



[ ] NULLSPACE

**Course Schedule | January to March 2021**  
*Nullspace Centre for Robotics Learning (C4RL)*

*(Updated 14th December 2020)*

2021

# Robotics Certificate Programme using LEGO® Mindstorms EV3

Recommended Age: 9 years old and above

Course Duration: Min. 10 hours per level (4 sessions x 2.5 hours)

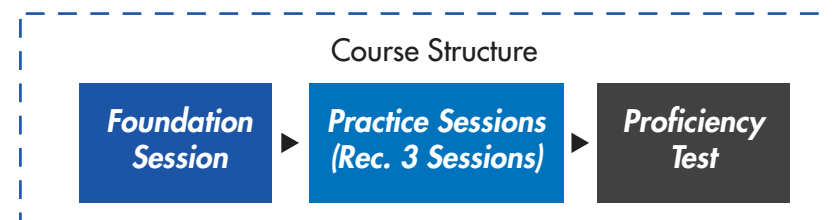
Venues: C4RL-EAST / C4RL-WEST | Max Class Size: 3 Students per Instructor

Note:

>> Each course level consists of 1 Foundation Session + approx. 3 Practice Sessions

>> Proficiency Test to be taken before advancement to next level (e.g. after Beginner 2).

>> In the event students do not pass the Course Proficiency Test, they may be recommended to redo certain course activities before attempting the test again.



## Foundation Sessions

### Beginner 1

4 Jan 2021 (Mon), 1pm - 3.30pm  
11 Jan 2021 (Mon), 1pm - 3.30pm  
18 Jan 2021 (Mon), 6pm - 8.30pm  
24 Jan 2021 (Sun), 1pm - 3.30pm  
25 Jan 2021 (Mon), 6pm - 8.30pm  
30 Jan 2021 (Sat), 1pm - 3.30pm  
1 Feb 2021 (Mon), 6pm - 8.30pm  
15 Feb 2021 (Mon), 6pm - 8.30pm  
22 Feb 2021 (Mon), 6pm - 8.30pm  
1 Mar 2021 (Mon), 6pm - 8.30pm  
8 Mar 2021 (Mon), 6pm to 8.30pm  
15 Mar 2021 (Mon), 1pm to 3.30pm

### Advance 1

4 Jan 2021 (Mon), 1pm - 3.30pm  
11 Jan 2021 (Mon), 1pm - 3.30pm  
20 Jan 2021 (Wed), 6pm - 8.30pm  
24 Jan 2021 (Sun), 1pm - 3.30pm  
30 Jan 2021 (Sat), 1pm - 3.30pm  
3 Feb 2021 (Wed), 6pm - 8.30pm  
17 Feb 2021 (Wed), 6pm - 8.30pm  
3 Mar 2021 (Wed), 6pm - 8.30pm  
15 Mar 2021 (Mon), 1pm - 3.30pm

### Beginner 2

6 Jan 2021 (Wed), 4pm - 6.30pm  
13 Jan 2021 (Wed), 4pm - 6.30pm  
25 Jan 2021 (Mon), 6pm - 8.30pm  
8 Feb 2021 (Mon), 6pm - 8.30pm  
22 Feb 2021 (Mon), 6pm - 8.30pm  
28 Feb 2021 (Sun), 1pm - 3.30pm  
6 Mar 2021 (Sat), 1pm - 3.30pm  
8 Mar 2021 (Mon), 6pm - 8.30pm  
17 Mar 2021 (Wed), 4pm - 6.30pm

### Advance 2

6 Jan 2021 (Wed), 4pm - 6.30pm  
13 Jan 2021 (Wed), 4pm - 6.30pm  
27 Jan 2021 (Wed), 6pm - 8.30pm  
10 Feb 2021 (Wed), 6pm - 8.30pm  
24 Feb 2021 (Wed), 6pm - 8.30pm  
28 Feb 2021 (Sun), 1pm - 3.30pm  
6 Mar 2021 (Sat), 1pm - 3.30pm  
10 Mar 2021 (Wed), 6pm - 8.30pm  
17 Mar 2021 (Wed), 4pm - 6.30pm

### Intermediate 1

4 Jan 2021 (Mon), 1pm - 3.30pm  
11 Jan 2021 (Mon), 1pm - 3.30pm  
19 Jan 2021 (Tues), 6pm - 8.30pm  
24 Jan 2021 (Sun), 4pm - 6.30pm  
30 Jan 2021 (Sat), 4pm - 6.30pm  
2 Feb 2021 (Tues), 6pm - 8.30pm  
16 Feb 2021 (Tues), 6pm - 8.30pm  
2 Mar 2021 (Tues), 6pm - 8.30pm  
15 Mar 2021 (Mon), 1pm - 3.30pm

