

# LEGO® Education WeDo 2.0

Designing  
Investigating  
Modeling  
Computing



LEGO® Education  
WeDo 2.0

NATIONAL CURRICULUM  
STANDARD COMPLIANT



WeDo 2.0





# Table of contents

**Introduction to WeDo 2.0**

**3-6**

**WeDo 2.0 in Curriculum**

**7-11**

**Assess with WeDo 2.0**

**12-18**

**Classroom Management**

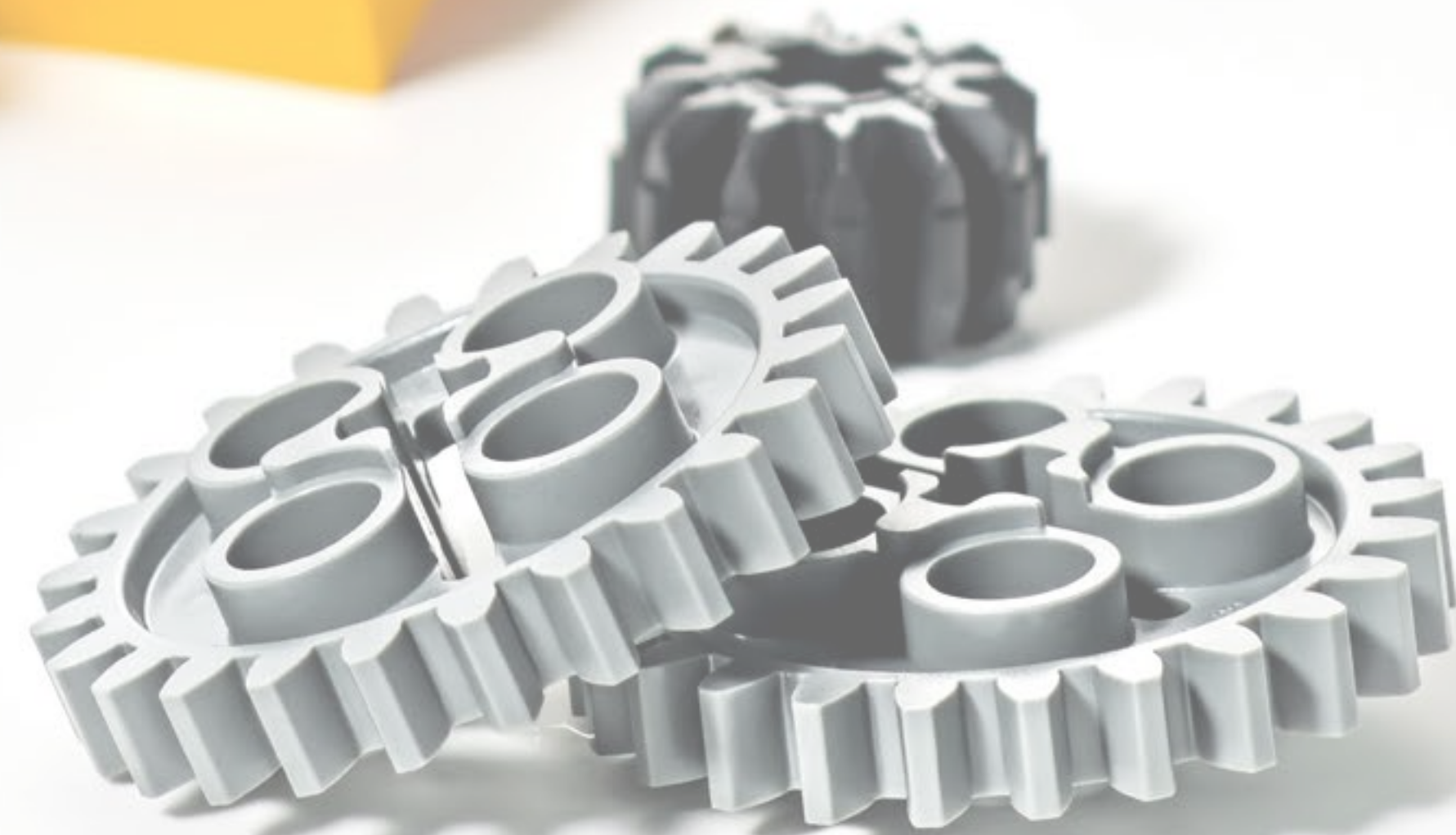
**19-22**

**Getting Started Projects**

**23-34**

**Build with WeDo 2.0**

**35-45**





# Introduction to WeDo 2.0

Welcome to the LEGO® Education WeDo 2.0 Curriculum Pack.

In this chapter, you will discover the fundamental steps needed for the journey you are about to experience.







## How to teach science with WeDo 2.0

WeDo 2.0 uses a project progression defined by three phases.

### Explore phase

Students connect to a scientific question or an engineering problem, establish a line of inquiry, and consider possible solutions.

The steps of the Explore phase are: connect and discuss.

### Create phase

Students build, program, and modify a LEGO® model. Projects can be one of three types: investigate, design solutions, and use models. Depending on the type of project, the Create phase will differ from one project to another.

The steps of the Create phase are: build, program, and modify.

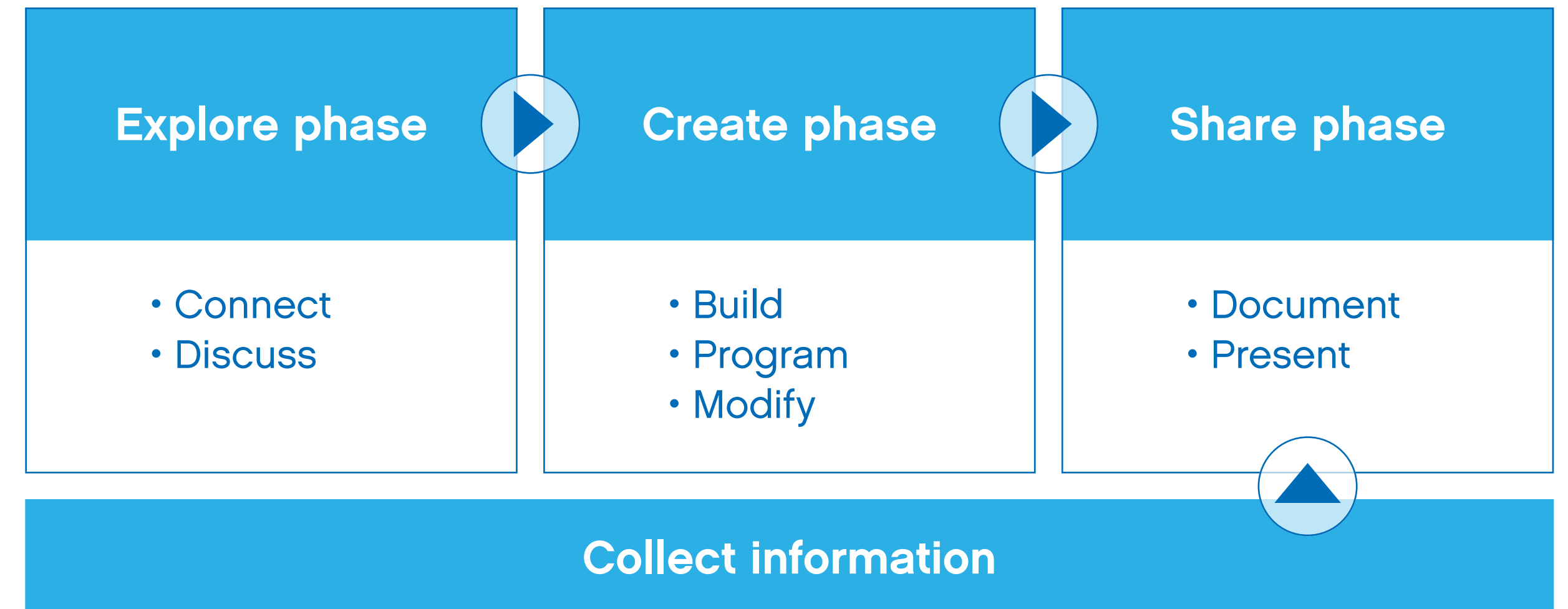
### Share phase

Students present and explain their solutions using their LEGO models and the document they have created with their findings with the integrated Documentation tool.

