Shell Cove Public School

Science and Technology Scope & Sequence

Early Stage One

Science			Early Stage 1 Even Year	
	Outcomes + Thinking Skills	**Inquiry Questions**	**Unit Content**	**Assessment**
1	- **STe-3LW-ST -** Explores the characteristic, needs and uses of living things Working Scientifically - **STe-1WS-S -** Observes, questions and collects data to communicate ideas • Planning conducting investigations • Communicating - Scientific Thinking – SciT - Design Thinking – DesT	- What do we notice about living things? - How can living things be used to meet our needs?	**Living World** Primary Connections Unit: Farm Diaries - Recognises that living things have basic needs including air, food and water. - Recognises that plants and animals can be used as food, or materials (fibres) for clothing and shelter. Working Scientifically - Poses and responds to questions about familiar objects and events. - Uses senses to make observations through participation in guided scientific investigations.	- Week 5: Pre-test - Week 10 Post-test: Verbal Assessment **Phase/Assessment Focus:** - Engage- Diagnostic - Explore/ Explain – Formative - Elaborate – Summative of Science Inquiry Skills - Evaluate - Summative of Science Understanding - See specific details in the unit.
2	- **STe-6ES-S -** Identifies how daily and season changes in the environment affect humans and other living things Working Scientifically - **STe-1WS-S -** Observes, questions and collects data to communicate ideas • Questioning and Predicting • Processing and Analysing • Identifying and Producing (Design and Production) - Computational Thinking – ComT - Scientific Thinking – SciT - Systems Thinking- SysT	- How do daily and season changes affect humans and living things?	**Earth and Space** Primary Connections Unit: Weather in my world - Identifies daily and seasonal changes that occur in our environment, such as day and night, and changes in the weather. - Explores how animals migrate and/or hibernate. - Observes, ask questions about and describes changes in objects and events. Working Scientifically - Works collaboratively with others to investigate ideas. - Develops safe skills when using materials and equipment.	- Week 1 Pre-test - Week 5 Mid-test (Reports) - Week 10 Post-test **Phase/Assessment Focus:** - Engage- Diagnostic - Explore/ Explain – Formative - Elaborate – Summative of Science Inquiry Skills - Evaluate - Summative of Science Understanding - See specific details in the unit.

3	- **STe-4MW-ST -** Identifies that objects are made of materials that have observable properties. Working Scientifically - **STe-1WS-S -** Observes, questions and collects data to communicate ideas. • Planning and Conducting Investigations • Processing and analysing data - Design Thinking – DesT - Scientific Thinking- SciT	- What are some of the observable properties of materials? - How do the properties of materials affect their use?	**Material World** Primary Connections Unit: What's it made of? - Observes and describes some properties of a range of materials. - Identifies and describes how the properties of different materials suit their design purpose. - Plans, designs and evaluates a product considering an identified need or opportunity. Working Scientifically - Engages in discussions about observations. - Represents ideas based on results of investigations.	- Week 1 Pre-test - Week 10 Post-test **Phase/Assessment Focus:** - Engage- Diagnostic - Explore/ Explain – Formative - Elaborate – Summative of Science Inquiry Skills - Evaluate - Summative of Science Understanding - See specific details in the unit.
4	- **STe-5PW – ST -** Observes the way objects move and relates to changes in motion and push and pull forces. Working Scientifically - **STe-1WS-S** - Observes, questions and collects data to communicate ideas • Questioning and Predicting • Planning and Conduct Investigations - Scientific Thinking- SciT	- What causes objects to move in different ways?	**Physical World** Primary Connections Unit: On the Move - Observes the ways a variety of familiar objects move, such as, sliding, rolling, spinning and bouncing. - Observes how familiar objects start, stop, change speed or direction and change in shape. - Participates in guided investigations to explore how particular objects move on land, water and in the air. Working Scientifically - Records observations using drawings, simple digital recording methods, oral descriptions and/or simple visual representations. - Shares observations and ideas based on guided investigations.	- Week 1 Pre-test - Week 5 Mid-test (Reports) **Phase/Assessment Focus:** - Engage- Diagnostic - Explore/ Explain – Formative - Elaborate – Summative of Science Inquiry Skills - Evaluate - Summative of Science Understanding - See specific details in the unit.
	STe-2DP-T **STe-7DI-T**	ICT Skills & understanding + digital citizenship Digital Technologies Design and Production + Real World Problem	**See Technology + STEM Scope and Sequence**	

