

DTiF

Digital Technologies in focus

Initiative of and funded by the Australian Government Department of Education and Training

acara AUSTRALIAN CURRICULUM,
ASSESSMENT AND
REPORTING AUTHORITY

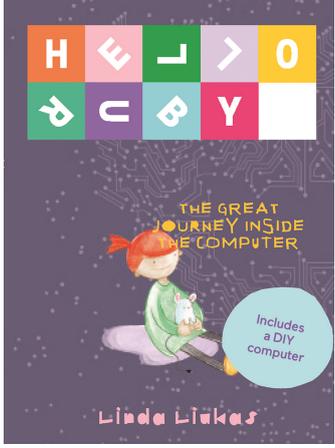
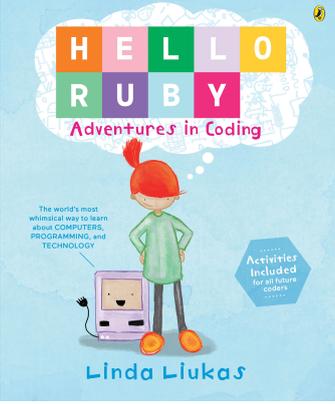


BOOKS FOR EXPLORING DIGITAL TECHNOLOGIES CONCEPTS

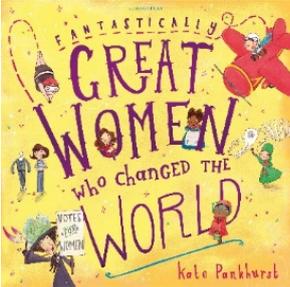
To implement the Australian Curriculum: Digital Technologies, equipment or materials that will allow students to identify and discuss key concepts, key ideas and related ways of thinking are required. The following list is an indicative sample only*. ACARA advises teachers to use their own judgement as to the value of the references for their teaching context and, also, to use the list as a model for identifying other appropriate materials. Search online for more information about these books such as International Standard Book Number (ISBN), reviews and videos of discussions or readings*.

See <https://www.australiancurriculum.edu.au/resources/digital-technologies-in-focus/> for further resources and support materials.

Book details	Age group	Digital Technologies key concepts and key ideas
Name: <i>Kids get coding: our digital world</i> Authors: Heather Lyons and Elizabeth Tweedale Publisher: Wayland, 2016 Description: An explanatory text with quick activities for children to do as they read.	4–7 years	<ul style="list-style-type: none">algorithms (following and describing)digital systems (hardware, software, and networks and the internet) <i>computational thinking (CT)</i>
Name: <i>Kids get coding: learn to program</i> Authors: Heather Lyons and Elizabeth Tweedale Publisher: Wayland, 2016 Description: A basic introduction to programming. The extension activities may be challenging but are useful to work towards mastery.	4–7 years	<ul style="list-style-type: none">abstractionalgorithms (following and describing)specification (descriptions and techniques) <i>computational thinking (CT)</i>
Name: <i>Kids get coding: coding, bugs and fixes</i> Authors: Heather Lyons and Elizabeth Tweedale Publisher: Lerner Classroom, 2016 Description: Explores how computers know what we want them to do. The book describes how computers receive instructions called code with the specific steps needed to perform a task. The reader will learn how to create codes, what happens when instructions are out of order, and how mistakes in code are fixed. There is a link in the book for users to go online and try coding for themselves.	4–7 years	<ul style="list-style-type: none">abstractionalgorithms (following and describing)specification (descriptions and techniques) <i>computational thinking (CT)</i>

