ENGINEERING LEGO® BUILDERS LEVEL 2
Participants will develop their social skills and deepen their understanding of the world around them using Duplo LEGO® bricks as they discuss, build, role-play and share ideas. Each week a new theme will help them to explore the world beyond their immediate surroundings, while learning new vocabulary about people, places, and things in real life. Themes may include: public transportation, preschool, physical activities, touring town, extended families, and helping each other.
Prerequisite: Engineering LEGO® Builders 1
Age: 3 – 5

ENGINEERING LEGO® STEAM PARK LEVEL 1
Participants explore the world around them as they use functional elements to build interactive models using Duplo LEGO® bricks. Each week they will develop science, technology, engineering, art, and math (STEAM) skills, including understanding cause and effect relationships, making predictions and observations, problem-solving and creating representations. Some of the themes may include: ramps, moving on water, probability, performing arts, gears, and chain reactions.
Age: 3 – 5

ENGINEERING LEGO® STEAM PARK LEVEL 2
Participants will continue to explore the world around them as they use functional elements to build interactive models using Duplo LEGO® bricks. Each week they will continue to develop science, technology, engineering, art, and math (STEAM) skills, while increasing their understanding of cause and effect relationships, making predictions and observations, problem-solving and creating representations that were introduced previously.
Prerequisite: Engineering LEGO® STEAM Park 1
Age: 3 – 5

ENGINEERING LEGO® EARLY SIMPLE MACHINES LEVEL 1
Participants will be able to work as young scientists, engineers and designers working with Duplo LEGO® simple machines bricks and guided activities that promote design technology, science and mathematics. Participants will use their knowledge of simple machines to work on real world investigations and problem solving to make assumptions and predictions as they make their own models. Activities may include: pinwheels, spinning tops, seesaws, rafts, car launchers, and measuring cars.
Age: 5 – 7

ENGINEERING LEGO® EARLY SIMPLE MACHINES LEVEL 2
Participants will continue to work as young scientists, engineers and designers working with LEGO® simple and powered machines bricks and problem-solving tasks that promote design technology, science and mathematics. Participants will use their knowledge of simple machines to work on real world investigations and problem solving to make assumptions and predictions as they make their own models.
REGISTRATION PROGRAMS

through real world investigations and use problem solving skills to make assumptions and predictions as they design and make models.

**Prerequisite:** Engineering LEGO® Early Simple Machines 1 (5-7 Years)

**Age:** 5 – 7

**ENGINEERING LEGO® SIMPLE MACHINES LEVEL 1**

Participants will be able to work as young scientists, engineers and designers working with LEGO® simple machines bricks and guided activities that promote design technology, science and mathematics. Participants will work through real world activities surrounding the topics of gears, wheels and axles.

**Age:** 7 – 9

**ENGINEERING LEGO® SIMPLE MACHINES LEVEL 2**

Participants will be able to work as young scientists, engineers and designers working with LEGO® simple machines bricks and guided activities that promote design technology, science and mathematics. Participants will work through real world problem-solving activities surrounding the topics of levers and pulleys.

**Prerequisite:** Engineering LEGO® Simple Machines 1 (7-9 Years)

**Age:** 7 – 9

**ENGINEERING LEGO® SIMPLE AND POWERED MACHINES LEVEL 1**

Participants will be able to work as young scientists, engineers and designers working with LEGO® simple and powered machines bricks and guided activities that promote design technology, science and mathematics. Participants will work through real world activities surrounding the themes of gears, pulleys, wheels, axles, levers, cams, inclined planes.

**Age:** 9 – 12

**ENGINEERING LEGO® SIMPLE AND POWERED MACHINES LEVEL 2**

Participants will be able to work as young scientists, engineers and designers working with LEGO® simple and powered machines bricks and guided activities that promote design technology, science and mathematics. Participants will work through real world activities to combine mechanisms and components as they design using gears, pulleys, wheels, levers, ratchets, and power.

**Prerequisite:** Engineering LEGO® Simple & Powered Machines 1 (9-13 Years)

**Age:** 9 – 12

**ENGINEERING LEGO® SIMPLE AND POWERED MACHINES LEVEL 3**

Participants will continue to work as young scientists, engineers and designers working with LEGO® simple and powered machines bricks and problem-solving tasks that promote design technology, science and mathematics. Participants will use their knowledge of simple machines to work through real world investigations as they design and make models to solve problems.