Technology + STEM			**Early Stage 1**	
	Outcomes + Thinking Skills	**Inquiry Questions**	**Unit Content**	**Assessment**
1	- **STe-2DP-T -** Develops solutions to an identified need. - Design Thinking – DesT - Computational Thinking - ComT	- How are digital technologies used in everyday life? Authentic Link with Living World = Droughts + Digital Citizenship	**Design and Production** **Unit: Online Safety + Hardware and Software** - Explores how people safely use information systems to meet information, communication and recreation needs. - Identifies the technologies needed to achieve designed solutions.	- Week 5: Pre-test: Verbal Assessment - Week 10 Post-test: Verbal Assessment **Ongoing** - Photos or work samples - Evidence of learning against goals - Diagnostic checklist – ICT Skills)
2	- **STe-7DI-T -** Identifies digital systems and explores how instructions are used to control digital devices. - Computational Thinking- ComT - Systems Thinking - SysT	- How does following steps help to achieve a goal? Authentic link with Earth and Space = Changes in the sky and land	**Digital Technology** **Unit: Intro to Algorithms** - Follow a sequence of steps and decisions (algorithms) needed to solve problems. - Designs a set of instructions to get from one point to another.	- Week 1 Pre-test - Week 5 Mid-test (Reports) - Week 10 Post-test **Ongoing** - Photos or worksamples - Evidence of learning against goals - Diagnostic checklist – ICT Skills)

3	- **STe-2DP-T -** Develops solutions to an identified need. - Design Thinking – DesT - Computational Thinking - ComT	- How can we help to solve a real world problem? Authentic link with Material World = How can we make our playground fun and inclusive and safe?	**Design and Production** **Unit: Real World Problem Solving** - Considers available resources when planning design solutions. - Generates and expresses ideas for design possibilities	- Week 1 Pre-test - Week 10 Post-test **Ongoing** - Photos or worksamples - Evidence of learning against goals - Diagnostic checklist – ICT Skills)
4	**STe-7DI-T -** Identifies digital systems and explores how instructions are used to control digital devices • Systems Thinking- SysT	- How does following steps help to achieve a goal? Authentic link with Physical World = Instruments for the deaf or hard of hearing	**Digital Technology** **Unit: Data is all around us** - Sequences steps to solve a problem when using a device - Collaborates to improve ideas and solve a problem.	- Week 1 Pre-test - Week 5 Mid-test (Reports) **Ongoing** - Photos or worksamples - Evidence of learning against goals - Diagnostic checklist – ICT Skills)
ALL	ICT Skills – see checklist below two weeks on two weeks off			

Kindergarten Learning Continuum

A huge thankyou to Steph Westwood and Glenys Goffet for these pages.

Creating -Multimedia	ES1
(using software /iPad /Wacom/online programs)	
Use a paint/draw program	K
Identify tool bar	i
Use tools e.g. fill, brush, pencil	i
Use colour palette	i
Delete an object	i
Print a drawing	i
Use Peripherals	K
Use an iPad	i
Use a Wacom tablet	i
Use digital camera (still/movie)	i
Use a microphone	i

Communicating – Word Processing	ES1
Manipulate documents	K
Use drop down menus	i
Open/Close file	i
Save file - with help	i
Name file - with help	i
Enter & modify text	K
Enter text	i
Select - highlight text	i
Delete text (letters, words)	i
Modify text - colour; size; font	i
Print documents	K
Print completed documents (with help)	i
Add graphics	K
Insert pictures	i
Manipulate pictures - size; position; order	i

