

neopia Proposal for education

Robot · Coding · AI



Table of Contents

1

Category of curriculum
(page 3)

2

Learning Benefit / Products are selected as a educational material for school textbook in Korea (page 4 - 5)

3

Proposal 1. Robot education
(page 6 - 19)

4

Proposal 2. Computer coding
(Page 20 - 25)

5

Proposal 3. Robot & AI
(page 26 - 30)

6

Proposal 4. Electronic Circuit & Neo Sound (DIY product)
(page 31 - 36)

7

Proposal 5. Singe products for home schooling(Toy)
(page 37 - 40)



Category of curriculum



ROBOT A->E
/1.5 years



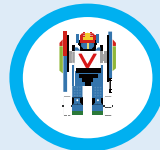
Computer
coding
/ 6months



Robot & AI
/ 2months



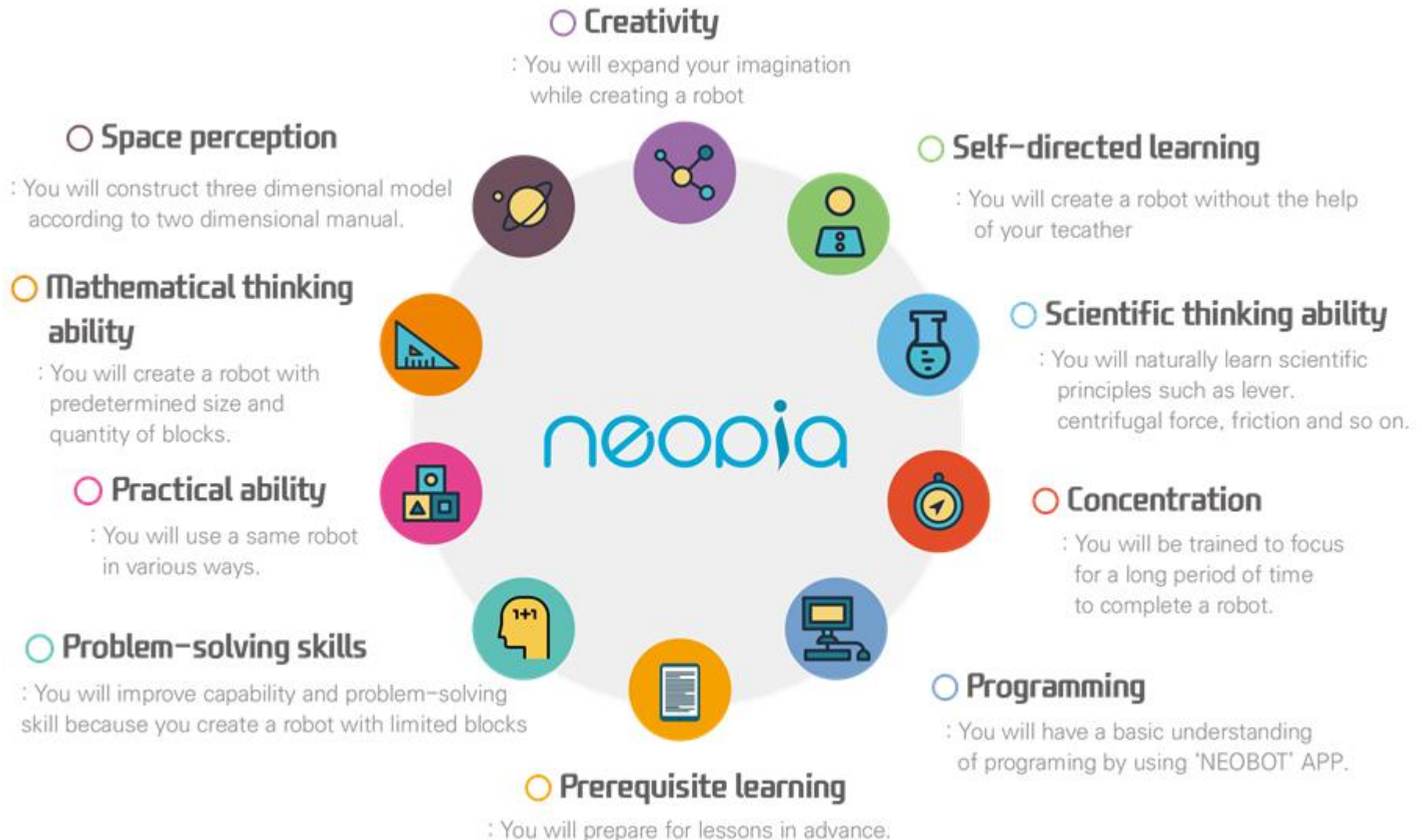
Electronic
circuit
/ 2months



Robot for home
schooling
(Single product)