**Prerequisite:** Engineering LEGO® Simple & Powered Machines 2 (9-13 Years)

**Age:** 9 – 12

**ROBOTICS WEDO PROGRAMS**

**ROBOTICS WEDO LEVEL 1**

Using LEGO® WeDo robotics sets, participants will be guided through steps to build and program robots to explore science and engineering concepts. The robot models will help participants investigate and design solutions to real life problems while learning simple coding. Activity topics may include: pulling, speed, robust structures, a frog’s metamorphosis, plants and pollinators, and preventing flooding.

**Age:** 7 – 10

**ROBOTICS WEDO LEVEL 2**

Using LEGO® WeDo robotics sets, participants will build and program robots to solve science and engineering problems. They will further their computing and coding skills while gaining an understanding of how machines and computers process information. Activity topics may include: drop and rescue, sorting to recycle, predator and prey relationships, animal expressions, extreme habitats, and space exploration.

**Prerequisite:** Robotics LEGO® WeDo Level 1 (7-10 Years)

**Age:** 7 – 10

**ROBOTICS WEDO LEVEL 3**

Using LEGO® WeDo robotics sets, participants will build and program robots to develop computational thinking through coding activities that work to solve real-life problems in natural and artificial systems. Activity topics may include: hazard alarms, cleaning the oceans, wildlife crossings, moving materials, monitoring base, and grabbing objects.

**Prerequisite:** Robotics LEGO® WeDo Level 2 (7-10 Years)

**Age:** 7 – 10

**ROBOTICS WEDO LEVEL 4**

Using LEGO® WeDo robotics sets, participants will build and program robots to further develop computational thinking and creativity to understand and change the world through coding. Activity topics may include: sending messages, volcano alerts, inspections, emotional design, city safety, and animal senses.

**Prerequisite:** Robotics LEGO® WeDo Level 3 (7-10 Years)

**Age:** 7 – 10

**ROBOTICS WEDO LEVEL 5**

Using LEGO® WeDo robotics sets, participants will build and program robots as they learn principals of computer science, increasing their knowledge of how digital systems work and how to put this knowledge to use through programming. Activity topics may include: speed control, fearless frogs, dancing bees, debugging floodgates, rescue counts, and reverse and recycle.

**Prerequisite:** Robotics LEGO® WeDo Level 4 (7-10 Years)

**Age:** 7 – 10

**ROBOTICS WEDO ANIMALS WORKSHOP**

Using LEGO® WeDo robotics sets, participants will learn how to build various animal robots and learn the programming involved in creating the mechanisms of: wobbling, cranking, walking, flexing, grabbing, reeling, tilting or pushing which each of the different models they build. Participants will have the chance to explore and use their creativity to build and program beyond the base robotic models.

**Age:** 7 – 10

**ROBOTICS WEDO CARS & VEHICLES WORKSHOP**

Using LEGO® WeDo robotics sets, participants will learn how to build various and program robotic cars and vehicles while creating the mechanisms of: driving, spinning, reeling, lifting, steering, and turning which each of the different models they build. Participants will have the chance to explore and use their creativity to build and program beyond the base robotic models.

**Age:** 7 – 10

**ROBOTICS WEDO TOYS & TOOLS WORKSHOP**

Using LEGO® WeDo robotics sets, participants will learn how to build various tools and toy-based robots and learn the programming involved in creating the mechanisms of turning, tilting, motion, sweeping, revolving, spinning, flexing, and wobbling which each of the different models they build. Participants will have the chance to explore and use their creativity to build and program beyond the base robotic models.

**Age:** 7 – 10
Journey through STEM

ROBOTICS STREAM

START HERE!

Robotics LEGO®
WeDo
(7 to 10 Years)

Level 1
Level 2
Level 3
Level 4
Level 5

Robotics LEGO®
Mindstorms
(10 to 13 Years)

Level 1
Level 2
Level 3
Level 4
Level 5
Level 6
Level 7

TRY-IT, SPECIAL EVENTS
& FAMILY WORKSHOPS

(7+ Years)

Robotics LEGO®
WeDo Builder Animals

Robotics LEGO®
WeDo Builder Toys & Tools

Robotics LEGO®
WeDo Builder Cars & Vehicles

Please note that the previous level of each age group is a prerequisite for the next level.

brampton.ca/recreation
ROBOTICS MINDSTORMS PROGRAMS

ROBOTICS LEGO® MINDSTORMS LEVEL 1
Using LEGO® MINDSTORMS robotics sets, participants will work as design engineers to build and program robots that can ‘Make It System’. Participants will learn to design, build and code robots that can perform complex tasks. Some of the themes of the course include working on robots that can move a ball that picks and places objects, that manufactures by drawing patterns, that communicates, can sort colours, and that can react to their environment through ultrasonic sensors to sense a range of data. Participants will work as design engineers to design, build and create driverless automated wheeled robot. 
Prerequisite: Robotics LEGO® MINDSTORMS Level 3 (10-14 Years)
Age: 10 – 14

