



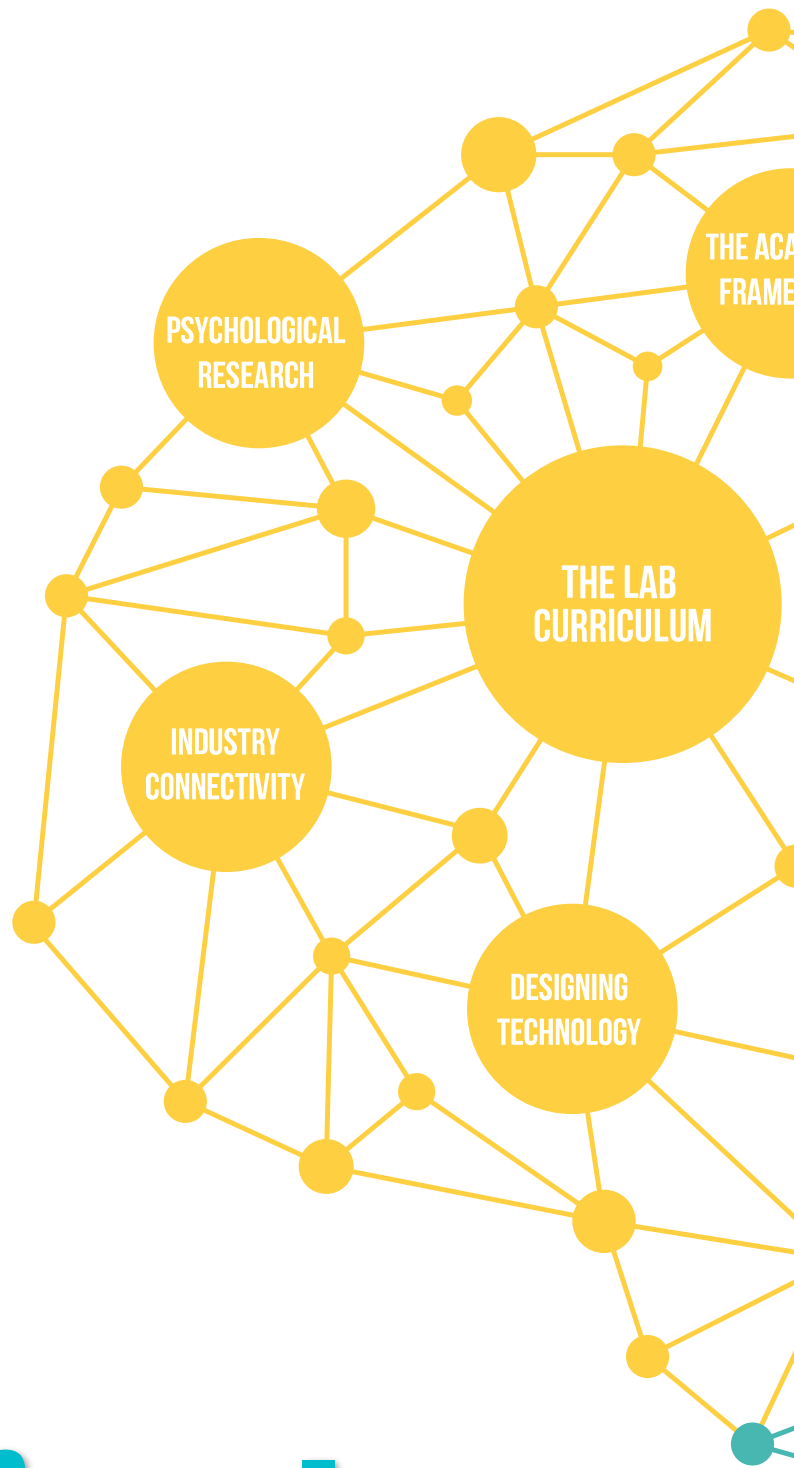
THE LAB

LEARNING WITHOUT BOUNDARIES

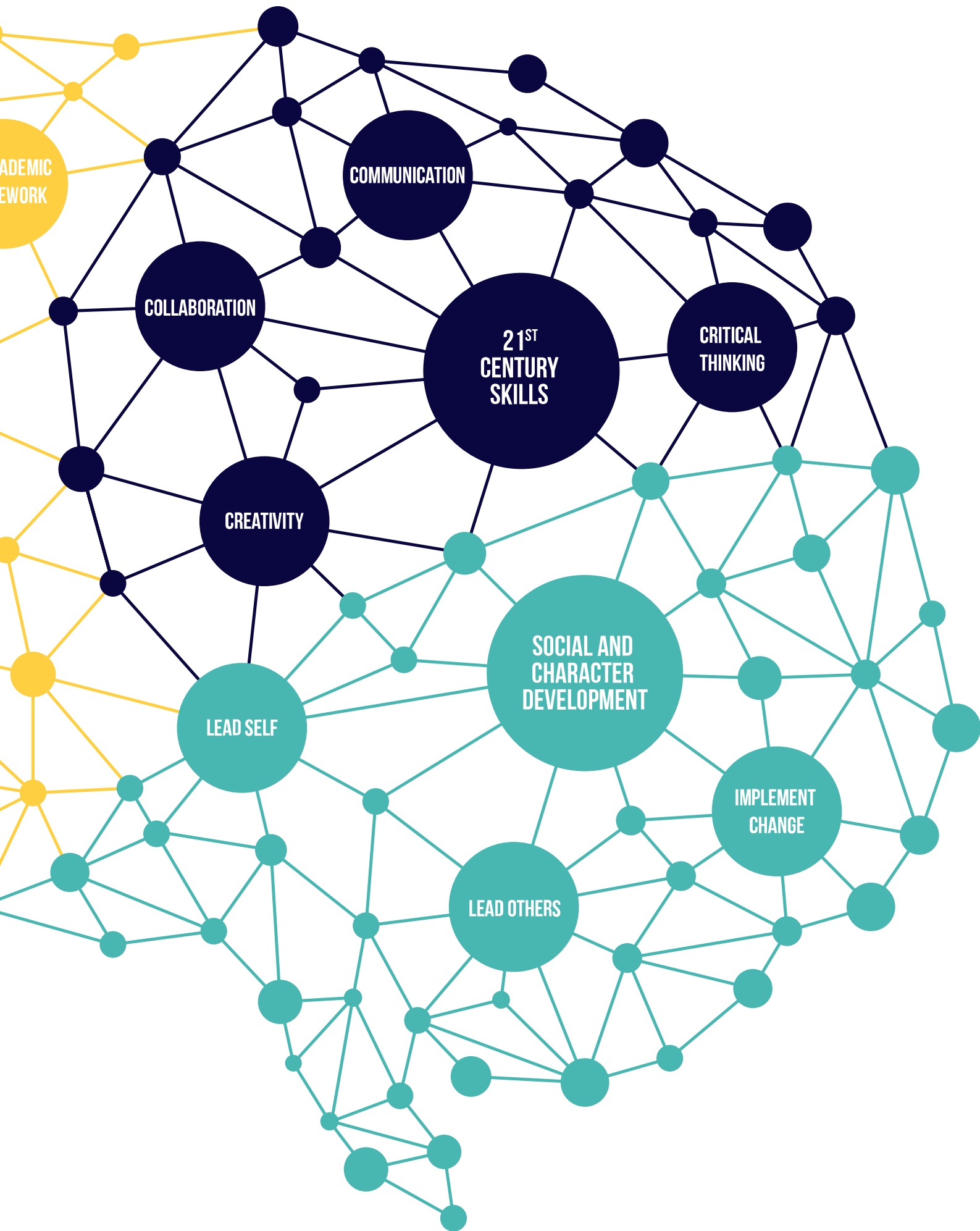
THE LAB JUNIOR

Schools around the world now have Coding as a subject within their curriculum, beginning as early as the 3rd grade. In today's high-tech world, kids are introduced to technology before they are introduced to anything that resembles a book.

