Curriculum Outline

The ACG Curriculum Consists of 5 Courses

3 Block Coding Courses

2 JavaScript Courses

Block Coding

ACG's 3 Block Coding Courses consist of 24 Missions that teach students to apply various concepts including "sequence" and "repetition".

Our patented OOBC (object-oriented block coding) is uniquely structured to familiarize students with text coding, helping them transition to the next level of writing code.

Course 1: Block Coding Elementary

Target Age 6 ~ 10

Learning Time – 4 hours

5 Missions

Mission 1

Off to Space We Go

Space adventure for beginners.

- Event, Sequence
- Astronomy
- Industry, Innovation and Infrastructure

Mission 2

Avoid the Obstacles

Intruders from the graveyard orbit. What is their identity?

- Event, Sequence, Coordinate
- Astronomy
- Climate Action

Mission 3

Hungry Recycle Robot

The giant robot that can eat up recyclable trash!

- Event, Sequence, Variable
- Technology
- Responsible consumption and production

Mission 4

Trouble in the Little Garden

Find out what caused the roses to become sick!

- Event, Variable, Coordinate
- Biology
- Life on Land

Mission 5

More Trouble in the Little Garden

Where's the ladybug?

Event, Variable, Coordinate, Physics

Biology

Life on land

Course 2: Block Coding Basic

Target Age 8 ~ 11

Learning Time - 32 hours

13 Missions

Mission 1

Find OT2

Team Astro goes inside the computer to save OT2.

- Event, coordinate, variable
- Technology Engineering
- Industry, Innovation and Infrastructure

Mission 2

Rescue OT2

Rescue OT2 before it's too late!

- Event, Sequence, Speed
- Engineering
- Industry, Innovation and Infrastructure

Mission 3

Save the Turtles

Team Astro, save the endangered sea turtles!

- Event, Sequence, Physics
- Biology
- Life Below Water

Mission 4

Hailstorm Alert

The plane might crash due to a hailstorm!

- Event, Sequence, Coordinate, Physics
- Climatology
- Partnerships for the Goals

Mission 5

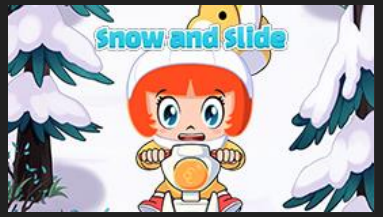
Save the Submarine

How will Astro lift up a marine probe has sunk?

- Event, Variable, Sequence, Coordinate
- Astronomy
- Industry, Innovation and Infrastructure

Mission 6

Snow and Slide



An avalanche has occurred at the top of a mountain!

- Sequence, Event, Variable, Frame
- Climatology
- Industry, Innovation and Infrastructure

Mission 7

Stormy Night

Thunder and lightning in the mountains. The lamas are in danger!

- Event, Variable, Sequence
- Climatology
- Partnerships for the Goals

Mission 8

Tornado Watch

Everyone will be in danger if the tornado isn't taken care of!

- Event, Variable, Sequence
- Climatology
- Partnerships for the Goals

Mission 9

Rescue the Penguin

After the glacier collapsed, the penguins are lost!

- Event, Variable, Physics
- Biology
- Climate Action

Mission 10

Astro Kitty and the Sinkhole

It's a sinkhole! Will Astro Kitty be able to find a way out?

- Event, Coordinate, Sequence
- Geology
- Decent Work and Economic Growth

Mission 11

Escape the Sinkhole

The exit is nowhere to be found. Perhaps the key is inside the yarn!

- Event, Array, Coordinate
- Geology
- Decent Work and Economic Growth

Mission 12

Antimatter Device Mishap

Let's throw the antimatter thruster into outer space!

- Event, sequence, physics, variable
- Engineering
- Industry, Innovation and Infrastructure

Mission 13

Halt the Train

The world's fastest train, the Blue Express. It has one flaw... It can't stop!!

- Sequence, Event, Speed, Variable, If Statement
- Physics
- Industry, Innovation and Infrastructure

Course 3: Block Coding Advanced

Target Age 9 ~ 12

Learning Time - 24 hours

6 Missions

Mission 1

Cast Away

Suzu fell onto a deserted island. She needs to escape!

- if /else Statement, Variable
- Chemistry
- Industry, Innovation and Infrastructure

Mission 2

Off to Termite Kingdom

Astro Kitty is the king of the termite kingdom!

