



**12 Lessons (24 Cards - 30 minute projects)  
Learning Objectives**

Lesson 1: Cards 1, 2	Create a number game for juniors Draw a Sprite (a Lily pad Graphic) Make cloned sprites touch your sprite
Lesson 2: Cards 3, 4	Draw regular polygons (inc. a circle) Draw shapes in a sum copy and in code Reuse an algorithm with changed data
Lesson 3: Cards 5, 6	Plot a Circle from its Centre on a Grid Draw circles in a sum copy and in code Tweak the code to explore new options
Lesson 4: Cards 7, 8	Draw rectangles for Area & Perimeter Correlate copybook and code Use the slider to set variable values
Lesson 5: Cards 9,10	Scratch Skill: New sprite from existing Apply <i>random</i> attributes to the pen Code a colourful dotted bee-line
Lesson 6: Cards 11,12	Understand division & remainders Solve problems with the <i>mod</i> reporter Code long division problems
Lesson 7: Cards 13,14	Report coordinates on the grid Understand Boolean logic Create code to check for even numbers
Lesson 8: Cards 15,16	Show Times tables as Rows and Columns Make a sprite recite Times tables Create a random list of Multiples
Lesson 9: Cards 17,18	Rotate shapes to make designs Create nested repeat loops Explore angles in circular designs
Lesson 10: Cards 19	Create a number game for juniors Draw sprites (eggs in a nest) Make cloned sprites touch your sprite
Lesson 11: Cards 20, 21,22	Draw Game Dice sprites (6 costumes) Gather data for a Block Graph Code a self-draw Block Graph
Lesson 12: Cards 23,42	Code control & collision in a Game (1) Code a Timer and Score in a Game (2) Code count up and count down variables

**Maths Labels Aligned to the Flip-Cards**

NUMBER:	Cards: 2, (11,) 12, 15, 16, 19
SPATIAL AWARENESS:	Cards 17, 18
SHAPE:	Cards 3, 4, 5, 6, (7,) 17, 18
ALGEBRA:	Cards 13
MEASUREMENT:	Cards 7, 8
DATA:	Card: 22,

**COMPUTATIONAL THINKING CONCEPTS  
for 10-11 Year Olds using SCRATCH CODE**

When it comes to Scratch, Computational Thinking can be described as the learning and development that takes place with Scratch. In their definition, the developers of Scratch see it as a set of concepts, practices and perspectives. The concepts can be listed as: **sequences, loops, parallelisms, events, conditionals, operators** and **data**. For 10-11 year olds all the computational thinking concepts can be identified with a colourful code block in one of the Scratch palettes. The concepts are listed showing where they are used during the lessons.

(Card Numbers in brackets)

- Sequence** Move / Rotate (Loop, GRID 3,4, 5),  
Move (Loop, Variable, GRID 7, 8, 17),  
User Input/ Output (using ask 2, 12, 14),  
User Interaction (the keyboard, GRID 13),  
Rows /Columns (slider Variable, GRID 15),  
Variables and Lists (randomised 16),  
Clone (in a Loop 2, 15, 19),  
Broadcast (8, 14, 21, 22),  
Sprite interaction (conditional 10),
- Loops** Forever loop (with conditionals 10, 12, 13, 14),  
Repeat loop (with variable 2, 19),  
Nested loops (with offsets 15, 17, 18),  
Repeat until (with Boolean condition 14,16)
- Parallelism** Flag clicked (2 + many)  
**Events** Flag click (all), Key press (3 + many),  
Sprite click (7, 12),  
Send/Receive Broadcast (6, 8, 14, 15, 21),  
Start as a clone (2, 19),
- Conditionals** If/Then If<touching sprite> (10),  
If<Greater/ Equal/ Less, AND, OR> (13),  
If/Then/Else If <correct input> (12),  
(multiples conditions 13),  
Wait until <touching sprite> (2, 19),
- Operators** Arithmetic: +, -, x, ÷ (in combinations 3, 11, 12),  
equality/inequality Greater/ Equal/ Less, AND, OR  
(16, 17), mod ( expressions with Remainders 11, 12),  
mod (for ODD, EVEN numbers 14),  
Join (to concatenate data 7, 8, 13, 14, 15),  
pick random (9, 10, 19, 21, 23, 24)
- Data** Variables: Make, Set, Change (2 + many, match a  
Grid Size 7, 8, 15 ), use in Boolean Logic (14),  
Set Min & Max of slider variable (5, 6, 20 ),  
Lists: Create with a Variable, (list items) Delete,  
Add, Insert, Randomise (16)

LOGICAL REASONING:	Cards 9, 11, 14, 21, 23, 24
Scratch GRAPHIC EDITOR SKILLS:	Card: 1, 10, 20