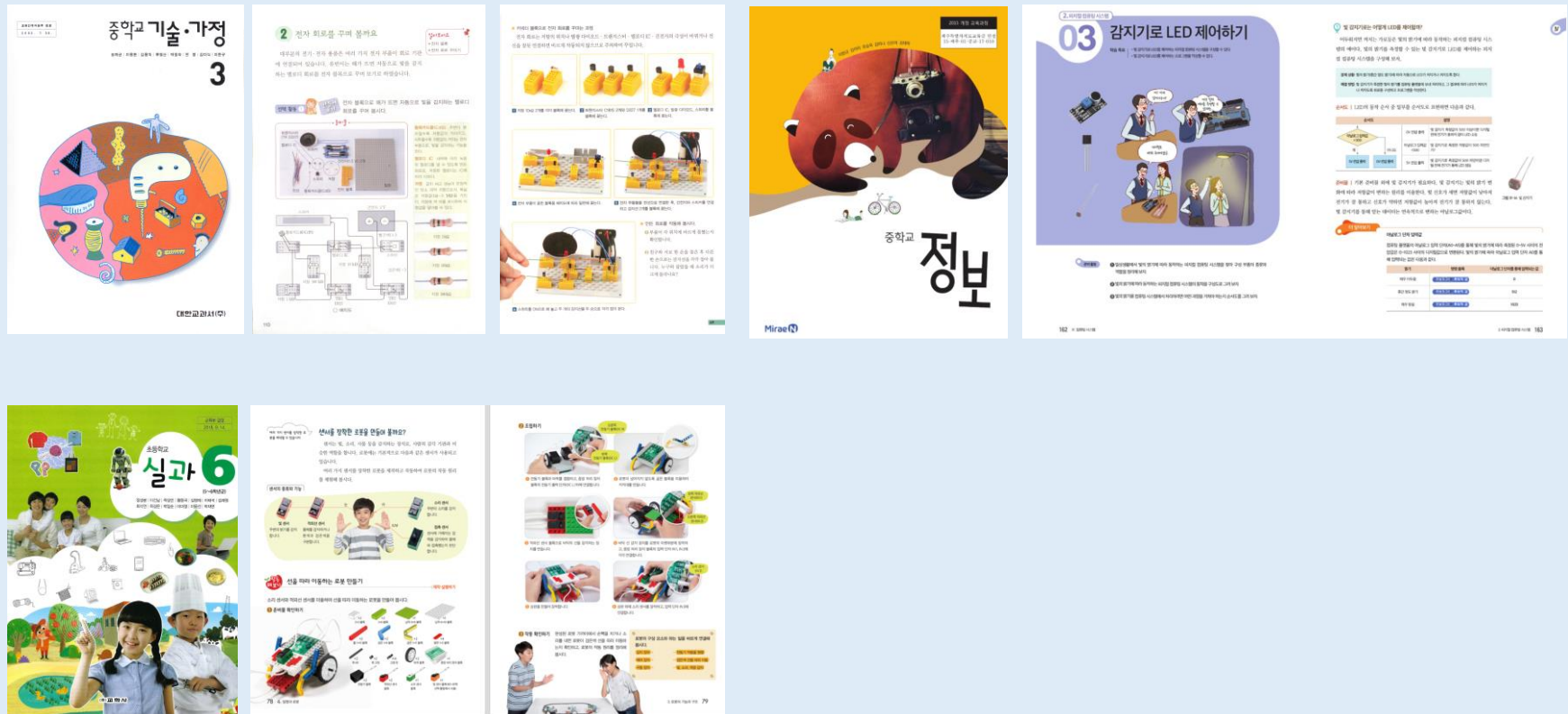


Learning Benefit



LEARNING TOOLS ADOPTED IN KOREA TEXTBOOKS

- NEOPIA products are selected as an educational material for school textbook by the government of Korea



Proposal 1. Curriculum for Robot education

- ✓ Class : STEAM education Robot
- ✓ Product : Neobot A → Neobot B → Neobot C → Neobot D
→ Neobot E
- ✓ Time : 90 Min. / Week [15 months]
- ✓ Summary
 - Learn how to create a robot with blocks.
 - Operates robots by remote controller & sensor manipulation, and coding.
 - Essential basic curriculum of robot education.



Curriculum Concept



Imagine



Making



Moving



Learning!!

Key feature of curriculum

1. Education for robot assembly

- How can I make a robot better? : Try to make lots of robot repeatedly.
- Then why block robot is better? Blocks are frames that are easy to assemble and disassemble, and that you can learn repeatedly!
- Any type of imaginable robot can be assembled with blocks! 100% compatible with other blocks!

2. Fun-oriented education


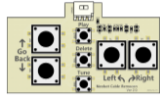



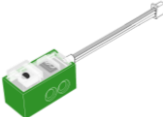
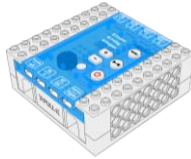
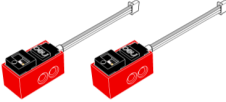

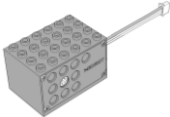
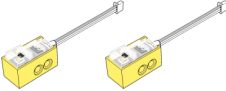
- Other robots, Don't you think it's difficult? If you feel that, you may cannot continue learning for a long time.
- The education direction what Neobot pursues is a 'SUSTAINABLE' education!
- Especially, Children can learn robots naturally by creating, controlling robots, and playing games with Neobot A and Neobot B.

3. Systematic robot education


- Children can learn the sensor and how to apply programs to robots through Neobot C.
- Robot education is completed after learning how to code directly with a cellphone in Neobot D.



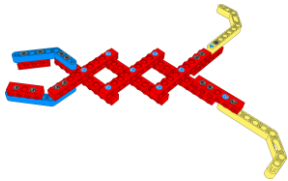
Main parts of each steps

	Neobot A	Neobot B	Neobot C	Neobot D
Main parts	 <p>Yellow CPU</p>  <p>Wired remote controller</p>  <p>RC cable</p>  <p>DC motor</p>	 <p>Wireless remote controller</p>  <p>Remote receiver</p>	 <p>Blue CPU</p>  <p>Infrared sensor</p>	 <p>APP & OTG set</p>  <p>Servo motor</p>  <p>LED block</p>
Characteristic	Controlling with a wired remote controller	Using IR sensor & Wireless remote controller	A robot controlled by a sensor based on a stored program	Robot control after direct coding with cellphone APP

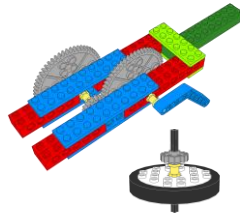
Annual Curriculum – Neobot A(For 3 months)

Image	Chapter	Name	Educational contents
	1	Gadget-Arm	A long tool to pick things out of reach
	2	Top-Spinner	A top has an acceleration structure to spin fast
	3	Shoot-Car	A car to move with elasticity of rubber band
	4	Neo-Benny	A robot to move with wired remote controller
	5	Soccer-Bot	A soccer player to play soccer game
	6	Duck-Family	A robot which shows us the duck's movement
	7	Bull-Dozer	A vehicle which is efficient in pushing away things
	8	Neo-Beagle	A robot which mimics the dog's movement
	9	Mini-Truck	A small truck that can load blocks
	10	Push-Man	A robot continuously pushes forward with its 2 arms
	11	Robot-Coach	A robot which pulls a carriage
	12	Stone-Pitcher	A device that throw blocks far away