Book details	Age group	Digital Technologies key concepts and key ideas
<p>Name: <i>Hello Ruby: the great journey inside the computer</i></p> <p>Author and illustrator: Linda Liukas</p> <p>Publisher: Penguin Random House Australia, 2017 (Melbourne, Victoria)</p> <p>Description: In this story, Ruby puts her mind to fixing her father's broken computer. Ruby and her friend Mouse go on a journey inside the computer searching for the missing Cursor. Ruby learns about computer hardware and the basic elements of the machines in our world. Using the knowledge gained in the story, readers can try some fun included activities.</p> <p>Notes: Visit www.helloruby.com for ideas, videos and free resources that link to the book. See also other titles in the Hello Ruby series.</p>	 <p>4–8 years</p>	<ul style="list-style-type: none"> • abstraction • digital systems (hardware, software, and networks and the internet) <p><i>computational thinking (CT)</i> <i>systems thinking (ST)</i></p>
<p>Name: <i>Hello Ruby: adventures in coding</i></p> <p>Author and illustrator: Linda Liukas</p> <p>Publisher: Penguin Random House Australia, 2016 (Melbourne, Victoria)</p> <p>Description: In this adventure with Ruby, readers are introduced to the basic concepts of coding. Each chapter includes activities to try along the way.</p> <p>Notes: Visit www.helloruby.com for ideas, videos and free resources that link to the book. See also other titles in the Hello Ruby series.</p>	 <p>4–8 years</p>	<ul style="list-style-type: none"> • abstraction • algorithms (following and describing) • specification (descriptions and techniques) <p><i>computational thinking (CT)</i></p>
<p>Name: <i>How to code a sandcastle</i></p> <p>Author: Josh Funk</p> <p>Publisher: Viking Books for Young Readers, 2018</p> <p>Description: A little girl named Pearl discovers the best way to make a sandcastle at the beach. This fun narrative is also an introduction to coding principles.</p>	<p>4–8 years</p>	<ul style="list-style-type: none"> • abstraction • algorithms (following and describing) • specification (descriptions and techniques) <p><i>computational thinking (CT)</i></p>
<p>Name: <i>Once upon a time ... online</i></p> <p>Authors: David Bedford and Rosie Reeve</p> <p>Publisher: Parragon, 2016</p> <p>Description: Once upon a time, a laptop arrived in Fairy-tale Land and things to do are just a click away. What will happen when the fairy-tale characters use a laptop? Will they learn a lesson in online safety?</p>	<p>4–8 years</p>	<ul style="list-style-type: none"> • impact (sustainability and empowerment) • interactions (people and digital systems, data and processes)

Book details	Age group	Digital Technologies key concepts and key ideas
<p>Name: <i>Rosie Revere, engineer</i> Author: Andrea Beaty Publisher: Harry N Abrams, 2013 Description: The story of a girl in Year 2 who wants to be a great engineer. She loves making gadgets and tries to make a machine for her great-great-great-aunt so she can fly. The story encourages readers to follow their dreams and to understand that failure is part of the inventor's (or engineer's) process.</p>	5–7 years	<ul style="list-style-type: none"> algorithms (following and describing) impact (sustainability and empowerment) <p><i>computational thinking (CT)</i> <i>design thinking (DT)</i></p>
<p>Name: <i>The most magnificent thing</i> Author: Ashley Spires Publisher: Kids Can Press, 2014 Description: A story about a little girl who is trying and failing to design the most magnificent thing. Children can learn about the design process, iteration and never giving up. Note: See the stop motion animation www.youtube.com/watch?v=GgECc3gKuTo</p>	5–8 years	<ul style="list-style-type: none"> algorithms (following and describing) specification (descriptions and techniques) <p><i>computational thinking (CT)</i> <i>design thinking (DT)</i></p>
<p>Name: <i>Peter and Pablo the printer: adventures in making the future</i> Author: Jeffrey Ito Publisher: CreateSpace Independent Publishing Platform, 2016 Description: Peter is about to turn seven years old. On his birthday he is given a 3D printer by his father. It's a special printer that is capable of printing anything ...</p>	5–8 years	<ul style="list-style-type: none"> abstraction digital systems (hardware, software, and networks and the internet) impact (sustainability and empowerment)
<p>Name: <i>Brilliant ideas from wonderful women</i> Author: Aitziber Lopez Publisher: Wide Eyed Editions, 2019 Description: Did you know that all kinds of revolutionary inventions were all pioneered by women? These include wi-fi, diagnostic tests and eBooks. Learn all about the women who invented these things in this colourful book.</p>	5–8 years	<ul style="list-style-type: none"> digital systems (hardware, software, and networks and the internet) impact (sustainability and empowerment) <p><i>computational thinking (CT)</i> <i>design thinking (DT)</i> <i>systems thinking (ST)</i></p>
<p>Name: <i>The technology tail</i> Author: Julia Cook Publisher: Boys Town Press, 2017 Description: A story about what we do online and how it creates the digital footprint we all leave behind us</p>	5 years+	<ul style="list-style-type: none"> abstraction impact (sustainability and empowerment) <p><i>computational thinking (CT)</i> <i>systems thinking (ST)</i></p>
<p>Name: <i>Grace Hopper: queen of computer code</i> Author: Laurie Wallmark Publisher: Sterling Children's Books, 2017 Description: Grace Hopper coined the term 'computer bug' and taught computers to 'speak English'. During her lifetime, she succeeded in doing things no one had ever done before. She was right at home with difficult ideas and in defying expectations.</p>	5 years+	<ul style="list-style-type: none"> impact (sustainability and empowerment) <p><i>computational thinking (CT)</i> <i>systems thinking (ST)</i></p>