The steps of the Share phase are: document and present.

### ▶ Important

During each of these phases, students will document their findings, the answers, and the process using various methods. This document can be exported and used for assessment, display, or sharing with parents.







## Document projects

Having your students document their work is one of many ways you can keep track of their work, identify where they need more help, and evaluate their progress.

Students can use many different methods to express their ideas. During the ongoing documentation process, they can:

1. Take pictures of important steps of their prototype or their final models.
2. Take pictures of the team working on something important.
3. Record a video explaining a problem they are facing.
4. Record a video explaining their investigation.
5. Write critical information within the Documentation tool.
6. Find supporting pictures on the Internet.
7. Take a screen capture of their program.
8. Write, draw, or sketch on paper and take a photo of it.

### ▶ Suggestion

Depending on the age group you work with, the combination of paper and digital documentation can be the richest.







## Share projects

At the end of the project, students will be excited to share their solutions and findings. It will be a great opportunity to develop their communication ability.

Here are different ways you can have your students share their work:

1. Have students create the display where the LEGO® model will be used.
2. Have students describe their investigation or diorama.
3. Have a team of students present their best solution to you, to another team, or in front of the class.
4. Have an expert (or some parents) come to your class to listen to your students.
5. Organize a science fair at your school.
6. Have students record a video to explain their project and post it online.
7. Create and display posters of the projects in your school.
8. E-mail the project document to parents or publish in student portfolios.

### ▶ Suggestion

To make this experience even more positive, have students give one positive comment or ask one question about others' work when they take part in the sharing session.





# WeDo 2.0 in Curriculum

The LEGO® Education WeDo 2.0 solution combines LEGO bricks with Next Generation Science Standards (NGSS). The projects are designed to develop student science practices.

In this chapter, you will be introduced to three innovative ways to use the bricks in your classroom:

- Model reality.
- Conduct investigations.
- Use design skills alongside the development of science practices.







## Develop science and engineering practices with WeDo 2.0

WeDo 2.0 projects will develop science practices. They provide opportunities for students to work with and develop ideas and knowledge as well as an understanding of the world around them.

The progression and difficulty level in the projects allow students to develop competency while exploring and learning about key science topics. The projects have been carefully chosen to cover a wide variety of topics and issues.

WeDo 2.0 projects develop eight science and engineering practices:

1. Ask questions and solve problems.
2. Use models.
3. Design prototypes.
4. Investigate.
5. Analyze and interpret data.
6. Use computational thinking.
7. Engage in argument from evidence.
8. Obtain, evaluate, and communicate information.

The guiding principle is that every student should engage in all of these practices across the projects in each grade.





## Science practices and the engineering habits of mind

The science and engineering practices serve as the common thread throughout the curriculum, and all standards should, in essence, be taught through them. While the academic definition of each process is important, it is probably a good habit to verbalize the practices in a way that is understandable to students at that level.

The following identifies the basic principles of these practices and gives examples on how they are used in WeDo 2.0 projects.

### **1. Ask questions and define problems.**

This practice focuses on simplistic problems and questions based upon observational skills.

### **2. Develop and use models.**

This practice focuses upon students' prior experiences and the use of concrete events in modeling solutions to problems. It also includes improving models and new ideas about a real-world problem and solution.

### **3. Plan and carry out investigations.**

This practice is about how students learn and follow directions for an investigation to formulate probable solution ideas.

### **4. Analyze and interpret data.**

The focus of this practice is to learn ways to gather information from experiences, document discoveries, and share ideas from the learning process.





## Science practices and the engineering habits of mind

### **5. Use mathematics and computational thinking.**

The purpose of this practice is to realize the role of numbers in data-gathering processes. Students read and gather data about investigations, make charts, and draw diagrams resulting from the numerical data. They add simple data sets to come up with conclusions. They understand or create simple algorithms.

### **6. Construct explanations and design solutions.**

This practice is about ways they might go about constructing an explanation or designing a solution for a problem.

### **7. Engage in argument from evidence.**

Constructively share ideas based upon evidence that it is an important feature of science and engineering. This practice is about how students begin to share their ideas and demonstrate proof to others in a group.

### **8. Obtain, evaluate, and communicate information.**

Teaching children what real scientists do is key to this practice. The way in which they set up and complete investigations to gather information, how they evaluate their findings, and how they document are all important elements. It is important that teachers explore a plethora of ways to have students gather, record, evaluate, and communicate their findings. Ideas include digital presentations, portfolios, drawings, discussion, video, and interactive notebooks.

### **▶ Important**

The WeDo 2.0 projects will engage your students in all science and engineering practices. Refer to the practices grid of this chapter to get the overview.





## Use LEGO® bricks in a computational thinking context

Computational thinking is a set of problem-solving skills that are applied to working with computers and other digital devices. In WeDo 2.0, computational thinking is handled in a developmentally appropriate manner through the use of icons and programming blocks.

Computational thinking characteristics include:

- Logical reasoning
- Looking for patterns
- Organizing and analyzing data
- Modeling and simulations
- Using computers to assist in testing models and ideas
- Using algorithms to sequence actions

Its application in science and engineering projects enables students to use powerful digital tools to carry out investigations and build and program models, which might otherwise be tricky to do. Students use programs to activate motors, lights, sounds, or displays, or to react to sounds, tilt, or movement to implement functionalities to their models or prototypes.

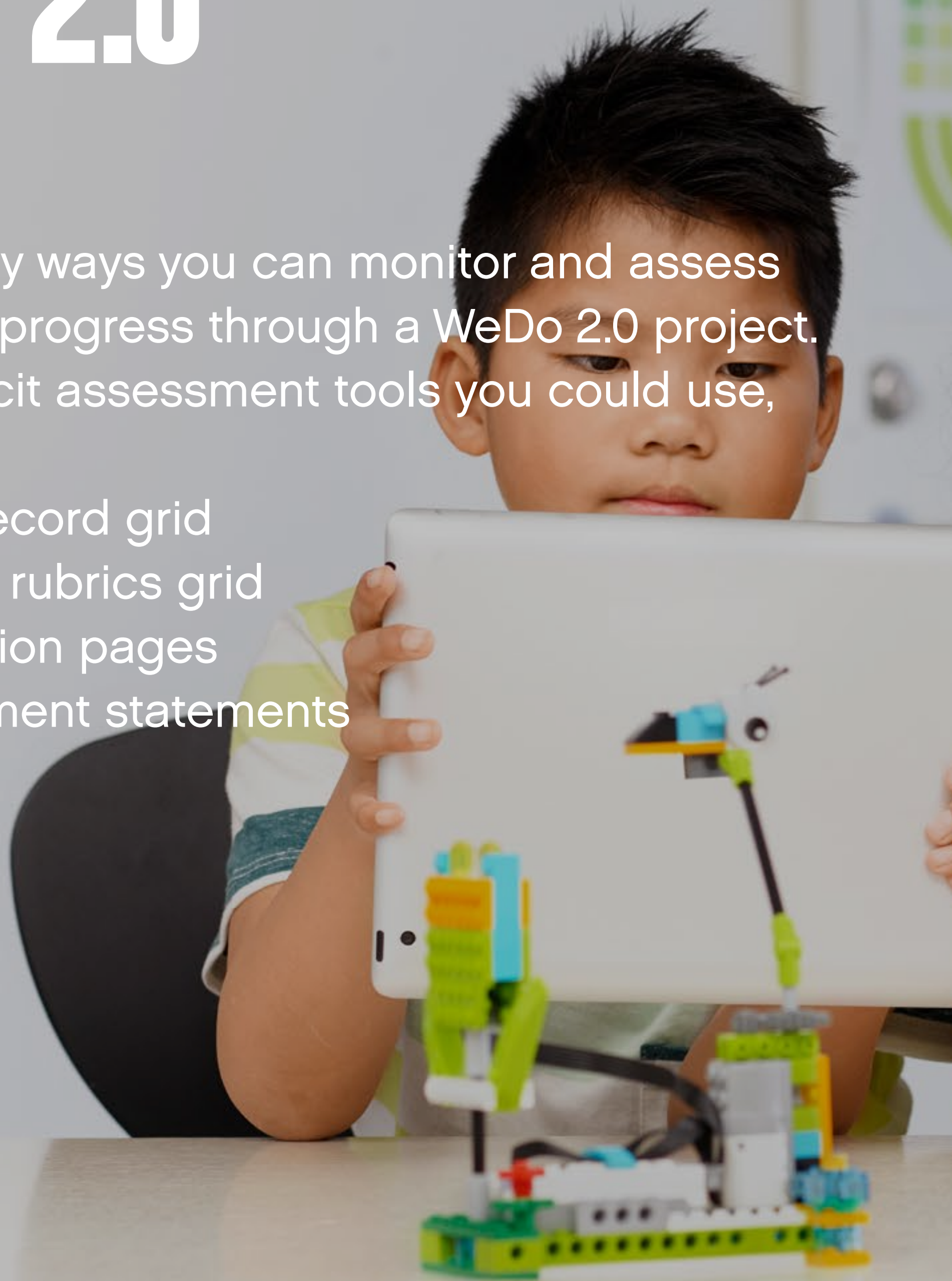




# Assess with WeDo 2.0

There are many ways you can monitor and assess your students' progress through a WeDo 2.0 project. Here are explicit assessment tools you could use, including:

- Anecdotal record grid
- Observation rubrics grid
- Documentation pages
- Self-assessment statements







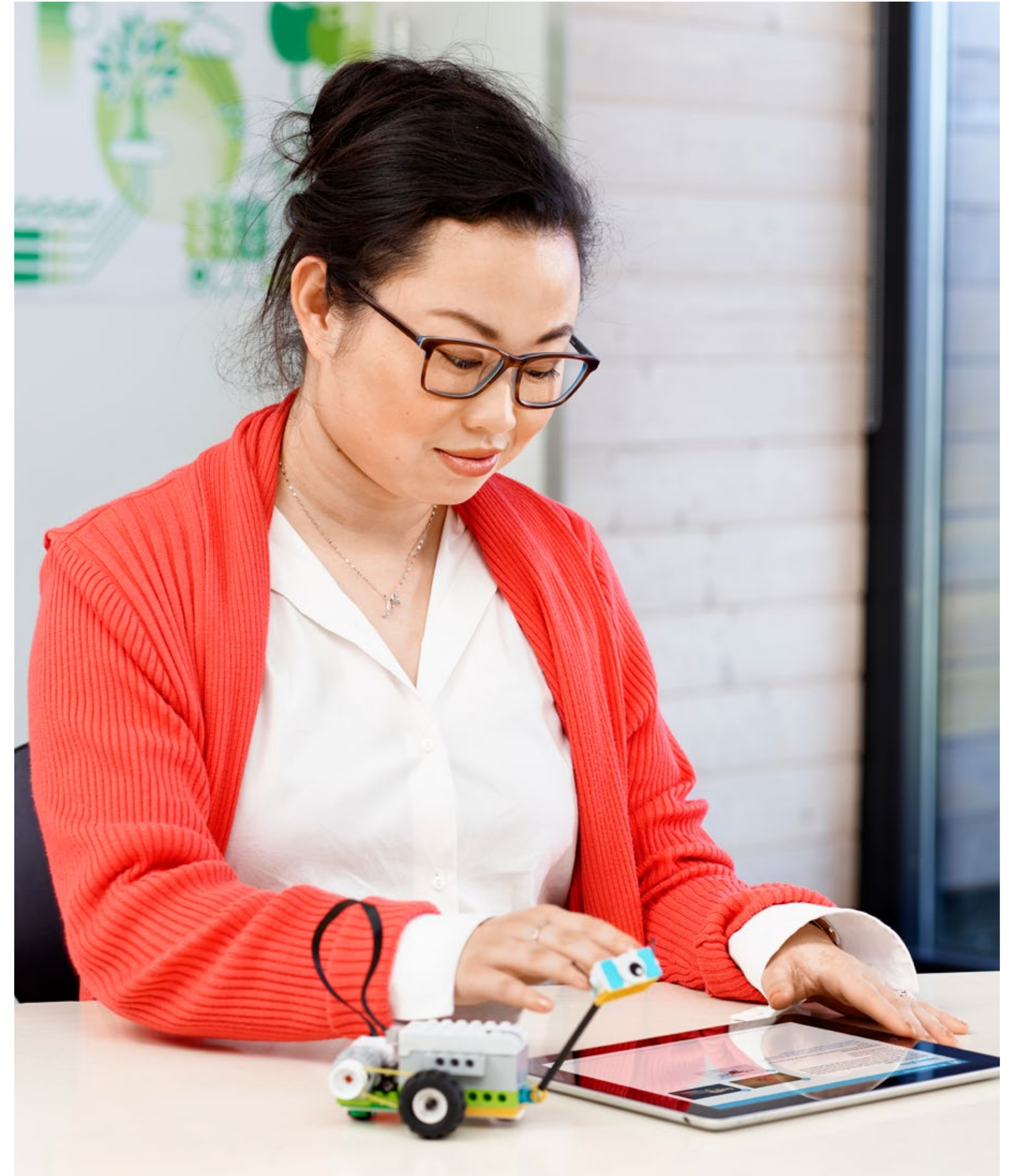
## Teacher-led assessment

Developing students' science and engineering practices takes time and feedback. Just as in the design cycle, in which students should know that failure is part of the process, assessment should provide feedback to students in terms of what they did well and where they can improve.

Problem-based learning is not about succeeding or failing. It is about being an active learner and continually building upon and testing ideas.

### **Anecdotal record grid**

The anecdotal record grid lets you record any type of observation you believe is important about each student. Use the template on the next page to provide feedback to students about their learning progress as required.







# Anecdotal record grid

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Project: \_\_\_\_\_

Emerging	Developing	Proficient	Accomplished

Notes:





# Teacher-led assessment

## Observation rubrics

An example of rubrics has been provided for every Guided Project. For every student, or every team, you can use the Observation rubrics grid to:

- Evaluate student performance at each step of the process.
- Provide constructive feedback to help the student progress.

Observation rubrics provided in the Guided Projects can be adapted to fit your needs. The rubrics are based on these progressive stages:

### 1. Emerging

The student is at the beginning stages of development in terms of content knowledge, ability to understand and apply content, and/or demonstration of coherent thoughts about a given topic.

### 2. Developing

The student is able to present basic knowledge only (vocabulary, for example), and cannot yet apply content knowledge or demonstrate comprehension of concepts being presented.

### 3. Proficient

The student has concrete levels of comprehension of content and concepts and can demonstrate adequately the topics, content, or concepts being taught. The ability to discuss and apply outside the required assignment is lacking.

### 4. Accomplished

The student can take concepts and ideas to the next level, apply concepts to other situations, and synthesize, apply, and extend knowledge to discussions that include extensions of ideas.

## ▶ Suggestion

You can use the observation rubrics grid on the next page to keep track of your students' progress.







# Observation rubrics grid

Class:		Project					
Students' names		NGSS			ELA		
		Explore	Create	Share	Explore	Create	Share
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							







To be used with the rubrics description in the “Guided Projects” chapter (1. Emerging, 2. Developing, 3. Proficient, 4. Accomplished).





# Student-led assessment

## Documentation pages

Each project will ask students to create documents to summarize their work.

To have a complete science report, it is essential that students:

- Document with various types of media.
- Document every step of the process.
- Take the time to organize and complete their document.

It is most likely that the first document your students will complete will not be as good as the next one:

- Allow them time and feedback to see where and how they can improve some parts of it.
- Have your students share the documents with each other. By communicating their scientific findings, students are engaged in the work of scientists.

## Self-assessment statements

After each project, students can reflect on the work they have done. Use the following page to encourage reflection and set goals for the next project.







# Student self-assessment rubric

Name: \_\_\_\_\_

Class: \_\_\_\_\_

Project: \_\_\_\_\_

	Explore	Create	Share
	I documented and used my best reasoning in connection with the question or problem.	I did my best work to solve the problem or question by building and programming my model and making changes when needed.	I documented important ideas and evidence throughout my project and gave my very best when presenting to others.
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>			

### Project reflection

One thing I did really well was:

---

One thing I want to improve upon for next time is:

---



# Classroom Management

In this chapter, you will find information and guidance to ease the implementation of WeDo 2.0 in your classroom.