Get an early start with technology the right way.



Curriculum



ACADEMIC
NETWORK

COMMUNICATION

COLLABORATION

21ST
CENTURY
SKILLS

CRITICAL
THINKING

CREATIVITY

SOCIAL AND
CHARACTER
DEVELOPMENT

LEAD SELF

IMPLEMENT
CHANGE

LEAD OTHERS

Senior Team

Dr. Oka Kurniawan
The Lab Curriculum Specialist

Dr. Oka is a Senior Lecturer for Singapore University of Technology and Design. His research areas include Computer Science Education.



Dr. Scarlett Mattoli
Child Psychologist Specialist

Dr. Scarlett is a Psychotherapist/Counsellor, Coaching Psychologist & Supervisor and Psychometrist, specialising in psychological and therapeutic support.

Dr. Collin Ang
Technology/Industry Specialist

Dr. Collin is the Managing Director of Decision Science and is a thought leader in the industry for digital transformation and analytics.



Students

Empowering
through
Computational
Thinking



THE LAB JUNIOR FOUNDATION

The Lab Junior Foundation is a stepping stone to the Lab Junior program. It serves as a preparatory program for students to ease them into the vigorous requirements of the Lab Junior program. It provides a broad introductory to allow students to seek the skills of a good programmer.

The curriculum is built upon the MOE Primary school maths syllabus, hence providing a sneak preview of your child's Primary 4 learning journey in a fun and interactive way.

Class-based structure

Fuses Coding with STEM

**Half Year Program
2 terms of 10 weekly lessons**

Ratio 1:6

PROGRAM OUTLINE

FOUNDATION 1

Week	Challenge	Math/Science Concept	Coding/Robotic Concept
1	Build and Program a Grabber	Decimals Negative Numbers	Motors
2	Build and Program a Transformer	Decimals Negative Numbers	Motors
3	Build and Program a Van	Physics relating to a car	Motors Logic
4	Build and Program a Drop Tower	Angles Degrees	Motors Logic
5	Build and Program a Scorpion	Multiplication	Motors Logic
6	Build and Program a Racing Car	Division	Motors Logic
7	Build and Program a Spinning Machine	Multiplication Division	Motors Logic
8	Build and Program a Music Maker	Estimation Range	Motors Logic
9 - 10	Final Project		

PROGRAM OUTLINE

FOUNDATION 2

Week	Challenge	Math/Science Concept	Tech/Eng Concept
1	Build and Program a Printer	Binary Logic	Conditionals (If) Touch Sensor
2	Build and Program a Flipping Fish	Binary Logic	Conditionals (If-Else) Touch Sensor
3	Build and Program a Frog	Binary Logic	Conditionals (If-Else) Brick Button
4	Build and Program a Sit Up Man	Math Operators Logic	Conditionals (If) Ultrasonic Sensor
5	Build and Program Rowing Machine	Math Operators Logic	Conditionals (If-Else) Ultrasonic Sensor
6	Build and Program a Wheelchair Robot	Math Operators Logic Range (i.e. between)	Conditionals (If-Else) Ultrasonic Sensor
7	Build and Program a Spinning Top	Logic	Conditionals (If-Else-If-Else) Colour Sensor
8	Build and Program a Hopper	Logic	Conditionals (If-Else-If-Else) Colour Sensor
9 - 10	Final Project		



The Lab Junior Program

The curriculum integrates Computational Thinking (Programming) and Engineering Design Process (Building). It promotes the application of Math and Science, which are foundations to being a good programmer. We also use LEGO robots to engage students into robotics.

The curriculum is built upon the MOE Primary 4 Math and Science syllabus, hence providing a sneak preview of your child's Primary 4 learning journey in a fun and interactive way.

This program is suited for beginners aged 7-9 or students who have graduated from The Lab Kinder or The Lab Junior Foundation Program.