ROBOTICS LEGO® MINDSTORMS LEVEL 2
Using LEGO® MINDSTORMS robotics sets, participants will work as design engineers to build and program robots that can ‘Make It System’. Participants will learn to design, build and code robots that can think and move on their own. Some of the themes of the course include making it move with wheels, displaying speed, moving without wheels, moving up an incline, and moving in a variety of ways as well as coding the ultrasonic, touch and colour sensors in their robots to complete challenges. 
Prerequisite: Robotics LEGO® MINDSTORMS Level 1 (10-14 Years)
Age: 10 – 14

ROBOTICS LEGO® MINDSTORMS LEVEL 3
Using LEGO® MINDSTORMS robotics sets, participants will work as design engineers to build and code robots that can ‘Make It Smarter’. Participants will learn to design, build and code robots that can be considered to be smart autonomous robots that can react to their environment through programming to use colour, gyro, touch and ultrasonic sensors to sense a range of data. 
Prerequisite: Robotics LEGO® MINDSTORMS Level 5 (10-14 Years)
Age: 10 – 14

ROBOTICS LEGO® MINDSTORMS LEVEL 4
Using LEGO® MINDSTORMS robotics sets, participants will focus on coding their robots as they learn fundamental computer programming and engineering skills using real world concepts that integrates with science, math, and design technology. Participants will work to design, build and code a driverless automated wheeled robot. 
Prerequisite: Robotics LEGO® MINDSTORMS Level 3 (10-14 Years)
Age: 10 – 14

ROBOTICS LEGO® MINDSTORMS LEVEL 5
Using LEGO® MINDSTORMS robotics sets, participants will work as design engineers to build and program robots that can ‘Make It System’. Participants will learn to design, build and code robots that can think and move on their own. Some of the themes of the course include making it move with wheels, displaying speed, moving without wheels, moving up an incline, and moving in a variety of ways as well as coding the ultrasonic, touch and colour sensors in their robots to complete challenges. 
Prerequisite: Robotics LEGO® MINDSTORMS Level 2 (10-14 Years)
Age: 10 – 14

ROBOTICS LEGO® MINDSTORMS LEVEL 6
Using LEGO® MINDSTORMS robotics sets, participants will work as design engineers to build and program robots that can ‘Make It Smarter’. Participants will learn to design, build and code robots that can be considered to be smart autonomous robots that can react to their environment through programming to use colour, gyro, touch and ultrasonic sensors to sense a range of data.

REGISTERED PROGRAMS

Have you previously taken a Robotics Mindstorms program? Please note new names for the Mindstorms series in the conversion chart below. Continue the series from the course you’ve already completed or back track to try a previous level that has cool builds and coding opportunities of its own!

<table>
<thead>
<tr>
<th>PROGRAM CONVERSION CHART</th>
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<tbody>
<tr>
<td><strong>NEW PROGRAM NAMES</strong></td>
</tr>
<tr>
<td>Robotics LEGO® MINDSTORMS Level 1 (10 to 14 Years)</td>
</tr>
<tr>
<td>Robotics LEGO® MINDSTORMS Level 2 (10 to 14 Years)</td>
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<td>Robotics LEGO® MINDSTORMS Level 6 (10 to 14 Years)</td>
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<tr>
<td>Robotics LEGO® MINDSTORMS Level 7 (10 to 14 Years)</td>
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</tbody>
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FALL 2019/WINTER 2020
COMPUTER VIDEO GAME DESIGNER
Age: 10 – 13
Class Length: 1.5 Hours

FALL
Central Public School
Sat 10:45 am Sep 21 8 $92.08 979364
Sun 9:00 am Sep 22 8 $92.08 979366
Sun 12:30 pm Sep 22 8 $92.08 979370

WINTER
Central Public School
Sat 10:45 am Jan 11 8 $92.08 979855
Sun 9:00 am Jan 12 8 $92.08 979857
Sun 12:30 pm Jan 12 8 $92.08 979859

MATH
Through this program, participants will have fun exploring the world of math. Participants will gain confidence by participating in counting drills and number recognition games to help introduce and reinforce math skills for completing everyday tasks.
Age: 3 – 6
Class Length: 2 Hours