### Intermediate 2

6 Jan 2021 (Wed), 4pm - 6.30pm  
13 Jan 2021 (Wed), 4pm - 6.30pm  
26 Jan 2021 (Tues), 6pm - 8.30pm  
9 Feb 2021 (Tues), 6pm - 8.30pm  
23 Feb 2021 (Tues), 6pm - 8.30pm  
28 Feb 2021 (Sun), 4pm - 6.30pm  
6 Mar 2021 (Sat), 4pm - 6.30pm  
9 Mar 2021 (Tues), 6pm - 8.30pm  
17 Mar 2021 (Wed), 4pm - 6.30pm

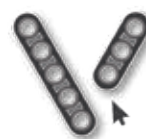
## Competitive Robotics Training Programme (Invite Only)

Every Saturday & Sunday 9.30am - 12pm

Prerequisite: Completion of Robotics Certification Programme (Advanced Level)

Note: No lessons on CNY Weekend (13th & 14th February 2021).

## Virtual Robotics Competition Training



Interested in joining the monthly Virtual Robotics Competition?

Talk to our instructors! We have training sessions available!

Prerequisite: Completion of Beginner 1 Level

Visit <https://ideseries.org/virtual-robotics-competition/> for more info.

# Robotics Certificate Programme using LEGO® Mindstorms EV3

Recommended Age: 9 years old and above

Course Duration: Min. 10 hours per level (4 sessions x 2.5 hours)

Venues: C4RL-EAST / C4RL-WEST | Max Class Size: 3 Students per Instructor

Note:

>> Each course level consists of 1 Foundation Session + approx. 3 Practice Sessions

>> Proficiency Test to be taken before advancement to next level (e.g. after Beginner 2).

>> In the event students do not pass the Course Proficiency Test, they may be recommended to redo certain course activities before attempting the test again.