The secret for success resides in some key elements:

- Good material preparation
- Good classroom disposition
- Good WeDo 2.0 project preparation
- Good guidance of students







## Prepare the material

### Prepare the material

1. Install the software on computers or tablets.
2. Open each LEGO® Education WeDo 2.0 core set and sort the elements.
3. Attach the labels to the relevant compartments in the sorting tray.
4. You may want to identify and label the box, Smarthub, motor, and sensors with a number. That way, you can sign out a numbered kit to each student or team. You may find it helpful to also display the parts list in the classroom.
5. Put two AA batteries in the Smarthub or use the supplementary Smarthub Rechargeable Battery.

### Suggestion

To strongly improve your classroom experience, it is recommended that you give a name to each Smarthub from the list in the Connection Center.

When you access the Connection Center:

1. Press on the button on the Smarthub.
2. Locate the Smarthub name in the list.
3. Long Press on the name you want to change.
4. At this point, you will be able to enter a name of your choice.

You can insert names following a code, such as:

- WeDo-001
- WeDo-002
- etc.

By doing this, it will be easier for the students to connect with the right Smarthub.





## Before you start a project

### Classroom disposition

1. Organize a cabinet, a wheeled cart, or other space to store the sets between sessions.
2. If not already available in your classroom, prepare a box of measuring tools, including rulers or measuring tapes and paper, for collecting data and making charts.
3. Ensure there is enough space in the classroom for the project to happen.
4. When planning the projects, ensure enough time for the students to store their models or put the parts back in the box at the end of a session.

### Teacher preparation

1. Spend some time exploring the bricks in the set, and decide on a few key expectations to determine what to do when the WeDo 2.0 materials are used in class.
2. Set aside an hour and try the Getting Started Project as if you were a student.
3. Read the overview and projects description in the “Open Projects” chapter and select the project you wish to do.
4. Review the planning of the project you have selected.

*Now you are good to go!*







## Student guidance

It is important to establish good classroom management habits when working with the WeDo 2.0 sets and digital devices.

It may be helpful to establish clear expectations for team roles:

- WeDo 2.0 projects are optimal for a team of two students working together.
- Have students work to their strengths in their groups.
- Make adjustments for challenging teams who are ready to develop new skills and improve further.
- Assign or have students determine specific roles for each team member.

### Suggestion

Assign a role to each student so the team can foster collaboration and cooperation skills. Here are some roles you could use:

- Builder, brick picker
- Builder, brick assembler
- Programmer, creating the program strings
- Documenter, taking photos and videos
- Presenter, explaining the project
- Team captain

It is also a good idea to rotate roles, to let every student experience all components of the project, and, therefore, get the chance to develop a range of skills.



# Getting Started Projects

**Milo, the Science Rover**  
24-28



**Milo's Motion Sensor**  
29-30



**Milo's Tilt Sensor**  
31-32



**Collaborate**  
33-34





Getting Started Project, part A

# Milo, the Science Rover

This project is about discovering ways that scientists and engineers can use rovers to explore places where humans cannot go.







## Quick glance: Getting Started Project, part A

### Preparation: 30 min.

- See the general preparation in the “Classroom Management” chapter.
- Read this project so you have a good idea of what to do.
- Prepare to introduce this project to your students.
- Define your expectations and theirs.
- Determine the end result of this project:  
Everyone should have a chance to build, program, and document.
- Make sure timing allows for expectations to be met.

### Explore phase: 10 min.

- Start the project using the introductory video.
- Have a group discussion.

### Create phase: 20 min.

- Have students build the first model from the provided building instructions.
- Let them program the model with the sample program.
- Allow students time so they can make their own experiment and change the parameters of the program.
- Challenge them to discover new programming blocks on their own.

### Share phase: 10 min.

Some suggestions for sharing include:

- Make sure your students take photos of their model.
- Make sure they write their names and comments in the Documentation tool.
- Have your students export the results of their project and share it with their parents.

### ▶ Important

It is recommended that you complete the four Getting Started Projects in a single sequence. If not, then it is preferable that you complete these prior to continuing on to other projects in order to provide students ample time to explore the materials.

Approximate timing for the four Getting Started Projects is:

- Part A: Milo, the Science Rover: 40 min.
- Part B: Milo's Motion Sensor: 15 min.
- Part C: Milo's Tilt Sensor: 15 min.
- Part D: Collaborate: 15 min.





## Explore phase

### Use the introductory video

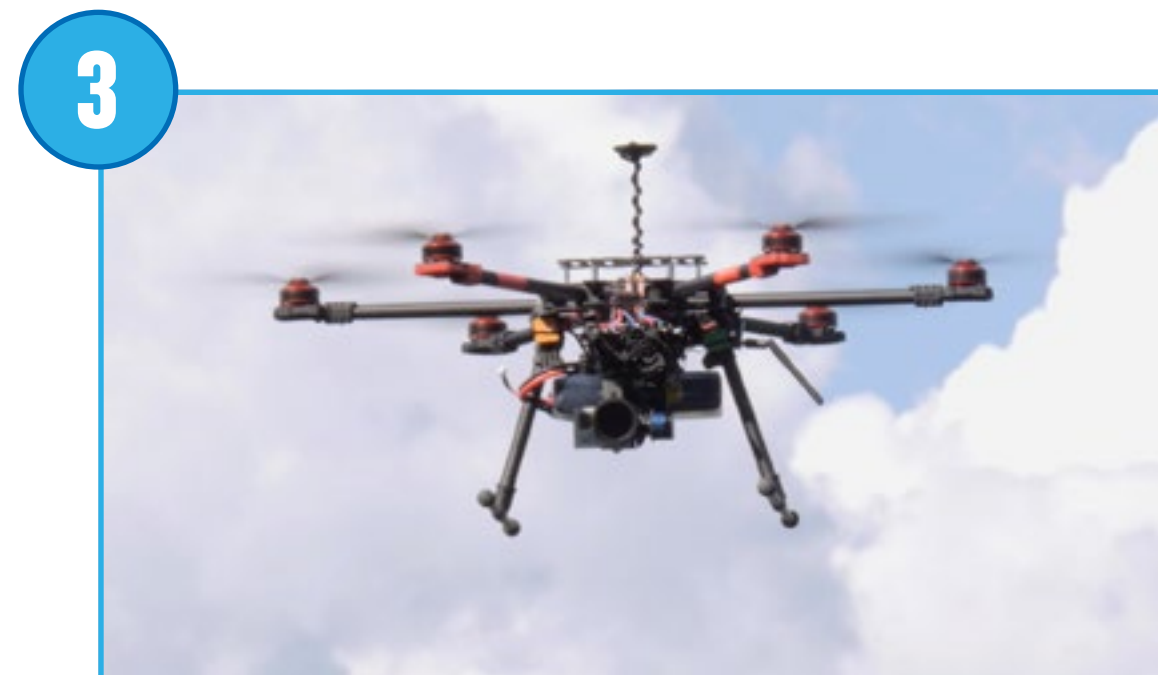
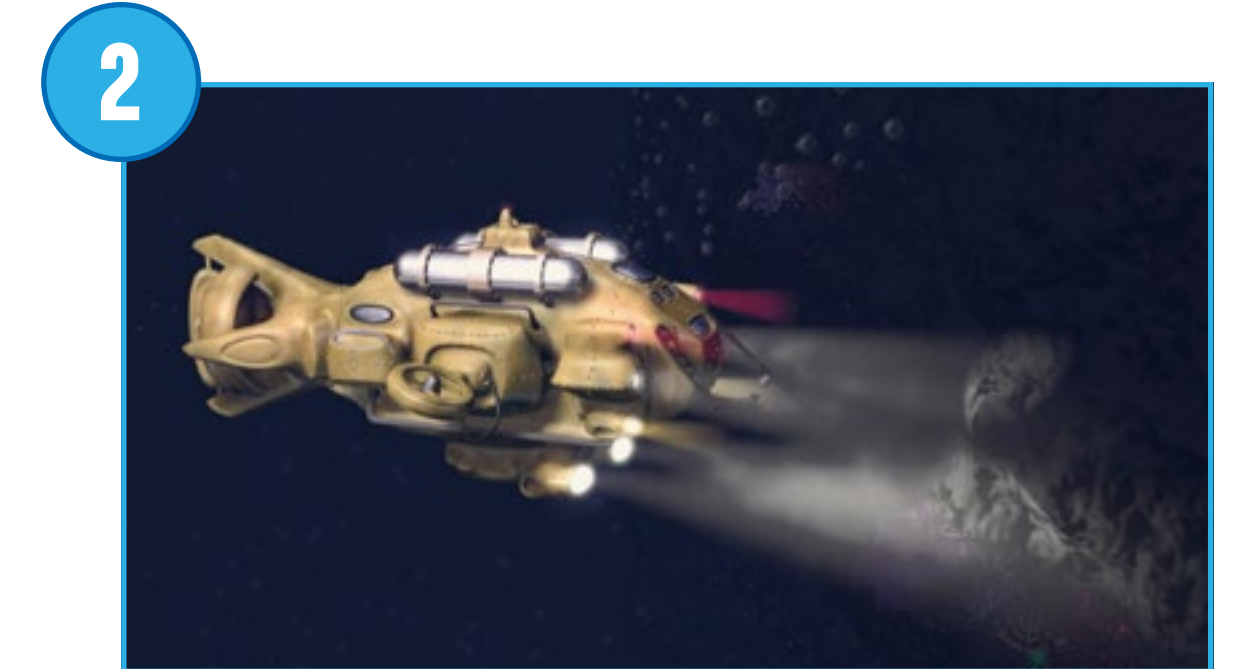
Scientists and engineers have always challenged themselves to explore remote places and make new discoveries. To succeed in this journey, they have designed spacecraft, rovers, satellites, and robots to help them see and collect data about these new places. They have succeeded many times and failed many times, too. Remember that failure is a chance to learn more. Use the following ideas to start thinking like a scientist:

1. Scientists send rovers on Mars.
2. They use submarines in water.
3. They fly drones in a volcano.

### Questions for discussion

1. What do scientists and engineers do when they cannot go where they want to explore?

Scientists and engineers take these situations as challenges they want to solve. With proper resources and commitment, they will develop prototypes as possible solutions and ultimately choose the best option.







## Create phase

### Build and program Milo

Students should follow the building instructions to build Milo, the Science Rover.

#### 1. Build Milo, the Science Rover.

This model will give students a “first build” experience with WeDo 2.0.

#### ▶ Important

Make sure everyone can connect the motor to the Smarthub and can connect the Smarthub to the device.

#### 2. Program Milo.

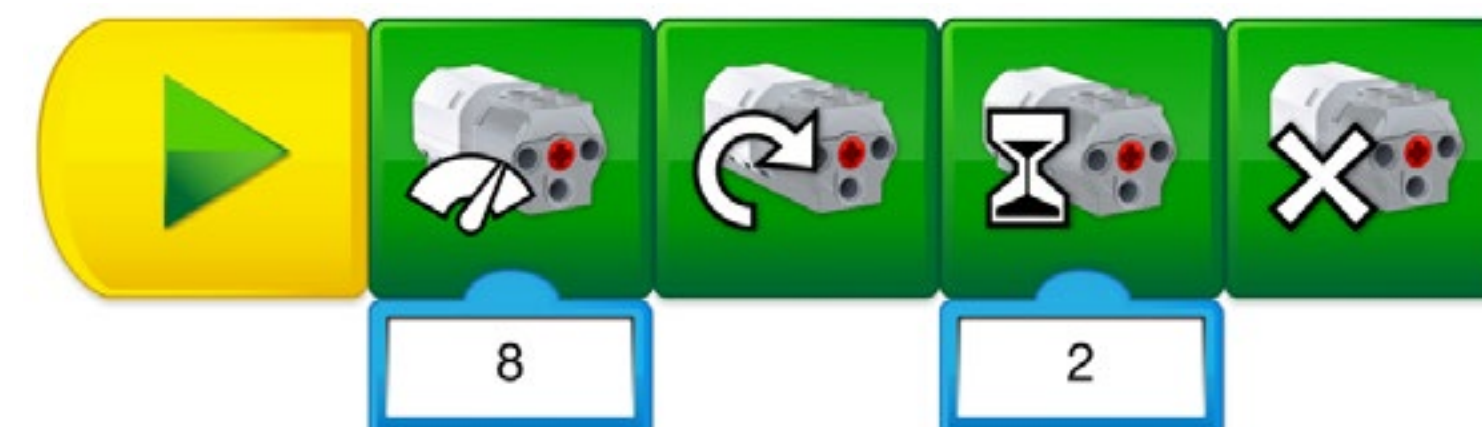
This program will start the motor at power 8, go in one direction for 2 sec., and then stop.

The motor can be started in both directions, stopped and turned at different speeds, and activated for a specific amount of time (specified in seconds).

#### ▶ Suggestion

Give students time to change the parameters of this program string.  
Let them discover new features, such as adding sound.

Use this opportunity to guide students to the Design Library so they can gain inspiration about other program strings they can explore.







## Share phase

### **Present**

Before you move on to the next part of the Getting Started Project, allow the students to express themselves:

- Have a short discussion with your students about scientific and engineering instruments.
- Have your students describe how science rovers are helpful to humans.

### **Document**

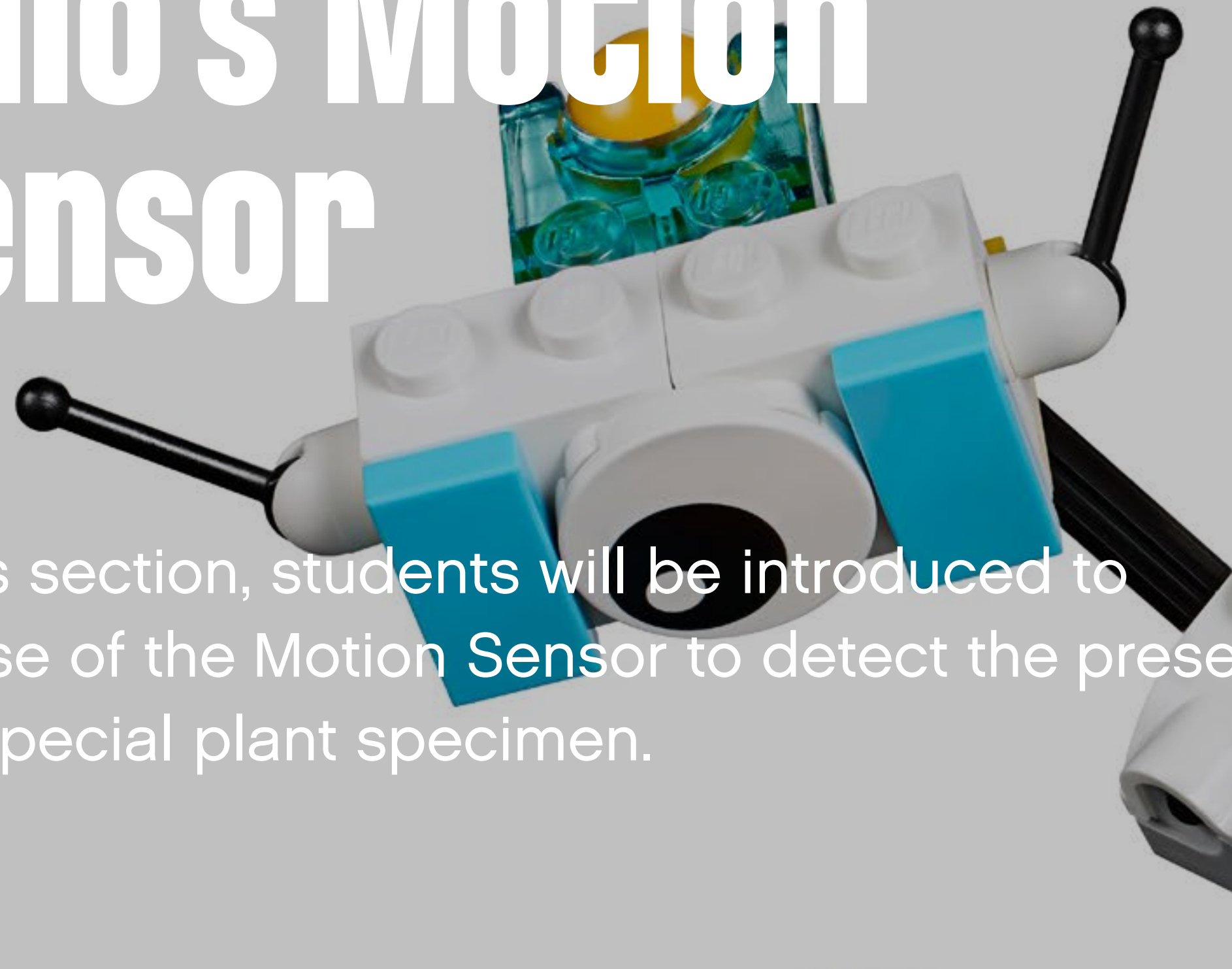
- Have students discover the use of the Documentation tool.
- Have them take a team picture with their model.