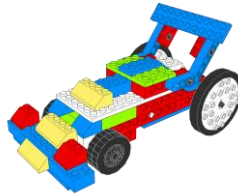
Neobot A assembly models



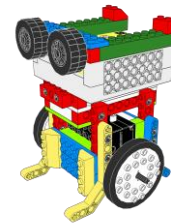
Gadget Arm



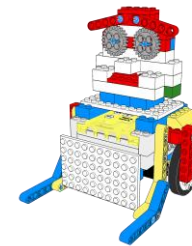
Top-Spinner



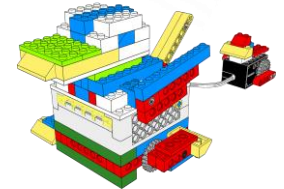
Shoot-Car



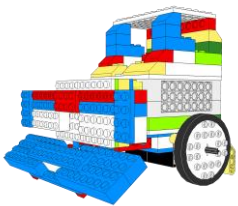
Neo-Benny



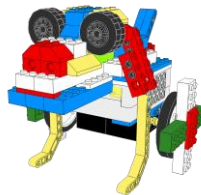
Soccer-Bot



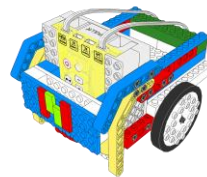
Duck-Family



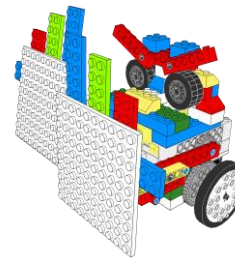
Bull-Dozer



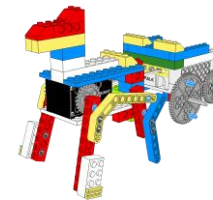
Neo-Beagle



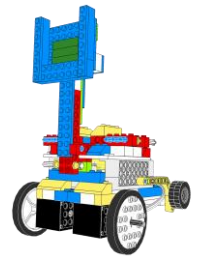
Mini-Truck



Push-Man


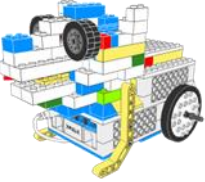
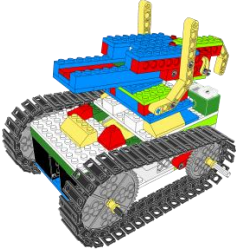


Robot-Coach

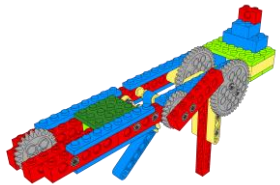


Stone-Pitcher

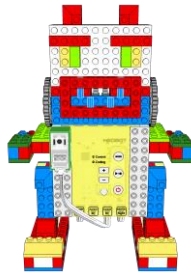
Annual Curriculum – Neobot B(For 3 months)

Image	Chapter	Name	Educational contents
	1	Fire-Gun	A gun that looks like a shooter game gun
	2	Wrinkle-Monster	A robot to make wrinkled paper with gears
	3	Rudolph-Sleigh	A Robot moves with a wireless remote controller
	4	Big-Benny	A Neo-Benny to grow up more
	5	Walking-Heli	A Propeller is rotating during walk
	6	Guide-Bot	A robot can be learn about the caterpillar
	7	Neo-Soldier	A robot can move with the caterpillar
	8	Stag beetle-Bot	A robot which has arms to catch the prey
	9	Mechanic-Car	A robot is racing on the playground
	10	Pelican-Dice	A robot to throw a dice when sops suddenly
	11	Running-Bugs	A robot which can moves 4 legs
	12	Stricker	A small tank that can move through enemy lines

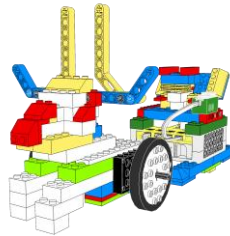
Neobot B assembly models



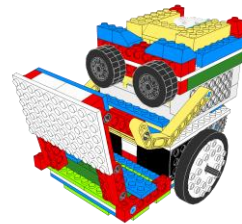
Fire-Gun



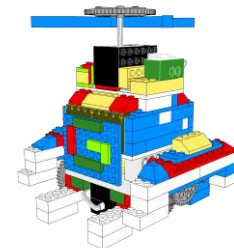
Wrinkle-Monster



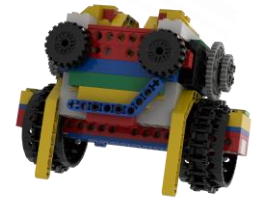
Rudolph-Sleigh



Big-Benny



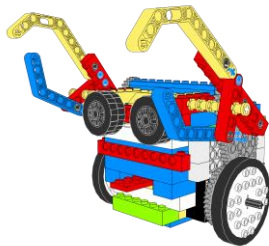
Walking-Heli



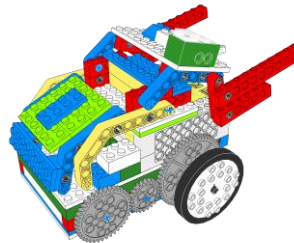
Guide-Bot



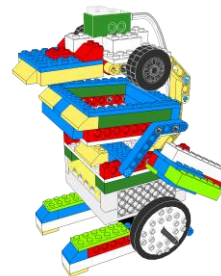
Neo-Soldier



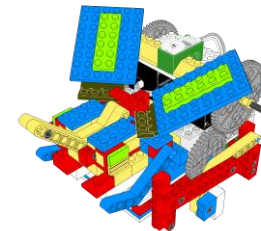
Stag beetle-Bot



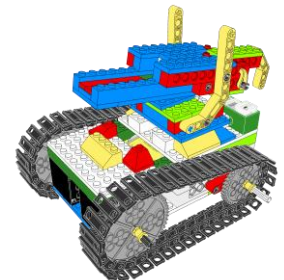
Mechanic-Car



Pelican-Dice




Running-Bug

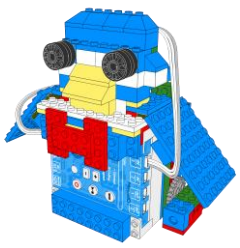


Stricker

Annual Curriculum – Neobot C(For 3 months)

Image	Chapter	Name	Educational contents
	1	Penguini	A penguin shape piggy bag which can dance when you put a coin into it
	2	Neo-Cleaner	A robot vacuum to clean up your surroundings
	3	Dile-E	A crocodile which closes its mouth according to different probabilities
	4	Army-Benny	A robot which installed by caterpillars
	5	Soccer-Bot V2	A striker and goalpost equipped with sensors
	6	Dice-Bot	A robot that throws dices automatically
	7	Jeep-Car	A robot which equipped with detection sensor
	8	Waterwheel	A robot which pounds grain by the power of water
	9	Chaser	A robot which chasing the block color road
	10	Roy	A robot which following me
	11	Neo-Handyman	A robot which plays 'Rock – Scissors – Paper' game
	12	Car-Port	A garage which has an automatic door system

