

Coding & Robotics

Grade 1

Term: R

Teacher Support Document



FUTUREKIDS[®]

Grade R Coding and Robotics

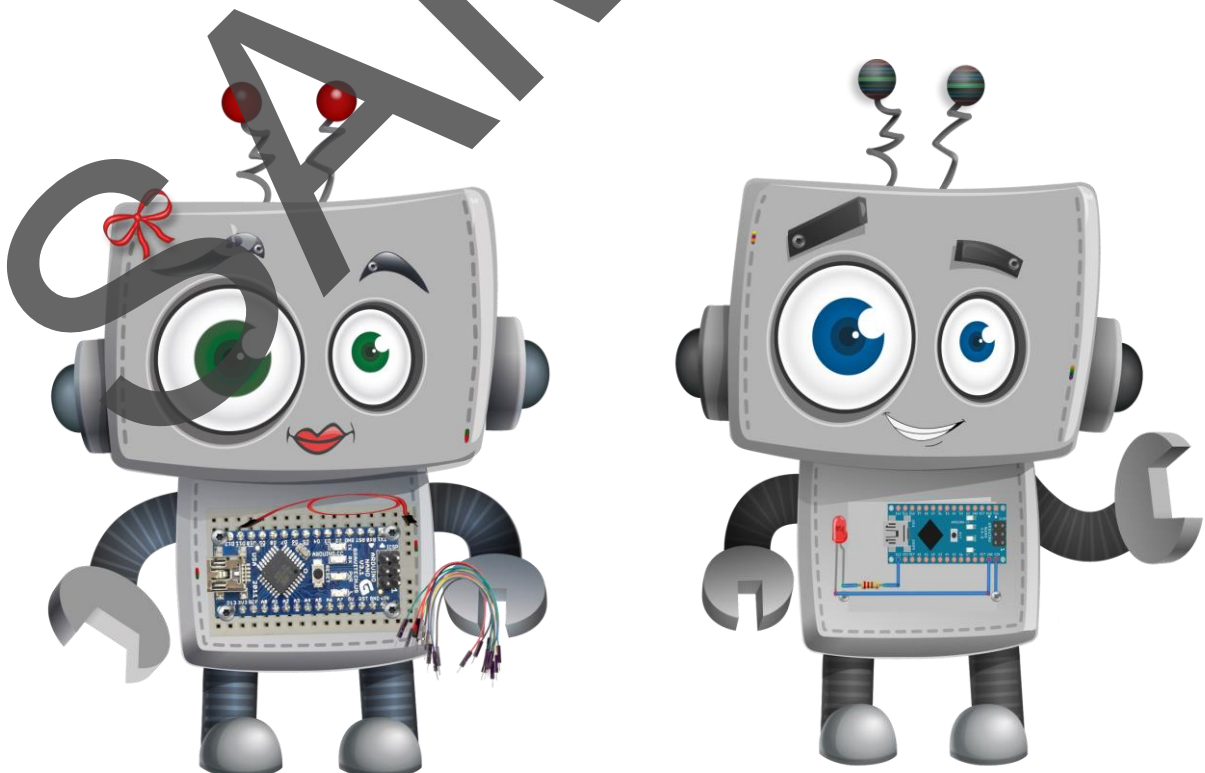
Important Notice!

All Future-Fun CAPS curricula content is the intellectual property of Futurekids SA and may not be used, published or redistributed without our written consent, and is protected by copyright laws.

It has been developed:

- firstly, according to the published CAPS documents prevailing at the time, and
- secondly, aligned with the current Annual Teaching Plan approved in South Africa.

Formal Assessment tasks have been developed according to the CAPS 2025 and are revised by Futurekids SA every 4 years. All formal assessments are available to schools in an editable format. It is, therefore, the responsibility of the educator to adapt the formal assessment according to his/her own needs on an annual basis.



High Level Competencies – Coding and Robotics

Coding	
C.1	Apply computational thinking skills to develop a set of logical instructions to solve a problem
C.2	Present a simple coding solution using symbolic or written statements representing sequence of commands, single repetition and conditional constructs
C.3	Interpret and execute a given symbolic or written set of commands
C.4	Debug a given symbolic or written set of instruction
C.5	Evaluate a given solution towards potential improvement
C.6	Recognise and interpret patterns in symbolic sets of data or visualisations
C.7	Create or complete a pattern to represent a particular data set

Robotics	
R.1	Explain what a robot is in simple terms
R.2	Identify different types of robots
R.3	Outline the different components of a robot
R.4	Present an understanding of how robots affect the world
R.5	Design a simple product based on a set of design specifications
R.6	Minic the operations of a robot
R.7	Create, test and execute a set of robotic instructions