- Event, Sequence, Physics
- Biology
- Life on Land

Mission 3

Avoid the Soldier Termite

There are ferocious soldiers around the queen!

- Event, if Statement, sequence
- Biology
- Life on Land

Mission 4

Fungi Everywhere

An ancient fungus has swallowed Dr. Blunt! How will Team Astro escape?

- Operator, if Statement, Variable
- Biology
- Life on Land

Mission 5

Plasma Storm Inbound

The sun's plasma is about to hit the spaceship!

- Variable, Clone, Coordinate, Event
- Physics
- Partnerships for the Goals

Mission 6

Deflect the Plasma Blasts

The plasma is right in front of us. What is Astro's solution?

- Loop statement
- Physics
- Partnerships for the Goals

Block Coding Overview

Course	CSTA	Mission	IT	STEM	SDG
Elementary	1A-AP-09 1A-AP-10	Off to Space We Go	Event, sequence	Astronomy - Planets and space development	Goal 9. Industry, Innovation and Infrastructure
		Avoid the Obstacles	Sequence, event, coordinate	Astronomy - Formation of the stars Technology - The role of satellites	Goal 13. Climate Action
		Hungry Recycle Robot	Sequence, event, variable	Technology - Recycling	Goal 12. Responsible consumption and production
		Trouble in the Little Garden	Event, coordinate, variable	Biology - Insect ecology	Goal 15. Life on Land
		More Trouble in the Little Garden	Event, coordinate, physics, variable	Biology - Insect ecology	Goal 15. Life on Land
Basic	1A-AP-11 1A-AP-12	Find OT2	Event, coordinate, variable	Engineering - Computers and viruses	Goal 9. Industry, Innovation and Infrastructure
		Rescue OT2	Event, sequence, speed	Engineering - Computers and viruses	Goal 9. Industry, Innovation and Infrastructure
		Save the Turtles	Event, sequence, physics	Biology - Ocean ecology	Goal 14. Life Below Water
		Hailstorm Alert	Event, sequence, coordinate, physics	Climatology - How hail is formed	Goal 17. Partnerships for the Goals
		Save the Submarine	Event, variable, sequence, coordinate	Chemistry - Changes in the properties of water according to heat	Goal 8. Decent Work and Economic Growth
		Snow and Slide	Sequence, event, variable, frame	Climatology - How an avalanche occurs	Goal 9. Industry, Innovation and Infrastructure
		Stormy Night	Event, variable, sequence	Climatology - How lightning is created Engineering - Conductors and nonconductors	Goal 17. Partnerships for the Goals
		Tornado Watch	Event, variable, sequence	Climatology - How a tornado is formed	Goal 17. Partnerships for the Goals
		Rescue the Penguin	Event, variable, physics	Biology - Polar ecosystem	Goal 13. Climate Action
		Astro Kitty and the Sinkhole	Event, coordinate, sequence	Geology - How sinkholes are formed	Goal 8. Decent Work and Economic Growth
		Escape the Sinkhole	Event, array, coordinate	Geology - How sinkholes are formed	Goal 8. Decent Work and Economic Growth
		Antimatter Device Mishap	Event, sequence, physics, variable	Engineering - The principles and roles of a cooling system	Goal 9. Industry, Innovation and Infrastructure
		Halt the Train	Sequence, event, speed, variable, if conditions	Math - Arithmetics Physics - Momentum and velocity	Goal 9. Industry, Innovation and Infrastructure
Advanced	1B-AP-09 1B--AP-10 1B-AP-11	Cast Away	if ~ else conditions, variable	Chemistry - The movement of the air depending on the temperature	Goal 9. Industry, Innovation and Infrastructure
		Off to Termite Kingdom	Event, sequence, physics	Biology - Termite ecology	Goal 15. Life on Land
		Avoid the Soldier Termite	Event, if conditions, sequence	Biology - Termite ecology	Goal 15. Life on Land
		Fungi Everywhere	comparison operator, event, if conditional statement, variable	Biology - Fungal ecology	Goal 15. Life on Land
		Plasma Storm Inbound	Variable, duplicate, coordinate, event	Physics - Plasma and magnetic fields	Goal 17. Partnerships for the Goals
		Deflect the Plasma Blasts	Loop statements	Physics - Plasma and magnetic fields	Goal 17. Partnerships for the Goals

JavaScript

ACG's 2 JavaScript Courses consist of 12 different Missions that teach students advanced concepts such as "functions" and "arrays".