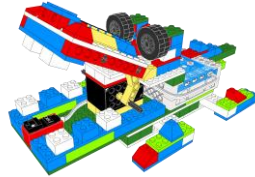
Neobot C assembly models



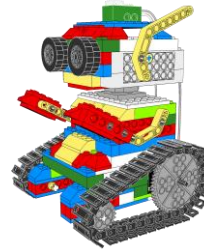
Penguini



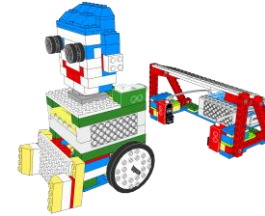
Neo-Cleaner



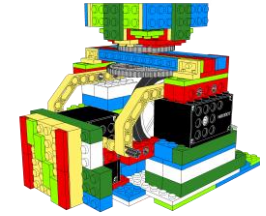
Dile-E



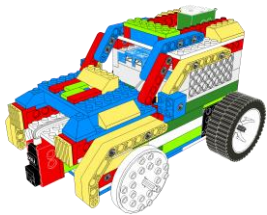
Army-Benny



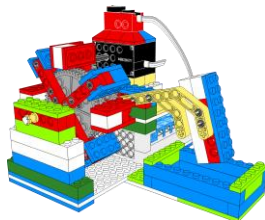
Soccer-Bot V2



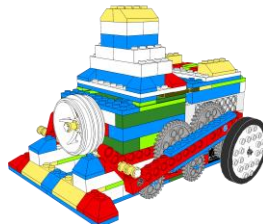
Dice-Bot



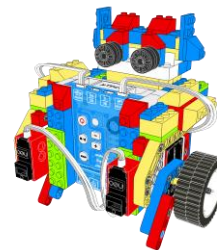
Jeep-Car



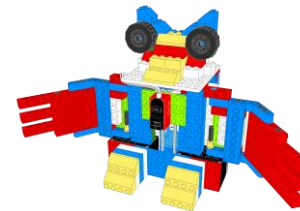
Waterwheel



Chaser



Roy

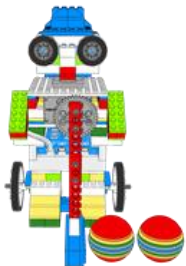
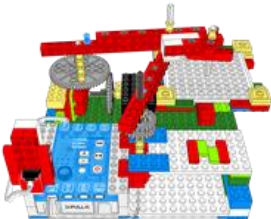



Neo-Hanyman

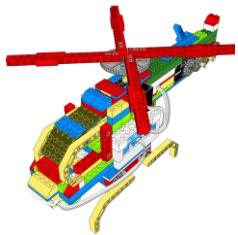


Car-Port

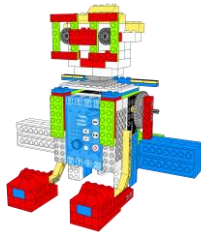
Annual Curriculum – Neobot D(For 3 months)

Image	Chapter	Name	Educational contents
	1	NEO-Helicopter	When you make it take off, the propeller rotates and the light(LED) turns on automatically.
	2	Flag-Bot	Try to play the blue and white flag game using the cellular phone APP.
	3	Golf-Bot	It is a golf robot made to putt using a servo motor.
	4	Vending-Machine	Let's make a vending machine where blocks come out when you insert money.
	5	Finger Basketball Machine	Try to shoot with flicking your finger. When the basketball goes into the rim, the buzzer sounds and the LED lights up.
	6	NEO Robot-Arm	If touching two infrared sensors with thumb and index finger at same time, the robot arm to close tongs to grab an object.
	7	Power-Truck	Control the direction & truck loader of the truck with remote controller.
	8	Drawing-bot	Shall we make a Drawing-Bot and draw a nice pattern picture?
	9	Conveyor System	Shall we make a conveyor system to classify blocks by size?
	10	Mars-Benny	The Benny has been upgraded to a Mars rover. Lights on also the LED in the eye automatically when combined.
	11	Neo-Tank	The gun barrel can also move left and right with a servo motor.
	12	Boxing-Bot	It is a cute boxing robot that does push-ups and also hits punching bag.

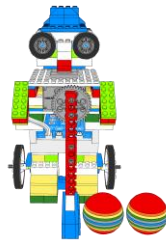
Neobot D assembly models



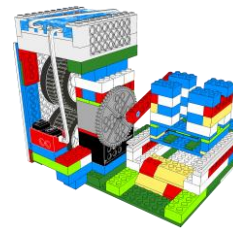
Neo-Helicopter



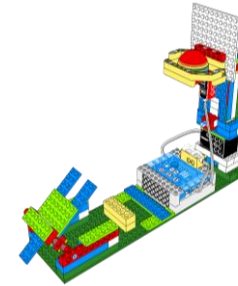
Flag-Bot



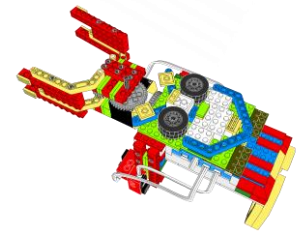
Golf-Bot



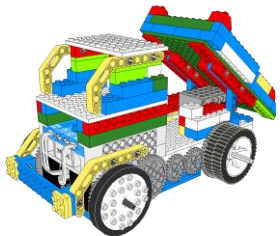
Vending Machine



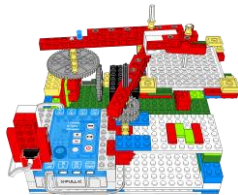
**Finger Basketball
Machine**



NEO Robot-Arm



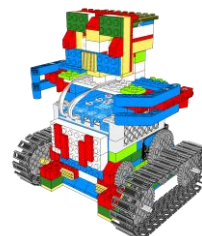
Power-Truck



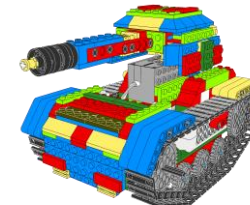
Drawing-Bot



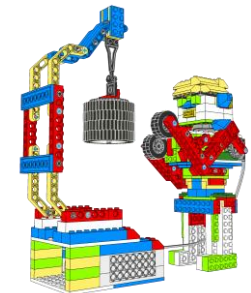
Conveyor System



Mars-Benny




NEO-Tank



Boxing-Bot

Annual Curriculum – Neobot E(For 3 months)