## Beginner Practice Sessions

**International School Holiday 1pm - 3.30pm**

5, 6, 7, 8, 12, 13, 14, 15 Jan 2021

**International School Holiday 4pm - 6.30pm**

4, 5, 7, 11, 12, 14 Jan 2021

**Weekdays (Tues, Weds, Thurs) 6pm - 8.30pm**

19, 20, 21, 26, 27, 28 Jan 2021,

2, 3, 4, 9, 10, 16, 17, 18, 23, 24, 25 Feb 2021,

2, 3, 4, 9, 10, 11 Mar 2021

**Saturdays 1pm - 3.30pm**

23 Jan 2021, 6, 20, 27 Feb 2021, 13 Mar 2021

**Sundays 1pm - 3.30pm**

31 Jan 2021, 7, 21 Feb 2021, 7, 14 Mar 2021

**March School Holiday 1pm - 3.30pm**

16, 17, 18, 19 Mar 2021

**March School Holiday 4pm - 6.30pm**

15, 16, 18 Mar 2021

## Intermediate Practice Sessions

**International School Holiday 1pm - 3.30pm**

5, 6, 7, 8, 12, 13, 14, 15 Jan 2021

**International School Holiday 4pm - 6.30pm**

4, 5, 7, 11, 12, 14 Jan 2021

**Weekdays (Mon, Weds, Thurs) 6pm - 8.30pm**

18, 20, 21, 25, 27, 28 Jan 2021,

1, 3, 4, 8, 10, 15, 17, 18, 22, 24, 25 Feb 2021,

1, 3, 4, 8, 10, 11 Mar 2021

**Saturdays 4pm - 6.30pm**

23 Jan 2021, 6, 20, 27 Feb 2021, 13 Mar 2021

**Sundays 4pm - 6.30pm**

31 Jan 2021, 7, 21 Feb 2021, 7, 14 Mar 2021

**March School Holiday 1pm - 3.30pm**

16, 17, 18, 19 Mar 2021

**March School Holiday 4pm - 6.30pm**

15, 16, 18 Mar 2021

## Proficiency Test (All Levels)

**Friday 4pm - 6.30pm**

8, 15, 22, 29 Jan 2021

5, 19, 26 Feb 2021

5, 12, 18 Mar 2021

## Advance Practice Sessions

**International School Holiday 1pm - 3.30pm**

5, 6, 7, 8, 12, 13, 14, 15 Jan 2021

**International School Holiday 4pm - 6.30pm**

4, 5, 7, 11, 12, 14 Jan 2021

**Weekdays (Mon, Tues, Thurs) 6pm - 8.30pm**

18, 19, 21, 25, 26, 28 Jan 2021,

1, 2, 4, 8, 9, 15, 16, 18, 22, 23, 25 Feb 2021,

1, 2, 4, 8, 9, 11 Mar 2021

**Saturdays 1pm - 3.30pm**

23 Jan 2021, 6, 20, 27 Feb 2021, 13 Mar 2021

**Sundays 1pm - 3.30pm**

31 Jan 2021, 7, 21 Feb 2021, 7, 14 Mar 2021

**March School Holiday 1pm - 3.30pm**

16, 17, 18, 19 Mar 2021

**March School Holiday 4pm - 6.30pm**

15, 16, 18 Mar 2021

# Junior Robotics using LEGO® WeDo 2.0

Recommended Age: 6 - 8 | Course Fee: \$300 | Course Structure: 12 Unique Projects (Non-Progressive)  
Course Duration: 8 hours per project (4 sessions x 2 hours) | Max Class Size: 3 Students per Instructor

## Robots

**Weekday Bootcamp 4.30pm - 6.30pm**  
C4RL-EAST / C4RL-WEST  
4, 5, 6, 7 Jan 2021 (Mon - Thurs)

**Tuesdays 1pm - 3pm**  
C4RL-EAST / C4RL-WEST  
16, 23 Feb, 2, 9 Mar 2021

## Environment

**Weekday Bootcamps 1pm - 3pm**  
C4RL-EAST / C4RL-WEST  
4, 5, 6, 7 Jan 2021 (Mon - Thurs)

## Vehicles

**Weekday Bootcamps 10am - 12pm**  
C4RL-EAST / C4RL-WEST  
11, 12, 13, 14 Jan 2021 (Mon - Thurs)

## Hand Tools

**Weekday Bootcamps 1pm - 3pm**  
C4RL-EAST / C4RL-WEST  
11, 12, 13, 14 Jan 2021 (Mon - Thurs)

## Dinosaurs

**Tuesdays 4pm - 6pm**  
C4RL-EAST / C4RL-WEST  
12, 19, 26 Jan, 2 Feb 2021

## Animals

**Thursdays 4pm - 6pm**  
C4RL-EAST / C4RL-WEST  
14, 21, 28 Jan, 4 Feb 2021

## Machinery

**Saturdays 10am - 12pm**  
C4RL-EAST / C4RL-WEST  
16, 23, 30 Jan, 6 Feb 2021

## Nature

**Sundays 4pm - 6pm**  
C4RL-EAST / C4RL-WEST  
17, 24, 31 Jan, 7 Feb 2021

## Star Wars

**Thursdays 4pm - 6pm**  
C4RL-EAST / C4RL-WEST  
18, 25 Feb, 4, 11 Mar 2021

## Transportation

**Saturdays 10am - 12pm**  
C4RL-EAST / C4RL-WEST  
20, 27 Feb, 6, 13 Mar 2021

## Festivity

**Sundays 10am - 12pm**  
C4RL-EAST / C4RL-WEST  
21, 28 Feb, 7, 14 Mar 2021



# Inventor Certificate Programme using Arduino Microcontroller

Recommended Age: 10 years old and above

Course Duration: 10 hours per level (4 sessions x 2.5 hours)

Max Class Size: 5 Students per Instructor

## Intro to Arduino using S4A

Saturdays 1pm - 3.30pm

C4RL-EAST (Siglap) / C4RL-WEST (Rochester)

16, 23, 30 Jan, 6 Feb 2021

## Beginner 1

Saturdays 1pm - 3.30pm

C4RL-EAST (Siglap) / C4RL-WEST (Rochester)

20, 27 Feb, 6, 13 Mar 2021

## Intermediate 1

Sundays 1pm - 3.30pm

C4RL-EAST (Siglap) / C4RL-WEST (Rochester)

17, 24, 31 Jan, 7 Feb 2021

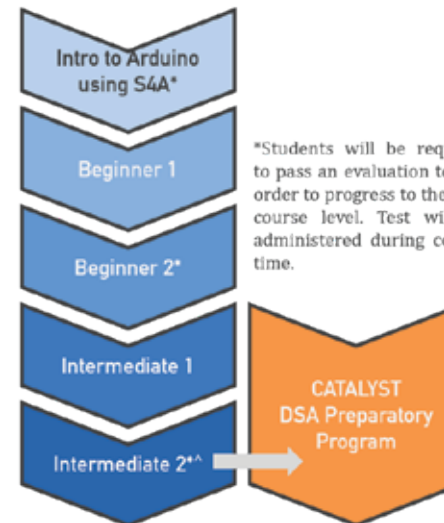
## Intermediate 2

Sundays 1pm - 3.30pm

C4RL-EAST (Siglap) / C4RL-WEST (Rochester)