FALL
Brampton Soccer Centre
Sun 1:00 pm Sep 22 14 $214.76 968616

Chris Gibson Recreation Centre
Sun 9:30 am Sep 22 14 $214.76 984634

Gore Meadows Community Centre
Fri 1:00 pm Sep 20 13 $199.42 969131

Howden Recreation Centre
Tue 9:30 am Sep 17 14 $214.76 979915

WINTER
Brampton Soccer Centre
Sun 1:00 pm Jan 12 10 $153.40 968760

Gore Meadows Community Centre
Fri 1:00 pm Jan 10 10 $153.40 983854

Greenbriar Recreation Centre
Mon 5:00 pm Jan 6 9 $138.06 980563

Howden Recreation Centre
Tue 9:30 am Jan 7 10 $153.40 980019

SCIENCE AND TECHNOLOGY
Participants will enjoy this hands-on curriculum-based program that includes math, science and technology. Participants will learn scientific basics through hands-on activities and scientific experiments that focus on observation, discovery and analysis.
Age: 3 – 6
Class Length: 1 Hour

FALL
South Fletcher’s Sportsplex
Fri 6:00 pm Sep 20 13 $99.71 988237
Sun 11:00 am Sep 22 12 $92.04 988236

WINTER
Howden Recreation Centre
Tue 6:00 pm Jan 7 10 $76.70 980048

South Fletcher’s Sportsplex
Fri 6:00 pm Jan 10 10 $76.70 988287

SCIENCE AND TECHNOLOGY
Age: 8 – 10
Class Length: 1 Hour

FALL
Cassie Campbell Community Centre
Sun 9:00 am Sep 22 14 $107.38 987776

Chinguacousy Wellness Centre
Wed 5:15 pm Sep 18 14 $107.38 981045

Gore Meadows Community Centre
Tue 5:30 pm Sep 17 14 $107.38 969187

Sun 11:30 am Sep 22 14 $107.38 969179

Howden Recreation Centre
Tue 5:00 pm Sep 17 14 $107.38 979957

South Fletcher’s Sportsplex
Fri 5:00 pm Sep 20 13 $99.71 988235

Sun 10:00 am Sep 22 12 $92.04 988234

WINTER
Chinguacousy Wellness Centre
Wed 5:15 pm Jan 8 10 $76.70 981952

Gore Meadows Community Centre
Sun 11:30 am Jan 12 10 $76.70 983862

Howden Recreation Centre
Tue 5:00 pm Jan 7 10 $76.70 980045

South Fletcher’s Sportsplex
Fri 5:00 pm Jan 10 10 $76.70 988286

SCIENCE AND TECHNOLOGY
Age: 6 – 8
Class Length: 1 Hour

FALL
Cassie Campbell Community Centre
Sun 10:30 am Sep 22 14 $107.38 987782

Howden Recreation Centre
Tue 6:00 pm Sep 17 14 $107.38 979947

South Fletcher’s Sportsplex
Fri 6:00 pm Sep 20 13 $99.71 988238

Howden Recreation Centre
Tue 7:00 pm Sep 17 14 $107.38 979952

South Fletcher’s Sportsplex
Fri 7:00 pm Sep 20 13 $99.71 988238

WINTER
Century Gardens Recreation Centre
Fri 6:30 pm Sep 20 11 $84.37 965720

Howden Recreation Centre
Wed 7:00 pm Sep 17 14 $107.38 979952

South Fletcher’s Sportsplex
Fri 7:00 pm Sep 20 13 $99.71 988238

Century Gardens Recreation Centre
Fri 6:30 pm Jan 10 10 $76.70 980156

Howden Recreation Centre
Tue 7:00 pm Jan 7 10 $76.70 980051

South Fletcher’s Sportsplex
Fri 7:00 pm Jan 10 10 $76.70 988288
Journey through STEM ENGINEERING STREAM

START HERE!

Engineering LEGO®
Builders
Level 1 (3-5 Years)

Engineering LEGO®
Builders
Level 2 (3-5 Years)

Engineering LEGO®
STEAM Park
Level 1 (3-5 Years)

Engineering LEGO®
STEAM Park
Level 2 (3-5 Years)

Engineering LEGO®
Early Simple Machines
(5-7 Years)
Level 1
Level 2

Engineering LEGO®
Simple Machines
(7-9 Years)
Level 1
Level 2

Engineering LEGO®
Simple & Powered Machines
(9-13 Years)
Level 1
Level 2
Level 3

Please note that the previous level of each age group is a prerequisite for the next level.

brampton.ca/recreation
Youth Nights
Every Friday, 6-9 pm

Youth ages 6-17 are invited to drop in for sports and games at Brampton community centres.

Cost: $2 per person