Image	Chapter	Name	Educational contents
	1	Goalkeeper-Bot	Let's make a goalkeeper who protects the goal and try coding it to block the goal.
	2	The UFO	It can be learn the color sensor value according to the color.
	3	Dancing Gorilla	It can be learn the features and commands of servo motors.
	4	Battel Cruiser	It is possible to understand the principle that blocks are fired by a rotating motor.
	5	Horror Ferris wheel	It is possible to understand the feature and value of the distance sensor.
	6	Fork lift	It can be learn how a forklift works.
	7	Driving simulator	It can be learn what the simulator device is.
	8	Pteranodon	It can be learn what the Pteranodon is.
	9	Neo Knight	It can be understand the life of a knight who was active in the Middle Ages.
	10	Robot factory	It can be understand what the robotic engineer doing.
	11	Aegis warship	It can be learn about the functions of the Aegis ship.
	12	Ichthyosaur	It can be learn about the ecology of shark.

Neobot E assembly models



Goalkeeper-Bot



The UFO



Dancing Gorilla



Battle Cruiser



Horror Ferris wheel



Fork lift



Driving simulator



Pteranodon



Neo Knight



Robot factory



Aegis warship



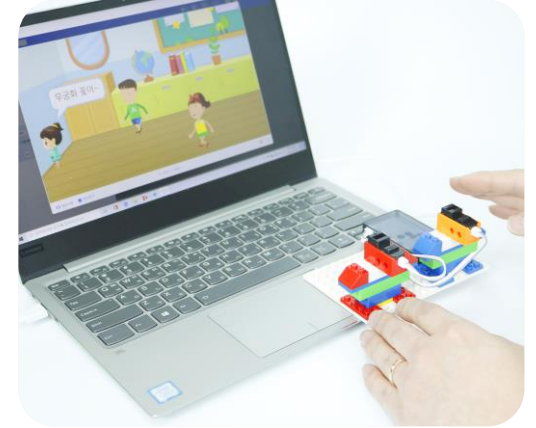
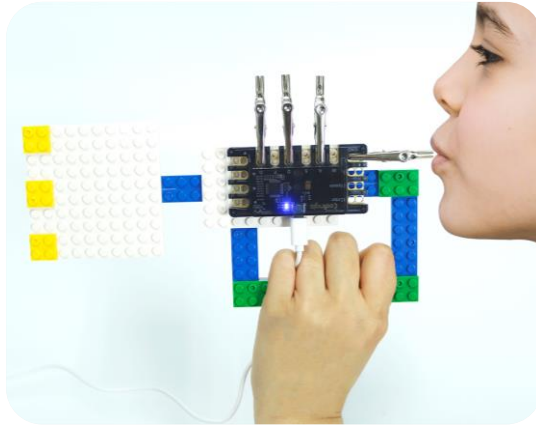
Ichthyosaur

Proposal 2. Computer coding curriculum

- ✓ Class : Theme coding
- ✓ Product : NeoCoding Art heme → NeoCoding Sensor theme
- ✓ Time : 90Min. / Week [6momths]
- ✓ Summary
 - Learn to code by using the coding platform 'Entry' on a computer.
 - It is easy to use and understand as it is coding by dragging the command word in block image with the mouse.
 - It deals with more fundamental and systematic coding, not coding for controlling robots.



Curriculum concept



Coding education through arts and sports activities such as music, art, and physical education

Coding education to meet characters in computer

Key feature of curriculum

1. Theme type coding education

- Coding education is conducted through various activities such as music, art, storytelling, and games.
- No time to get bored because there are contents of two different themes.

2. Appropriate Hardware in included

- Without hardware quickly becomes boring and no funny.
- It completely different from robot education but fun coding education using hardware.

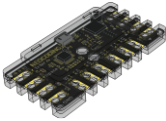




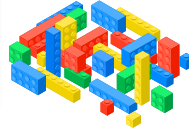


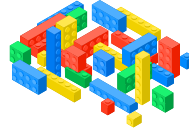

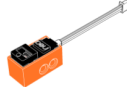
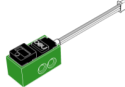
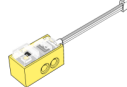


3. Block image coding

- Until when will it be difficult and complex text coding? If the principles are the same, learn to easy!
- Drag & drop method of block images on a computer!
'Let's code with the eyes!' 'Let's code with understanding!'



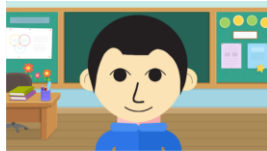
Main parts & characteristic of each themes

	Art Theme	Sensor Theme
Main part	<div> Art board</div> <div> USB cable</div> <div> Work sheet (10pcs)</div> <div> Earth ring (ground line)</div> <div> Connect cable</div> <div> Blocks</div>	<div> Sensor board</div> <div> USB cable</div> <div> Blocks</div> <div> Infrared sensor</div> <div> Light sensor</div> <div> Sound sensor</div> <div> LED block</div>
Characteristic	Learn to code through fun activities such as assembling models and playing music, art, and games.	Learn to code by controlling the character in the computer using sensors connected to the assembling model.

Introduction of Art theme contents



Making art theme



**Express avatar
emotion**



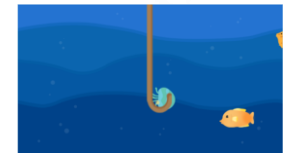
Guitarist



Wizard



**Monster beat
box**



Cane fishing



**Throwing away
trash**



Reveille



**Our neighborhood
Olympics**



**Smart world
travel**



**Korean super
hero**



**Dismantling
Bomb**

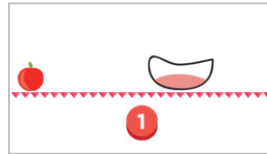
Introduction of Sensor theme contents



Space trip



Catch a thief



Eat everything



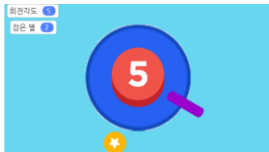
Invisible Cloak



Do-Re-Mi Game



Air balloon



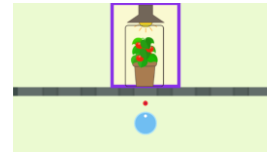
Looking for Star



Planet escape



Penalty kick



Growing plants



Robot Vacuum



Balloon travel

Proposal 3. Robot & AI education curriculum

- ✓ Class : Robot & AI
- ✓ Product : NeoSoCo
- ✓ Time : 90 min. / week [2months]
- ✓ Summary

- Recommendable curriculum for children who want to learn robots, AI and coding in a short time.
- Understanding coding while controlling representative robots designed to understand sensor characteristics.
- Learn how to apply AI technology to the robot.