Getting Started Project, part B

# Milo's Motion Sensor

In this section, students will be introduced to the use of the Motion Sensor to detect the presence of a special plant specimen.







## Using a Motion Sensor

### Explore phase

When rovers are sent to a remote location, they need to have sensors so they can achieve a task without constant human control.

### Questions for discussion

1. How is the use of science instruments important to the task scientists have to do?

When a rover is in a remote place, it needs to have sensors in order to help it make decisions about where to go and where to stop.

### Create phase

With the provided building instructions, your students will build an arm using the Motion Sensor that will allow Milo to detect the plant sample. They will also build a plant sample on a LEGO® round plate.

The program string provided will make the rover go forward until it detects the presence of this sample object. It will stop and make a sound.

Use this opportunity to have students record their own sound for the discovery.

### Share phase

In this part of the Getting Started Project, ask your students to record a video of their mission. They will practice manipulating the camera and recording themselves, which will be useful in future projects.

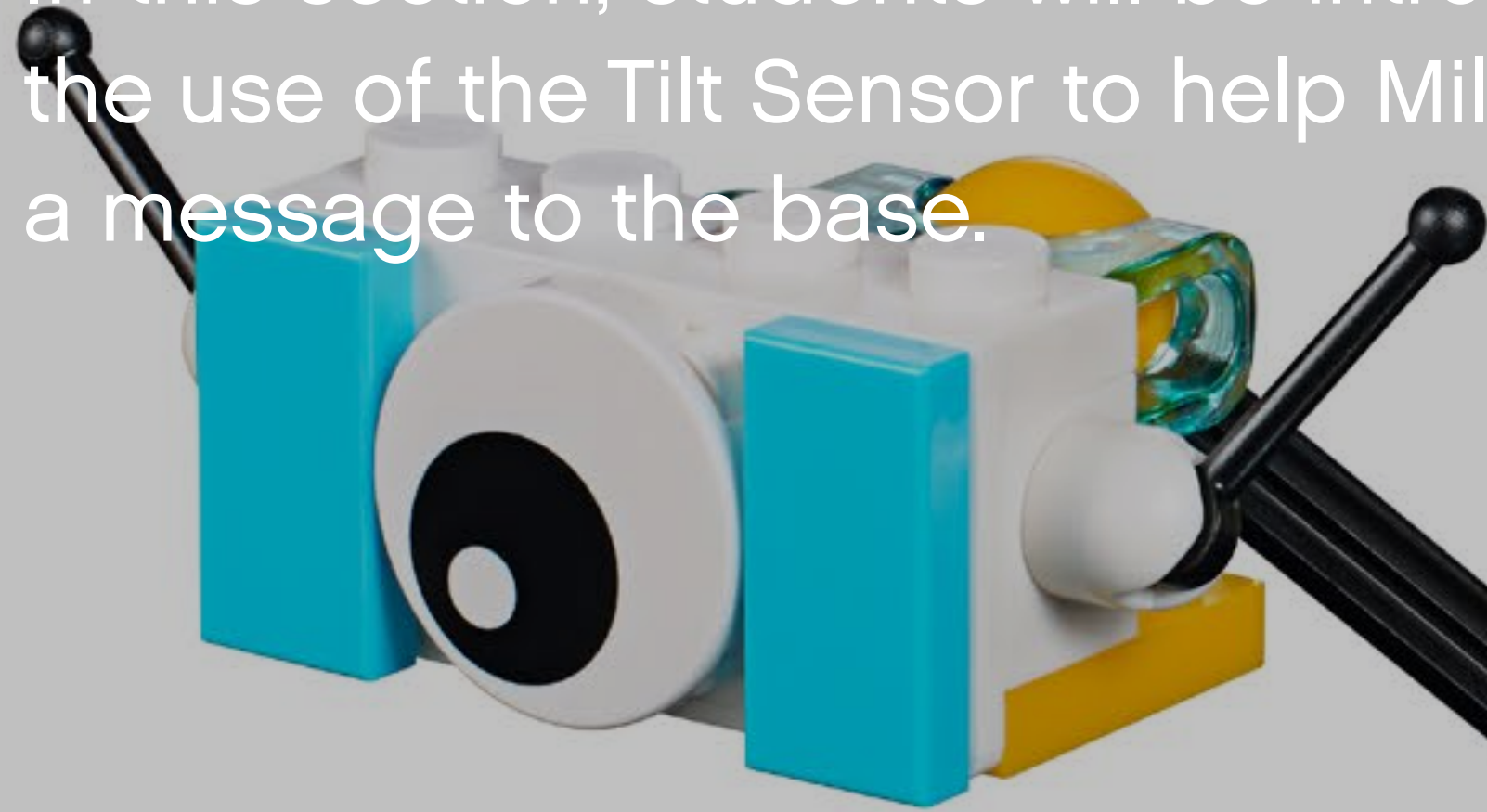




Getting Started Project, part C

# Milo's Tilt Sensor

In this section, students will be introduced to the use of the Tilt Sensor to help Milo send a message to the base.







## Introduce the use of a Tilt Sensor

### Explore phase

When rovers locate what they are looking for, they send a message back to the base.

### Questions for discussion

1. Why is communication between a rover and the base important?  
If a rover is successful in its mission but fails to send back the results, the whole mission will be worth nothing. Communication remains to link between the remote mission and the base.
2. What are some ways you might communicate with rovers?  
Currently satellites are used to send radio signals between the base and the rover.

### Create phase

With the provided building instructions, your students will build a device using the Tilt Sensor that can send a message back to the base.

The program string will trigger two actions depending on the angle detected by the Tilt Sensor:

- If tilted down, the red LED will light up.
- If tilted up, a text message will appear on the device.

### Share phase

In this section of the Getting Started Project, ask your students to take a screen capture of their final program. Have them practice documenting the program strings they used in their project.