Creating -Robotics	ES1
Describe different sorts of robots	K
Real & fictional	i
Program a Robot	K
Become familiar with program interface	i
Program robotic to move; fwd/bwd/left/ right	i
Program robot to complete a set of challenges	i
Test & modify program	i
Build a Robot	K
Use materials provided to build a robot	i
Test robot	i
Modify build	i
Observe & discuss function	i
Unplugged Robotics	K
Create symbols	i
Program "robot" to follow your instructions	i
Test & modify programme	i

Ethics/Cybersafety	ES1
Shows appropriate ethical conduct	K
Follows school computer policy	i
Use "safe" habits when using technology to ensure personal safety and security of private information	i
Well being	K
Correct posture	i
Holding mouse	i
Careful use of equipment	i

Creating - Coding	ES1
What is Coding?	K
Introduction to coding – what is it?	i
SYMBOL BASED CODING	
Understanding symbol commands	K
Recognising Fwd, bwd, turn left, turn right	i
Create Coding – Symbol based	K
Planning	i
Program robot to move - fwd,/bwd, left/right	i
Developing a sequence	i
Running a sequence	i
Modify coding - Problem solving	i
Symbol Based Applications	K
• **iPad apps** (BeeBot/CodeAPillar/LightBox/ALEX/Kodable)	i
• **online software**	i
• **BeeBots**	i
• **Code-A-Pillar**	i
BLOCK BASED CODING	K
Planning (may be hands on for juniors)	i
Developing a sequence	i
Using code blocks	i
Functions	i
Parameters	i
Create actions – simple	i
Block Based Applications	K
• **iPad apps** (Tynker; Daisy; Hopscotch)	i
• **web based** (Scratch; Hour of Code/code.org)	i

Investigating	ES1
Using the internet	K
Open browser	i
Find a specific location	i
Use "back, forward, home, close & refresh."	i
Using the school domain	K
Log in to computer	i
Find a specific programme	i
Open; close; minimise; maximise	i
Changes Portal password	
Uses Portal for simple email	
Using email	K
Open portal	i
Open mail program	i
Compose & send an email (with help)	i
Read an email	i
Reply to an email	i

Creating - iPads	ES1
Use an iPod/Pad	K
On/Off; Use slide wake	i
Slide to change screens	i
Opening apps	i
Operating apps	i
Closing apps	i
Looking after iPad	i

Communicating – Typing Skills	ES1
Sit straight in chair	i
Keep feet flat on the floor	i
Have body one outstretched hand width from keyboard	i
Have wrists in straight position	i
Identify the home row	i
Place hands on the home row	i

Managing/Operating	ES1
Identify technology equipment	K
Keyboard & Mouse	i
Monitor	i
Printer	i
Hard Drive	i
Data Projector/IWB	i
Laptop	i
Digital Camera	i
iPad	i
Care & use of technology equipment	K
Move mouse	i
Click & double click mouse	i
Identify letters on the keyboard	i
Select & move objects	i
Use special keys - enter/space bar	i
Manage files – name/save/open/delete	i
Turn computer on/off	i
Correct posture	i
Access & exit software/apps	i
Print files	i
Understand terms	K
Cursor	i
Software/Hardware	i
Internet	i
Menu	i
Open/Close program or app	i
Login & Password	i
Tool bar/scroll bar	i
Software Skills	K
Locate software/app	i
Select/Open/Close	i

Communicating – Typing Skills	ES1
Locate new key on the keyboard	i
Make correct reach to new key	i
Use correct fingering for alphabet keys	i
Use quick gentle stroke for keys	i
Keep eyes on the copy	i
Use punctuation keys(.)	i

i– skill is introduced *r – skill is reinforced* *skill is used independently*