Class-based structure

Fuses Coding with STEM

**One Year Program
4 terms of 10 weekly lessons**

Ratio 1:6

PROGRAM OUTLINE

TERM 1

Week	Challenge	Math/Science Concept	Tech/Eng Concept
1	Build and Program a Jackpot Machine	Whole numbers	Sequence Randomness
2	Build and Program a Rhino	Rounding Estimation Range	Sequence Randomness Range
3	Build and Program a Weathercaster	Flowcharts	Flowchart in Programming
4	Build and Program a Grabber	Decimals Positive and Negative Numbers	Wait Until ()
5	Build and Program a Dog Car	Angles	Turns
6	Build and Program a Base Car	Geometry	Loops Wait Until ()
7	Build and Program a Colour Sensor Car	Logic	Conditionals (IF-Else) Colour Sensor
8	Build and Program a Bulldozer	Recap Session	Recap Session
9 - 10	Final Project		

PROGRAM OUTLINE

TERM 2

Week	Challenge	Math/Science Concept	Tech/Eng Concept
1	Build and Program an Ultrasonic Car	Relational Operators (i.e. less than)	Conditionals (If) Ultrasonic Sensor
2	Build and Program a Wally Robot	Relational Operators (i.e. more than)	Conditionals (If-Else-If) Ultrasonic Sensor
3	Build and Program a Guitar	Relational Operators (i.e. equals to)	Conditionals (If-Else-If) Ultrasonic Sensor Sound
4	Build and Program a Wheel of Fortune	Fractions	Conditionals (If) Randomness Touch Sensor
5	Build and Program a Samurai	Relational Operators (i.e. less than)	Conditionals (If) Ultrasonic Sensor Touch Sensor AND Operator
6	Build and Program a Camera	Logic	Conditionals (If-Else-If-Else) Colour Sensor Touch Sensor AND Operator
7	Build and Program a Bulldozer	Area Perimeter	Conditionals (If-Else-If-Else) Touch Sensor
8	Build and Program a Helicopter	Arithmetic Sequence	Wait Until () Touch Sensor
9 - 10	Final Project		

PROGRAM OUTLINE

TERM 3

Week	Challenge	Math/Science Concept	Coding/Robotic Concept
1	Build and Program a Balancer robot	Angles	Conditionals (If-Else-If-Else) Gyro sensor
2	Build and Program a Gyro Car	Range	Conditionals (If-Else-If-Else) Gyro sensor
3	Build and Program a Beyblade launcher	Range	AND Operators OR Operators Touch Sensor
4	Build and Program a Shooting Gun	Logic Statements	Nested Ifs Ultrasonic Sensor Touch Sensor
5	Build and Program a Bike with Traffic Light	Logic Statements	Nested Ifs AND Operators
6	Build and Program a Safe Deposit Box	Range	Reflected Light Intensity Colour Sensor
7	Build and Program a Game Master Robot	Light Intensity Reflection of light	Proportional Integral Derivative
8	Build and Program a Bug Robot		String and Integer Ultrasonic Sensor
9 - 10	Final Project		

PROGRAM OUTLINE

TERM 4

Week	Challenge	Math/Science Concept	Coding/Robotic Concept
1	Build and Program a Scissors, Paper, Stone Game Machine	Probability Percentages	Variables Random Touch Sensor
2	Build and Program a Pie Thrower	Algebra	Variables Passcode System
3	Build and Program a Catapult	Algebra Time Range	Variables Random
4	Build and Program a Hand Biting Crocodile game	Algebra Time Range	Variables Touch Sensor
5	Build and Program a Pulley System	Physics Ambient Light Intensity	Variables Light Sensor
6	Build and Program a Satellite Robot	Calibration Ambient Light Intensity	Variables Light Sensor
7	Build and Program a Game Console	Variables X Y axis	Variables
8	Build and Program a Bike	Speed	List/Array
9 - 10	Final Project		



CONTACT US

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