Curriculum concept

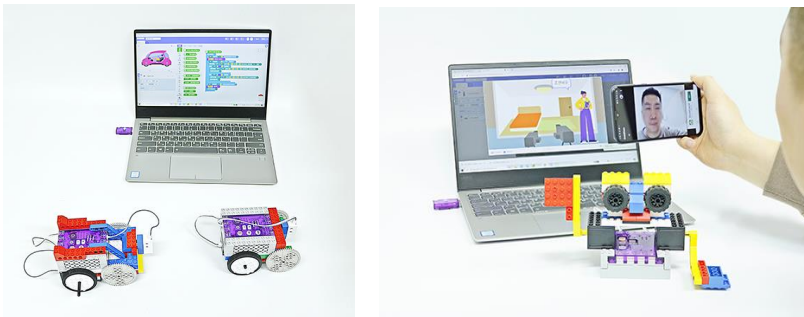
Assembling robot



Coding



Apply Robot & Coding



Understanding sensors & AI technology



Key feature of curriculum

1. AI introductory training

- Learn AI skills and learn how to apply them to robots
- Create your own AI robot using machine learning

2. Representative robot item that applies the characteristics of sensor well

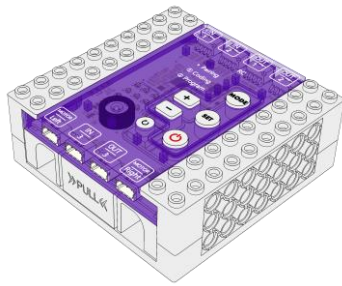
- Can create and apply robot that fit the situation while understanding the characteristics of various sensors.
- Can be learned intensively essential contents in robot education in a short time.

3. Dual coding using cellphone APP and computer

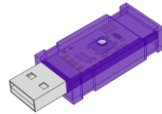
- Convenient coding with a cellphone application!
- Systematic coding using the 'Entry' platform operated by portal site 'Naver' in Korea!



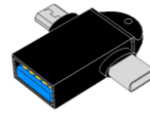
Main parts of Neo SoCo



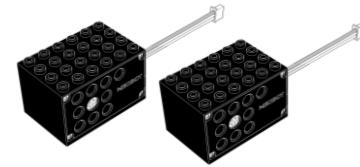
AI CPU



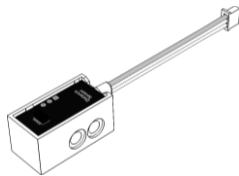
Dongle



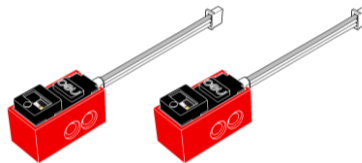
OTG



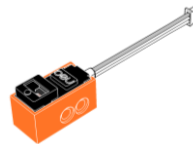
DC motor



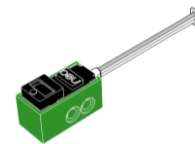
Distance sensor



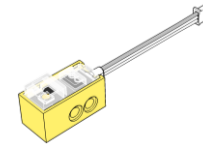
Infrared sensor



Light sensor



Sound sensor



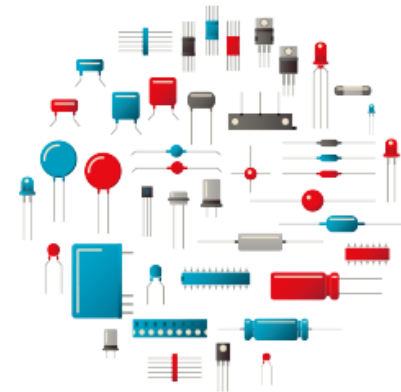
LED block

Introduction of NeoSoCo contents

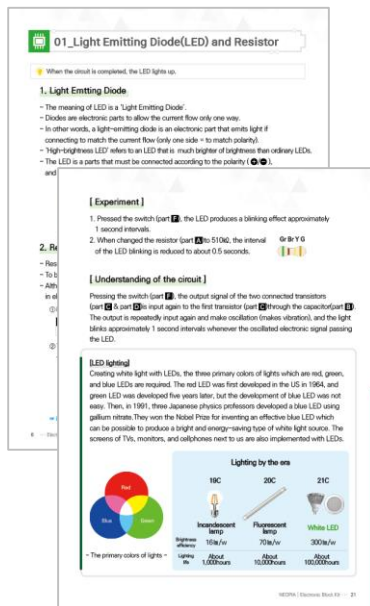


Proposal 4. Education curriculum of electronic circuit

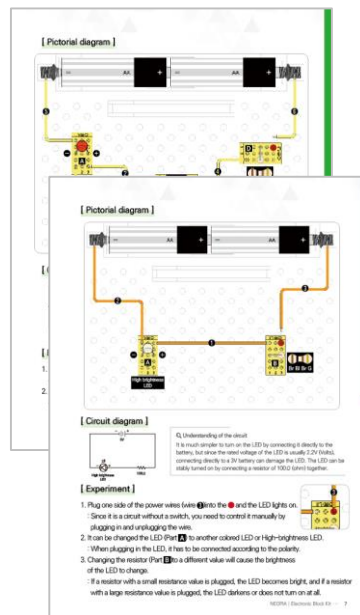
- ✓ Products : Neo Circuit, Neo Sound / Can be used in conjunction with two products or used alone
- ✓ Time : 30 min. / Week [2months ~ 5 months]
- ✓ Summary
 - It starts with a basic electric/electronic curriculum using electronic parts, and covers application circuits.
 - By making and using Bluetooth speakers with circuits, we can understand what is electronic circuits.



