanical energy](#)

Resources



environments and consider sustainability to meet personal and local community needs (ACTDEK001)

realise [designed solutions](#) (ACTDEP005)

Visualise, generate, develop and communicate design ideas through describing


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Refine

Year level

- All levels
 F-2 7-8
 3-4 9-10
 5-6 11-12

Resource type

- All types
 Learning Object
 Image
 Audio
 Video
 Collection
 Teacher resource
 Assessment resource
 Dataset
 Text

Learning area

Your search returned 204 results

Sort by: | [Relevance](#) | [Title](#) | [Rating](#) | [Popularity](#)

Classroom resources [201]; Teacher reference materials [3];

Sourced from: Direct from publishers [3]; The Learning Federation [172]; Web [29];

Listed under: [Arts > Design](#)

Listed under: [Technologies > Design](#)

1 2 3 4 5 6 7 8 9 10 11 Next

 Select all



Tai hao le! My house: contents and parts

Explore the names of objects in a house. Find objects such as a chair, table, television or door. This learning object is the first in a series of three objects. The series is also packaged as a combined learning object.

TLF-ID
L3420

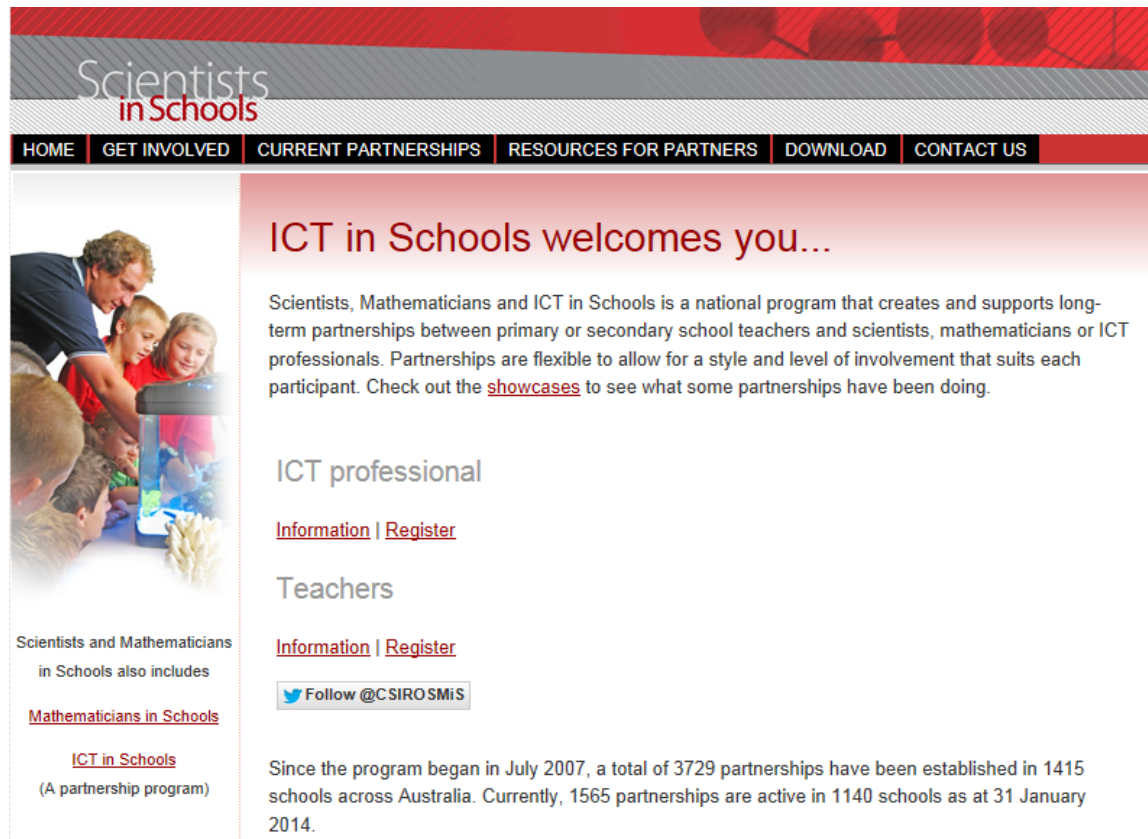


Tai hao le! My house: where coloured things are

Explore the location of objects around a wizard's table. Position objects around the table. Apply prepositions such as under, beside and behind. This learning object is the last in a series of three objects. The series is also packaged as a combined learning object.

TLF-ID
L3420

Mentors



The screenshot shows the homepage of the Scientists in Schools website. At the top, there is a red header with the text "Scientists in Schools" in white. Below the header is a navigation bar with links: HOME, GET INVOLVED, CURRENT PARTNERSHIPS, RESOURCES FOR PARTNERS, DOWNLOAD, and CONTACT US. The main content area features a large image of a man and children looking at a computer screen. To the right of the image, the text reads "ICT in Schools welcomes you..." followed by a paragraph describing the program. Below this, there are sections for "ICT professional" and "Teachers", each with links for "Information" and "Register". A Twitter follow button for @CSIROSMiS is also present. At the bottom, a paragraph states that since the program began in July 2007, a total of 3729 partnerships have been established in 1415 schools across Australia, with 1565 active as of 31 January 2014.

Scientists
in Schools

HOME GET INVOLVED CURRENT PARTNERSHIPS RESOURCES FOR PARTNERS DOWNLOAD CONTACT US

ICT in Schools welcomes you...

Scientists, Mathematicians and ICT in Schools is a national program that creates and supports long-term partnerships between primary or secondary school teachers and scientists, mathematicians or ICT professionals. Partnerships are flexible to allow for a style and level of involvement that suits each participant. Check out the [showcases](#) to see what some partnerships have been doing.

ICT professional

[Information](#) | [Register](#)

Teachers

[Information](#) | [Register](#)

[Follow @CSIROSMiS](#)

Scientists and Mathematicians in Schools also includes [Mathematicians in Schools](#)

[ICT in Schools](#)
(A partnership program)

Since the program began in July 2007, a total of 3729 partnerships have been established in 1415 schools across Australia. Currently, 1565 partnerships are active in 1140 schools as at 31 January 2014.

Student activities



Bebras Challenge <http://www.bebras.edu.au/>

Code Club Australia <http://codeclubau.org/>



Young ICT Explorers www.youngictexplorers.net.au

GROK learning offers courses and competitions:

National Computer Science School

National Computer Science Challenge

Hour of code <https://groklearning.com>



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More information

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