With the help of ACG's auto-fill feature, students who may be new to text coding can easily select the desired command to input.

Course 4: JavaScript Advanced

Target Age 10 ~ 13

Learning Time - 35 hours

8 Missions

Mission 1

Bobo's Not Pleased

A gorilla kidnapped a child?!

- Event, Sequence
- Astronomy
- Industry, Innovation and Infrastructure

Mission 2

Into the Ocean

What has happened to the coral reef?

- Coordinate
- Biology
- Life Below Water

Mission 3

Approaching Sandstorm

A sandstorm is sweeping over the city!

- Event, Coordinate, Random number
- Climatology
- Climate Action

Mission 4

Paleozoeic Nightmare

An island ruled by insects?

- Event, coordinate, if Statmenet, variable
- Biology
- Life on Land

Mission 5

Disable the Frequency Emitter

What is the machine that is tormenting the whale?

- Variable, if /else Statement, vent
- Astronomy
- Industry, Innovation and Infrastructure

Mission 6

Damaged Satellite

Team Astro faces an unprecedented crisis trying to make repairs!

- Variable, if/ else Statement, Operator
- Technology
- Climate Action

Mission 7

Poison Mountain Analysis

So many withered leaves... What happened on this mountain?

- if Statement, variable, Operator, Event
- Chemistry
- Responsible consumption and production

Mission 8

Poison Mountain Restoration

A giant explosion is imminent! Astro has a powerful secret weapon.

- Global variable, if Statement, Operator
- Chemistry
- Responsible consumption and production

Course 5: JavaScript Mastery

Target Age 10 ~ 13

Learning Time - 11 hours

4 Missions

Mission 1

Garbage Island

Clean the ocean before the turtles swallow the trash in the sea.

- Function
- Biology
- Life Below Water

Mission 2

OT2's Advice

OT2 presents today's health advice.

- Variable, Array, Random number
- Technology
- Industry, Innovation and Infrastructure

Mission 3

OT2's Naming Algorithm

Dr. Serene has created a new flower. What's the name?

- Variable, Array, Random number
- Technology
- Industry, Innovation and Infrastructure

Mission 4

Volcanic Nightmare

The world is engulfed in flames. Keep everyone safe!

- Function, Clone, if Statement, Variable, Operator
- Geology
- Partnerships for the Goals

JavaScript Overview

Course	CSTA	Mission	IT	STEM	SDG
Advanced	1B- AP- 11 2-AP-11	Bobo's Not Pleased	Event, coordinate, sequence	Biology - Habits of the mountain gorilla	Goal 15. Life on Land
		Into the Ocean	Event, coordinate, sequence	Biology - Coral Reef ecology	Goal 14. Life Below Water
		Approaching Sandstorm	Event, coordinate, random number	Climatology - How sandstorms are formed Engineering - Solving problems through a scientific approach	Goal 13. Climate Action
		Paleozoeic Nightmare	Event, coordinate, random number, if conditional statement, variable	Biology - Paleozoic climate	Goal 15. Life on Land
		Disable the Frequency Emittee	Variable, if ~ else conditional statement, event	Biology - Animals using ultrasound	Goal 14. Life Below Water
		Damaged Satellite	Variable, if ~ else conditional statement, arithmetic operator, event	Technology - Role of satellites	Goal 13. Climate Action
		Poison Mountain Analysis	Conditional statement, variable, arithmetic operator, event	Chemistry - Flame reactions to metal elements	Goal 12. Responsible consumption and production
		Poison Mountain Restoration	Global variable, conditional statement, arithmetic operator, event	Chemistry - Flame reactions to metal elements	Goal 12. Responsible consumption and production
Mastery	1B-AP-12 2-AP-12 3-AP-14	Garbage Island	Function	Biology - Impact of marine pollution on the ecosystem	Goal 14. Life Below Water
		OT2's Advice	Variable, array, random number	Technology - Artificial intelligence	Goal 9. Industry, Innovation and Infrastructure
		OT2's Naming Algorithm	Variable, array, random number	Technology - Plant engineering	Goal 9. Industry, Innovation and Infrastructure
		Volcanic Nightmare	Function, cloning, if conditional statement, variable, operator	Geology - Volcanic activity	Goal 17. Partnerships for the Goals


Astro
Coding Go!