Digital Concepts	
D.1	Outline the concept of technology and purpose of IT
D.2	Recognise that he/she is living as citizens in a digital world
D.3	Demonstrate an understanding of the concept of a computing device
D.4	Identify the common use of ICT in the real world
D.5	Differentiate between the components of an ICT system
D.6	Explain how the adaption of tech impacts the world we work and live in
D.7	Present a basic understanding of the concept of input processing and output
D.8	Interpret a pattern to represent or communicate a message or image
D.9	Create a pattern to represent or communicate a message or image
D.10	Demonstrate a basic proficiency in the application of digital skills

Outline of work for Gr R-3

Gr.	Areas	%	Min	W1	W2	W3	W4	W5	W6	W7	W8	Week 9–10
Gr R	Pattern Recognition	15%	9 min	C6	C6	C6	C6	C6	C6	C6	C6	Computer based lessons
	Algorithms & Coding	50%	30 min	C1	C1	C1	C3	C3	C2	C2	C2	
	Robotics	30%	18 min	R1	R5	R5	R5	R5	R6	R6	R6	
	Digital Concepts	5%	3 min	D2	D2	D2	D3	D3	D3	D3	D3	
Gr 1	Pattern Recognition	15%	9 min	C6	C6	C6	C6	C6	C6	C6	C6	Computer based lessons
	Algorithms & Coding	50%	30 min	C1	C1	C2	C2	C2	C3	C3	C3	
	Robotics	30%	18 min	R1	R1	R2	R2	R2	R5	R5	R5	
	Digital Concepts	5%	3 min	D2	D2	D2	D2	D3	D3	D3	D3	
Gr 2	Pattern Recognition	15%	9 min	C6	C6	C6	C6	C6	C6	C6	C6	Computer based lessons
	Algorithms & Coding	50%	30 min	C1	C1	C2	C2	C2	C3	C3	C3	
	Robotics	30%	18 min	R1	R2	R2	R5	R5	R5	R6	R6	
	Digital Concepts	5%	3 min	D1	D1	D1	D1	D2	D2	D2	D2	
Gr 3	Pattern Recognition	15%	18 min	C6	C6	C6	C6	C6	C6	C6	C6	Computer based lessons
	Algorithms & Coding	50%	60 min	C1	C1	C2	C2	C2	C3	C3	C3	
	Robotics	30%	36 min	R1	R2	R2	R5	R5	R5	R6	R6	
	Digital Concepts	5%	6 min	D1	D1	D2	D2	D3	D3	D3	D3	



Coding

In coding, the following concepts, practices, and perspectives must be developed and practised repeatedly:

Concepts	Practices	Perspectives
• Algorithm	• Abstraction	• Expressing and Creating
• Sequence	• Decomposition	• Questioning
• Loop (Iteration)	• Pattern Recognition	• Connecting
• Conditional (Decisions)	• Generalisation	• Collaboration
• Operator	• Algorithm Design	• Perseverance
• Logic	• Incremental Development	• Choice of Conduct
• Data	• Testing and Debugging	
• Event	• Evaluation	
• Debug	• Modularise	
• Representation	• Logical Thinking	
• Parallelism	• Creating Computational Artefacts	
• Automation		



Robotics

In robotics, the following concepts, practices, and perspectives must be developed and practised repeatedly:

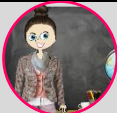
Concepts	Practices	Perspectives
• Motion	• Computational Thinking	• Expressing and Creating
• Sensor	• Design Thinking	• Innovation
• Actuator	• Prototyping	• Questioning
• Controller	• Design and Construction	• Connecting
• Logic	• Algorithm Design	• Collaboration
• Power Source	• Testing and Reconfiguration	• Perseverance
• Automation	• Reflection and Iteration	• Choice of Conduct
• Instruction	• Creative Thinking	
• Communication	• Logical Thinking	
• Coding (Programming)	• Creating Robotics Artefacts	



Digital Concepts

• Digital Citizenship	• Digital Awareness	• Digital Skills
Develop an awareness of responsible and ethical behaviour in the digital world, which includes the responsible and ethical use of digital tools.	The recognition of the competencies, expertise, and mindset necessary for individuals to effectively use digital tools.	The ability to effectively use digital devices, software, and platforms to perform various tasks.