21, 28 Feb, 7, 14 Mar 2021

### Course Progression



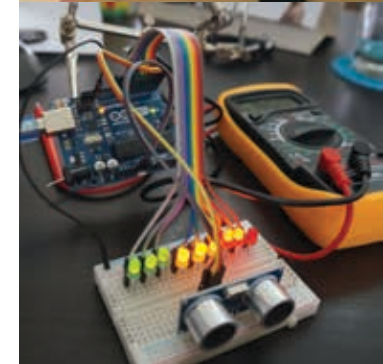
\*Students will be required to pass an evaluation test in order to progress to the next course level. Test will be administered during course time.

^Arduino Inventor : Intermediate 2 is pre-requisite for CATALYST DSA Preparatory Program

## CATALYST DSA Preparatory

Every Saturday & Sunday 9.30am - 12pm

Note: No lessons on CNY Weekend (13th & 14th February 2021).



# Junior Game Developer using Scratch

Recommended Age: 8 - 11 years old

Course Duration: 10 hours per project bundle (4 sessions x 2.5 hours)

Max Class Size: 3 Students per Instructor



## Tier 1: Classic Arcade

Wednesdays 4.30pm - 7pm

C4RL-EAST / HBL (via Zoom)

11, 18, 25 Jan, 1 Feb 2021

Saturdays 4pm - 6.30pm

C4RL-EAST / C4RL-WEST / HBL (via Zoom)

20, 27 Feb, 6, 13 Mar 2021

## Tier 1: Animal Planet

Saturdays 4pm - 6.30pm

C4RL-EAST / C4RL-WEST / HBL (via Zoom)

16, 23, 30 Jan, 6 Feb 2021

Mondays 4.30pm - 7pm

C4RL-WEST / HBL (via Zoom)

15, 22 Feb, 1, 8 Mar 2021

## Tier 1: Food Hunt

Mondays 4.30pm - 7pm

C4RL-WEST / HBL (via Zoom)

13, 20, 27 Jan, 3 Feb 2021

Wednesdays 4.30pm - 7pm

C4RL-EAST / HBL (via Zoom)

17, 24 Feb, 3, 10 Mar 2021

## Tier 2: Reaction Speed

Sundays 4pm - 6.30pm

C4RL-EAST / C4RL-WEST

17, 24, 31 Jan, 7 Feb 2021

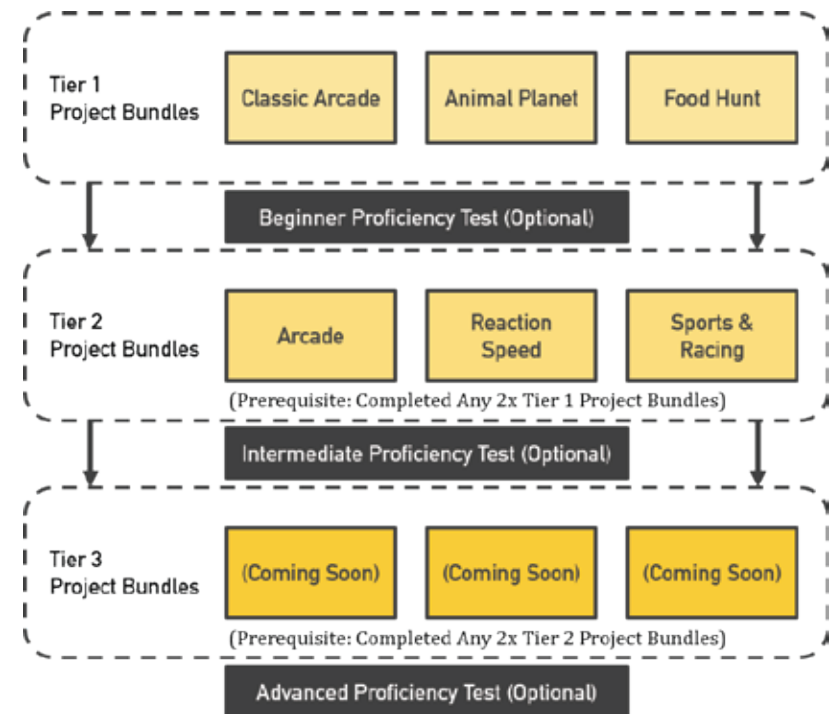
## Tier 2: Sports & Racing

Sundays 4pm - 6.30pm

C4RL-EAST / C4RL-WEST / HBL (via Zoom)