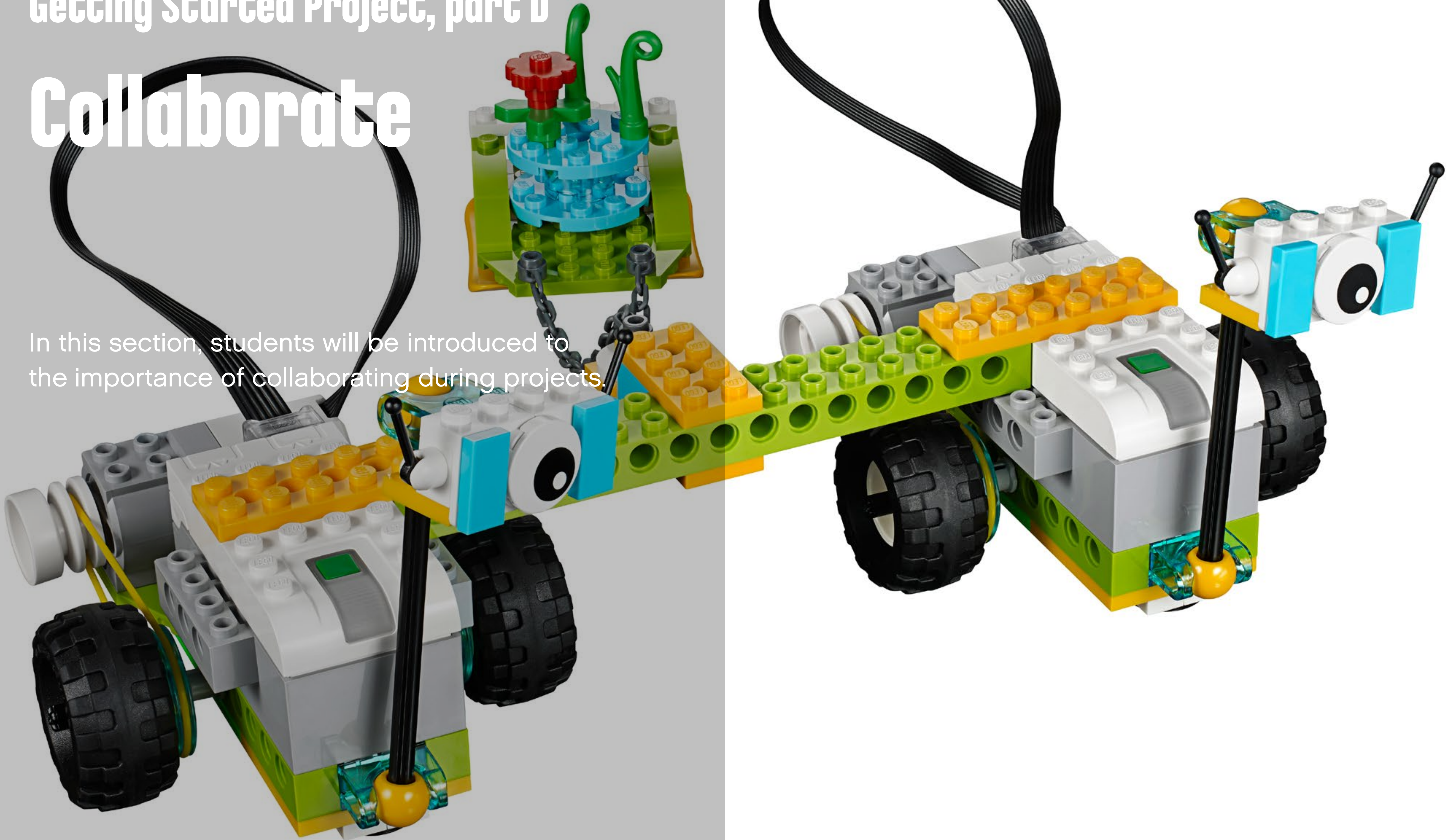




Getting Started Project, part D

# Collaborate

In this section, students will be introduced to the importance of collaborating during projects.







# Collaborate with other rovers

## Explore phase

Now that your rover has found the plant sample, it is time to carry it back. But wait. It might be too heavy! Let's see if you can collaborate with another rover to move the sample forward together.

## Create phase

Pair up the teams to complete this final part of the mission:

1. Have them build the transportation device, physically connecting the two rovers together.
2. Let students create their own program strings so they can move the specimen from point A to B. It doesn't matter where point A or B is.  
Students could use the following program strings.
3. When everyone is ready, have the team move their plant sample carefully.

## ▶ Suggestion

For teams working on their own, note that you can connect up to three Smarthubs to the same tablet. See the "Toolbox" chapter for instructions on how to do that.

## Share phase

Have students talk about their experiences:

- Why is it important to collaborate to solve a problem?
- Give an example of good communication among teams.

Finally, have students complete their document with the Documentation tool while collecting and organizing important information.

## ▶ Important

Because not all the WeDo motors are the same, teams will have to collaborate in order to succeed.





# Build with WeDo 2.0

WeDo 2.0 has been designed to provide opportunities for students to sketch, build, and test prototypes and representations of objects, animals, and vehicles that have a real-world focus.

The hands-on approach encourages students to be fully engaged in the designing and building process.







## Electronic parts

### Smarthub

The Smarthub acts as a wireless connector among your device and the other electronic parts, using Bluetooth Low Energy. It receives program strings from the device and executes them.

#### The Smarthub has important features:

- Two ports to connect sensors or motors
- One light
- Power button

The Smarthub uses AA batteries or the supplementary Rechargeable Battery as a power source.

The Bluetooth connection procedure between the Smarthub and your device is explained in the WeDo 2.0 Software.

#### The Smarthub will use color patterns to signal messages:

- Flashing white light: It is waiting for a Bluetooth connection.
- Blue light: A Bluetooth connection is established.
- Flashing orange light: The power provided to the motor is at its limit.







## Electronic parts

### Smarthub Rechargeable Battery (supplementary item)

Here are some guidelines for the Smarthub Rechargeable Battery:

- To have optimal hours of play without the adaptor connected, fully charge the battery first.
- There is no special demand for a charging pattern.
- Preferably, store the battery in a cool place.
- If the battery is installed in the Smarthub and not used from one to two months, recharge it again after this period.
- Do not let the battery charge for an extended period of time.



### Medium Motor

A motor is what makes other things move. This Medium Motor uses electricity to make an axle rotate.

The motor can be started in both directions, can be stopped, and can turn at different speeds and for a specific amount of time (specified in seconds).







## Electronic parts: sensors

### Tilt Sensor

To interact with this sensor, tilt the part in different ways following the arrows.

This sensor detects changes within six different positions:

- Tilt this way
- Tilt that way
- Tilt up
- Tilt down
- No tilt
- Any tilt

Make sure you have the correct icon in your program that corresponds to the position you are trying to detect.



### Motion Sensor

This sensor detects changes in distance from an object within its range in three different ways:

- Object moving closer
- Object moving farther away
- Object changing position

Make sure you have the correct icon in your program that corresponds to the position you are trying to detect.







# Part names and primary functions

As students use the bricks, you may want to discuss proper vocabulary as well as functions for each part in the set.

- Some of them are structural parts that hold your model together.
- Some parts are connectors that link elements to each other.
- Some parts are used to produce movement.

## ▶ Important

Remember that these categories are guidelines. Some parts have many functions and can be used in many ways.

## ▶ Suggestion

Use the cardboard box to help you sort the parts in the WeDo 2.0 storage box. This will help you and your students view and count the parts.

©2016 The LEGO Group. 6145262

45300

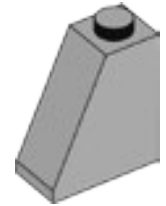




# Structural parts



2x - Angular plate, 1x2/2x2, white. No.6117940



4x - Roof brick, 1x2x2, gray. No.4515374



2x - Tile, 1x2, azure blue. No.4649741



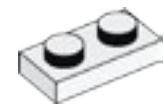
4x - Roof brick, 1x2/45°, lime green. No.4537925



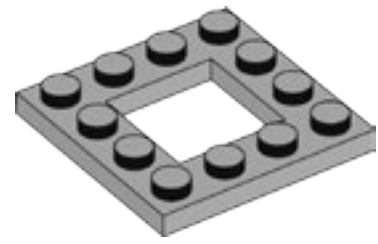
2x - Curved brick, 1x3, lime green. No.4537928



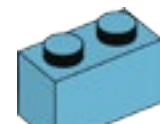
4x - Roof brick, 1x2x2/3, bright orange. No.6024286



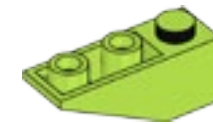
6x - Plate, 1x2, white. No.302301



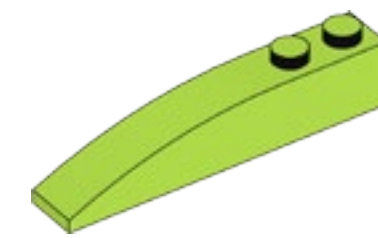
2x - Frame plate, 4x4, gray. No.4612621



6x - Brick, 1x2, azure blue. No.6092674



4x - Inverted roof brick, 1x3/25°, lime green. No.6138622



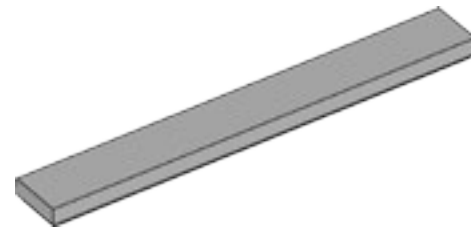
4x - Curved brick, 1x6, lime green. No.6139693



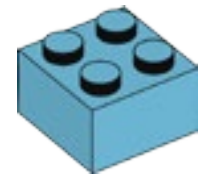
4x - Inverted roof brick, 1x2/45°, bright orange. No.6136455