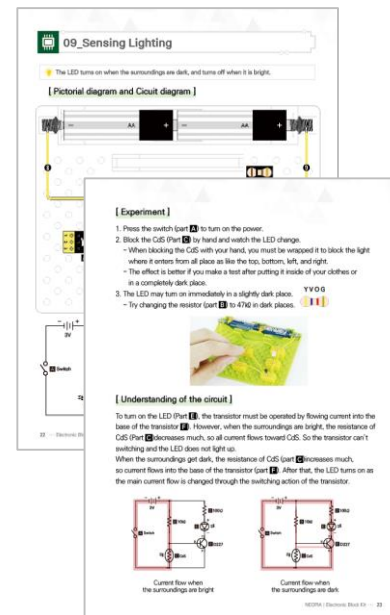
Curriculum concept



Learn the feature of electronic parts



Making the basic electronic circuit



Making the applied electronic circuit



Making a Bluetooth speaker that applied with an electronic circuit



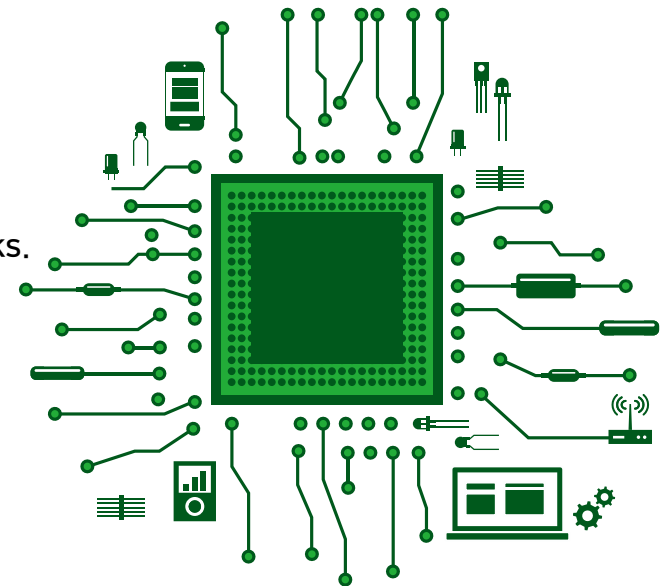
Key feature of product

1. Neo Circuit

- It is formed by plugging parts and wires into a baseplate without any tools
- It is a products to learn electronic circuit with the easiest and convenience way.

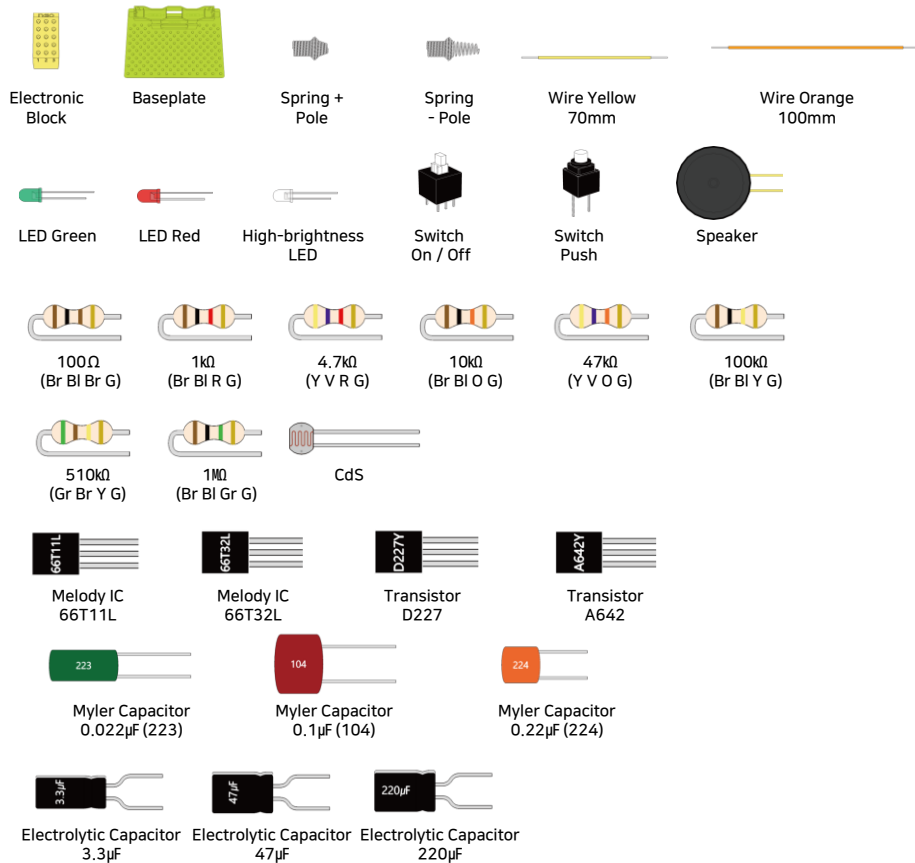
2. Neo Sound

- Can understand the process how to apply electronic circuit learned with Neo Circuit to real products.
- Makes Speaker by connecting amplifiers, speaker, and switches through blocks.