Book details	Age group	Digital Technologies key concepts and key ideas
<p>Name: <i>Fantastically great women who changed the world</i> Author: Kate Pankhurst Publisher: Bloomsbury USA Children's Books, 2016 Description: Empowering stories of women who changed the world.</p> 	6 years+	<ul style="list-style-type: none"> • impact (sustainability and empowerment)
<p>Name: <i>If I were a wizard</i> Author: Paul Hamilton Publisher: Edtechtteam Press, 2016 Description: This picture book introduces the concepts of coding through a story about a boy named Ralph. It includes a glossary to aid understanding. Notes: Visit www.wizardcodingbook.com for more ideas, videos and resources. Links to the augmented reality app: Wizard AR</p>	8 years+	<ul style="list-style-type: none"> • abstraction • algorithms (following and describing) • specification (descriptions and techniques) <p><i>computational thinking (CT)</i></p>
<p>Name: <i>Computational fairy tales</i> Author: Jeremy Kubica Publisher: CreateSpace Independent Publishing Platform, 2012 Description: This book introduces a high-level overview of the breadth and excitement of computer science concepts in the form of a quest.</p>	9 years+	<ul style="list-style-type: none"> • abstraction • algorithms (following and describing) <p><i>computational thinking (CT)</i></p>
<p>Name: <i>How it works: book of amazing technology, volume 2 (magazine)</i> Author: Aaron Asadi (Editor) Publisher: Imagine Publishing, 2013 Description: From computing to engineering, gadgets to domestic appliances, discover how things work with interesting cutaways and cross-sections.</p>	10 years+	<ul style="list-style-type: none"> • abstraction • digital systems (hardware, software, and networks and the internet) • impact (sustainability and empowerment) <p><i>systems thinking (ST)</i></p>
<p>Name: <i>The way things work now</i> Author: David Macaulay Publisher: HMH Books for Young Readers, 2016 Description: Full of information on the inner workings of everything from windmills to wi-fi. Readers are guided through the fundamental principles of machines, and the developments of the past and how they are building the world of tomorrow. Also available in a board game format.</p>	12 years+	<ul style="list-style-type: none"> • abstraction • digital systems (hardware, software, and networks and the internet) • impact (sustainability and empowerment) <p><i>computational thinking (CT)</i> <i>systems thinking (ST)</i></p>

***Disclaimer:** ACARA does not endorse any product or make any representations as to the quality of such products. This resource is an indicative sample only. ACARA advises teachers and other readers to use their own judgement as to the value of the references for their teaching context and, also, to use the list as a model for identifying other appropriate materials. Any product that uses material published on the ACARA website should not be taken to be affiliated with ACARA or have the sponsorship or approval of ACARA. It is up to each person to make their own assessment of the product, taking into account matters including, but not limited to, the degree to which the materials align with the content descriptions and achievement standards of the Australian Curriculum. The Creative Commons licence below does not apply to any trademark protected material.

All images in this resource are used with permission