21, 28 Feb, 7, 14 Mar 2021

## Course Progression



Tier 1: Classic Arcade  
*Zombie Shooter*



Tier 1: Animal Planet  
*Farmville*



Tier 1: Food Hunt  
*Bishibashi Sushi*



Tier 2: Arcade  
*Spaceship Fighter*



Tier 2: Reaction Speed  
*Building Stacker*



Tier 2: Sports and Racing  
*Basketball Shootout*

# Junior Data Analyst Certificate Programme using Python

Recommended Age: 11 years old and above

Course Duration: 10 hours per level (4 sessions x 2.5 hours)

Max Class Size: 5 Students per Instructor

## Beginner 1

**Tuesdays 4.30pm - 7pm**

C4RL-WEST / HBL (via Zoom)

12, 19, 26 Jan, 2 Feb 2021

**Thursdays 4.30pm - 7pm**

C4RL-EAST / HBL (via Zoom)

14, 21, 28 Jan, 4 Feb 2021

## Beginner 2

**Tuesdays 4.30pm - 7pm**

C4RL-WEST / HBL (via Zoom)

16, 23 Feb, 2, 9 Mar 2021

**Thursdays 4pm - 6.30pm**

C4RL-EAST / HBL (via Zoom)

18, 25 Feb, 4, 11 Mar 2021

## Intermediate 1

**Saturdays 4pm - 6.30pm**

C4RL-EAST / C4RL-WEST/ HBL (via Zoom)

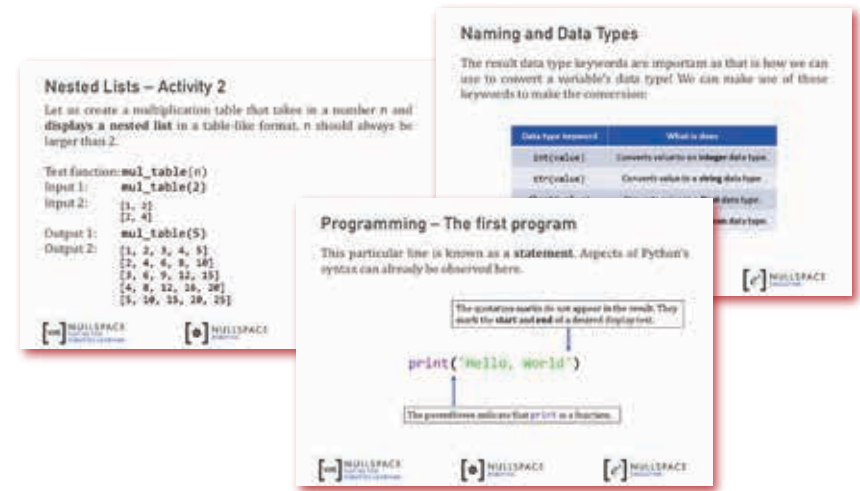
16, 23, 30 Jan, 6 Feb 2021

## Intermediate 2

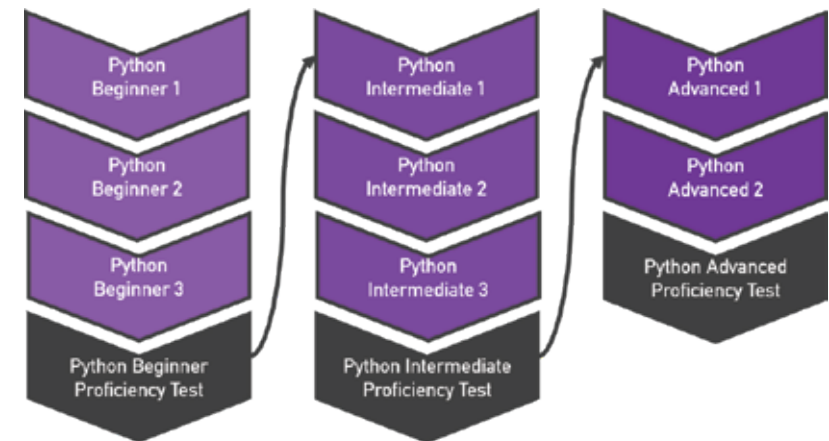
**Saturdays 4pm - 6.30pm**

C4RL-EAST / C4RL-WEST/ HBL (via Zoom)

20, 27 Feb, 6, 13 Mar 2021



## Course Progression



Proficiency Test will be conducted during Session 4 of Beginner 3, Intermediate 3, Advanced 2