Abbreviations and Descriptions

Abbreviations	Descriptions	Abbreviations	Descriptions
General Abbreviations			
PPT C	Presentation with Content		Algorithm and Coding
PPT Q	Presentation with Questions		Pattern Recognition
PPT CQ	Presentation with Content and Questions		Digital Concepts
PPT FC	Presentation with Flashcards		Robotics
V	Video		Grade R Workbook
	Teacher's Sheet/ Teacher's Guide	t	Template
E	Enrichment	s	Sample
Printed Copies			
TSD	Teacher Support Document	WS	Worksheets
SN	Study Notes	MEMO	Memorandum
WB	Workbook		
Icons			
	Picture Folder		Games
	Video		

Coding and Robotics – Term 1

CRG1T1T1W1	Week 1: All about Myself	Pg. 9
CRG1T1T1W2	Week 2: Me and my School	Pg. 10
CRG1T1T1W3	Week 3: In the Classroom	Pg. 11
CRG1T1T2W4	Week 4: My Body	Pg. 12
CRG1T1T2W5	Week 5: Books and Days	Pg. 13
CRG1T1T3W6	Week 6: Healthy Habits	Pg. 14
CRG1T1T1W7	Week 7: Summer and Friends	Pg. 15
CRG1T1T1W8	Week 8: Shapes and Colours	Pg. 16

CAPS Formal Assessment

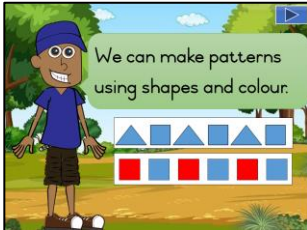
Assessment Guide: CRGRT1AG

Section A: CAPS Formal Assessment

CRGRT1AG	Assessment Guide	Pg. 17
	Assessment Plan	Pg. 17
	Assessment Detail	Pg. 17
	Scoresheet	Pg. 17
	Learner Summary	Pg. 17

Section B: Assessment Tools and Instruments

CRGRT1AG	Assessment	Pg. 17
----------	------------	--------

Week	Resources	Content	Type of Resources	Comp Think	Design Thinking	Approach to Teaching
Week 1: All about myself (1 hour) 	01 Patterns 02 Patterns 03 Sequencing 04 Sequencing 05 What are robots? 06 Robots	• Pattern Recognition • Algorithms & Coding • Robotics • Digital Concepts C6 C1 R1 D2	V PPT CQ V PPT CO V PPT CQ	Pattern recognition	Define	Problem based learning
Integration of other subjects	Life Skills: Emphasise the Life Skills theme	Languages: Learn new vocabulary	Maths: Pattern recognition & sequence			
FFC Workbook	Pg. 3–5	FFC Teacher’s guide	Pg. 5–9			
Assessment task	Complete a pattern	Formal/Informal	Informal 07 Practical Teacher’s Sheet			
	Put pictures in a sequence	Assessment tool:	Worksheet			
	Identify robots					
Barriers experienced		Support given				
Expanded opportunities		Lesson Reflection (What went well? What did not go well? What would you change?)				
Date completed and signature						

Theme	Resources	Content	Type of Resources	Specific Aims	Comp Think	Tech Process	21 C Comp
Week 2: Me and my school <i>(1 hour)</i> 	01 Patterns	• Pattern Recognition C6 • Algorithms & Coding C1 • Robotics R1 • Robotics R5 • Digital Concepts D2 • Digital Concepts D8	V	Pattern recognition		Problem based learning	
	02 Patterns		PPT CQ				
	03 School bus		V				
	04 Sequencing		PPT CQ				
	05 Boy		V	Define			
	06 Robots		PPT CQ				
Integration of other subjects	Life Skills: Emphasise the Life Skills theme	Languages: Learn new vocabulary	Maths: Pattern recognition & sequence				
FFC Workbook	<i>Pg. 6–8</i>	FFC Teacher’s guide	<i>Pg. 10–14</i>				
Assessment task	<i>Create a pattern</i>	Formal/Informal	<i>Informal 07 Practical Teacher’s Sheet</i>				
	<i>Put pictures in a sequence</i>	Assessment tool:	<i>Worksheet</i>				
	<i>Practical activity on and off</i>						
Barriers experienced		Support given					
Expanded opportunities		Lesson Reflection (What went well? What did not go well? What would you change?)					
Date completed and signature							

Section A: CAPS Formal Assessment			
Task	Description	Media	Date
Assessment Guide	01 CRG1T1 Guideline	WP	
Assessment Plan	02 CRG1T1 Assessment Plan	WP	
Assessment Detail	03 CRG1T1 Assessment Detail	WP	
Scoresheet	04 CRG1T1–4 Scoresheet	SS	
Learner Summary	05 CRG1T1 Learner Summary	WP	
Section B: Assessment Tools and Instruments			
Task	Description	Media	Date
Task 1	01 Test	WP	
	02 Test Memorandum	WP	