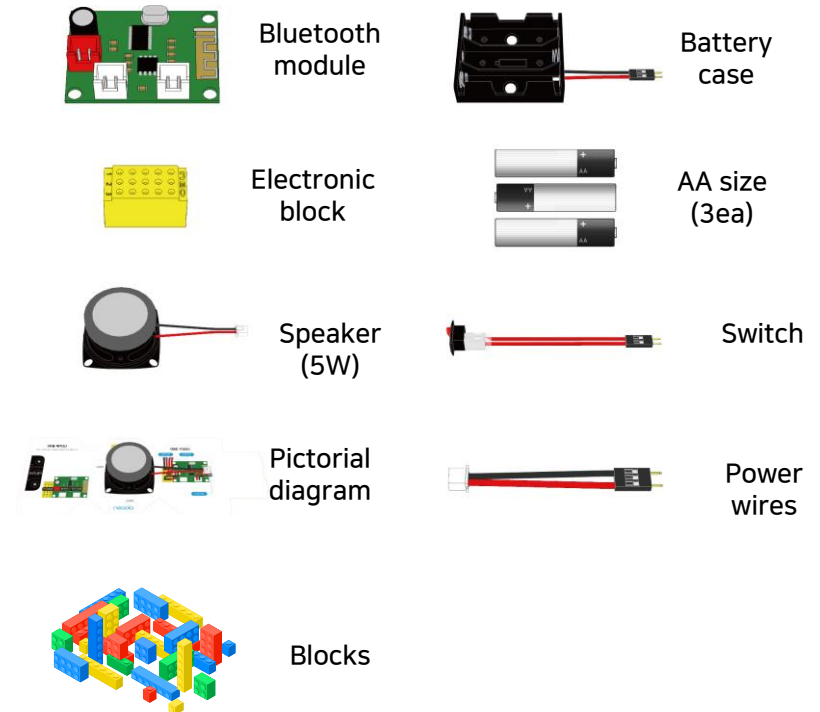


Main parts of Neo Circuit & Neo Sound

Neo Circuit



Neo Sound



Introduction of Neo Circuit contents



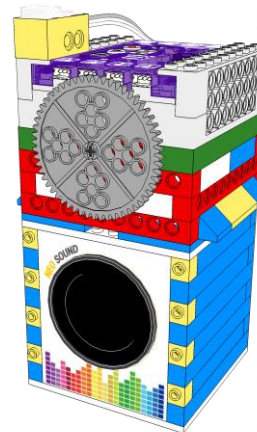
Understanding of electronic parts

- 01_ Light emitting Diode(LED) and Resistor
- 02_ Switch
- 03_ CdS Cell
- 04_ Melody IC
- 05_ Transistor
- 06_ Capacitor

Basic electronic parts

- 07_ Electronic Buzzer
- 08_ Blinking LED
- 09_ Sensing Lighting
- 10_ Burglar Alarm
- 11_ Auto Alarm
- 12_ Love Chain
- 13_ Electronic Siren
- 14_ Electronic Blinker

Introduction of Neo Sound contents(DIY)



Proposal 5. Single Products (Block Robot Type)

- ✓ Product : Neobot Unplugged, Neobot Home, Neobot Special / Total 3 Types
- ✓ Final User : For individual
- ✓ Summary
 - Recommended if you want to learn & to play robots slowly by yourself, not in group classes.
 - This product can be used both for learning and for toy.



Curriculum concept



Can be learned robots in your own way at anytime and place you want!

Key feature of each products

1. Neobot Unplugged

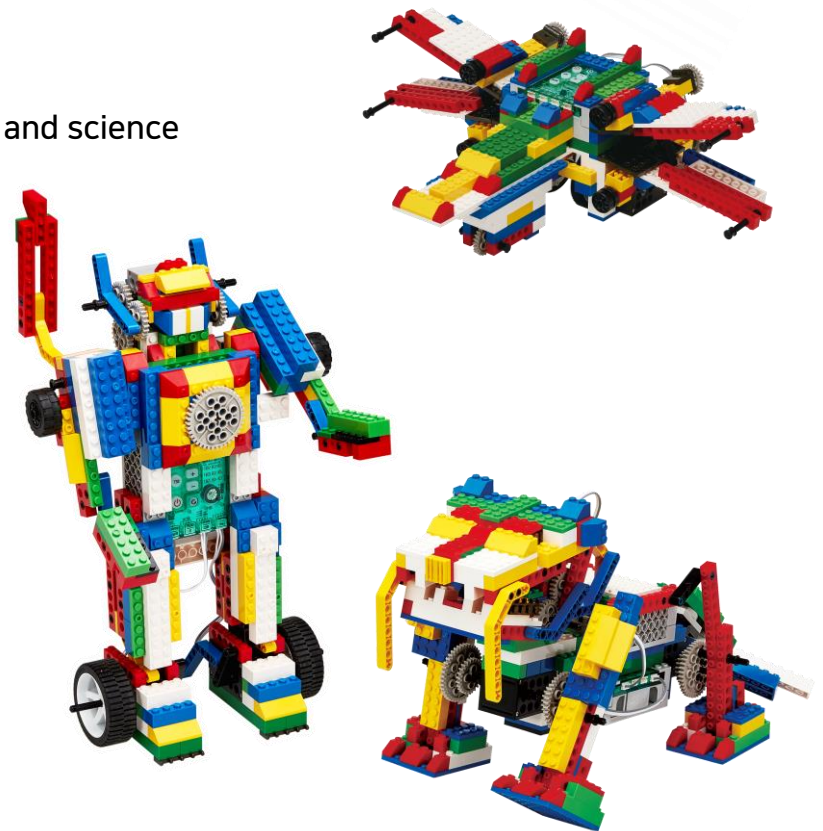
- Using blocks only without CPU, Motor, and Remote controller
- Composed products to learn the principles of mechanical structure and science

2. Neobot Home

- Using CPU to run robots
- The step of controlling robots with a remote controller can be compressed and experience.

3. Neobot Special

- Product that combines all contents of Neobot A ~ D into one.
- Can be used at home schooling, robot institute, club activities, and easy to manage and economical.

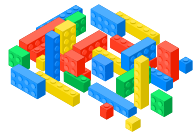


Main parts of each products

Neobot Unplugged



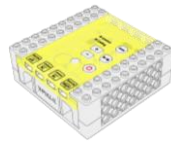
Book



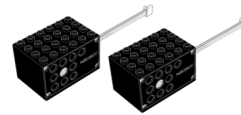
Blocks

Main
parts

Neobot Home



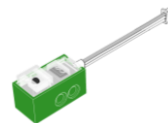
Yellow CPU



DC motor



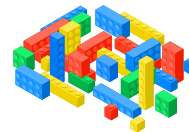
Wireless remote
controller



Remote
receiver



Book

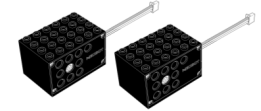


Blocks

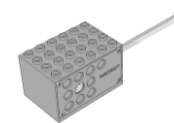
Neobot Special



Blue CPU



DC motor



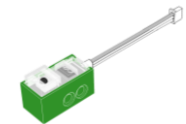
Servo motor



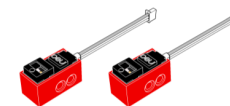
APP&OTG Set



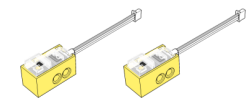
Wireless remote
controller



Remote
receiver



Infrared sensor



LED block

Thank you for your attention!



NEOPIA Co., Ltd T. 82-32-260-7200 F. 82-32-260-7202

302Ho, 129 Gaetbeol-ro(Songdo-Dong), Yeonsu-gu, Incheon, Korea. 21999

PIC : jhcho@neobot.co.kr / M.P : +82 (0) 10 3325 9085