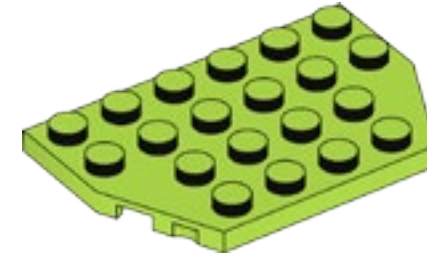
4x - Plate, 1x4, white. No.371001



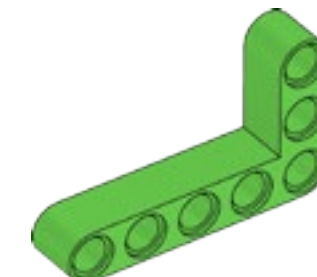
4x - Tile, 1x8, gray. No.4211481



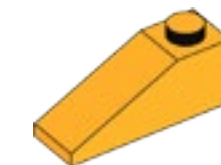
2x - Brick, 2x2, azure blue. No.4653970



2x - Plate, 4x6/4, lime green. No.6116514



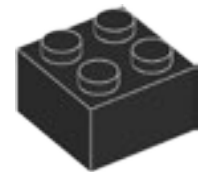
2x - Angular beam, 3x5-modules, bright green. No.6097397



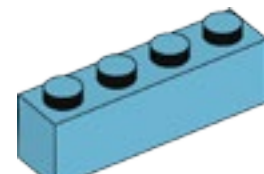
4x - Roof brick, 1x3/25°, bright orange. No.6131583



4x - Plate, 1x6, white. No.366601



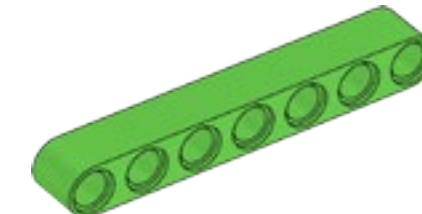
4x - Brick, 2x2, black. No.300326



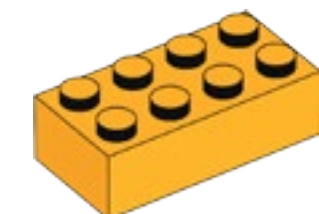
2x - Brick, 1x4, azure blue. No.6036238



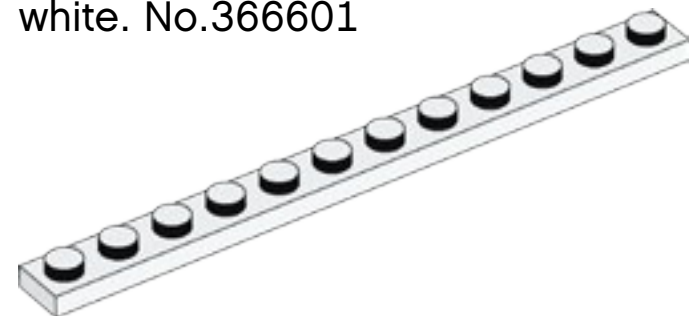
4x - Studded beam, 1x2, lime green. No.6132372



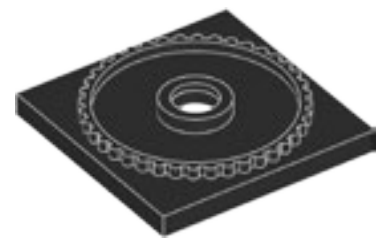
2x - Beam, 7-modules, bright green. No.6097392



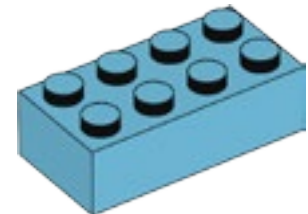
4x - Brick, 2x4, bright orange. No.6100027



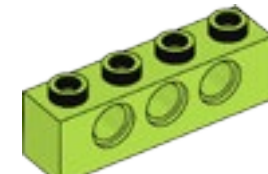
2x - Plate, 1x12, white. No.4514842



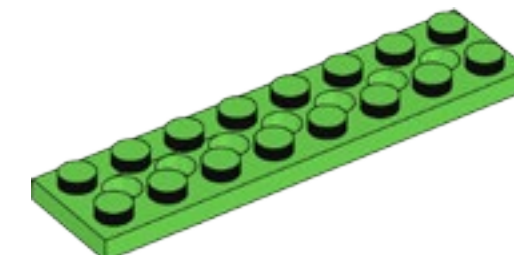
1x - Bottom for turntable, 4x4, black. No.4517986



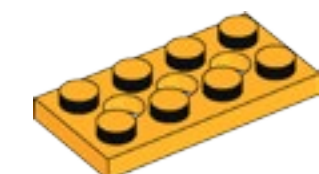
2x - Brick, 2x4, azure blue. No.4625629



4x - Studded beam, 1x4, lime green. No.6132373



2x - Plate with holes, 2x8, bright green. No.6138494



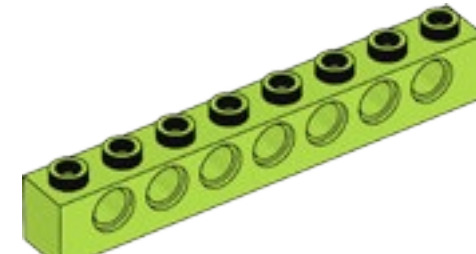
4x - Plate with holes, 2x4, bright orange. No.6132408



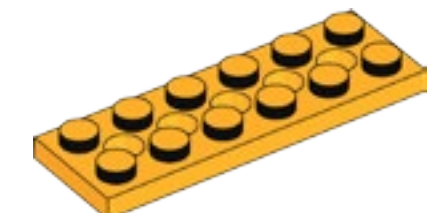
4x - Beam with plate, 2-modules, black. No.4144024



2x - Curved plate, 1x4x2/3, azure blue. No.6097093



2x - Studded beam, 1x8, lime green. No.6132375



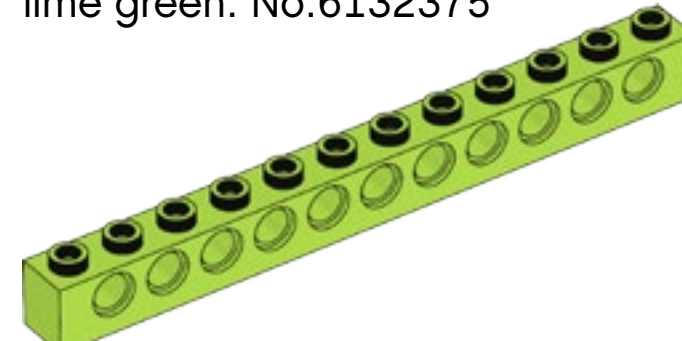
4x - Plate with holes, 2x6, bright orange. No.6132409



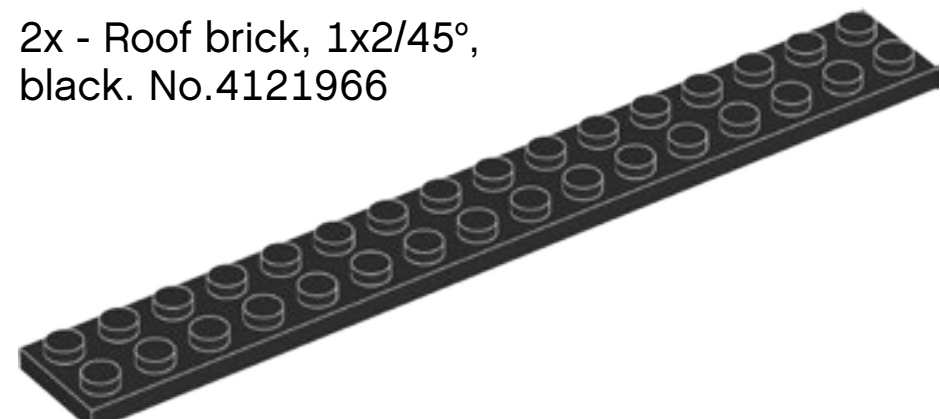
2x - Roof brick, 1x2/45°, black. No.4121966



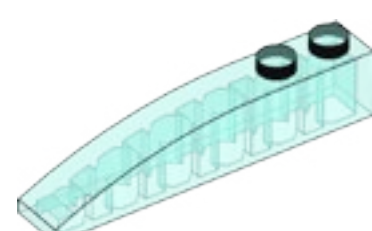
2x - Round plate, 4x4, azure blue. No.6102828



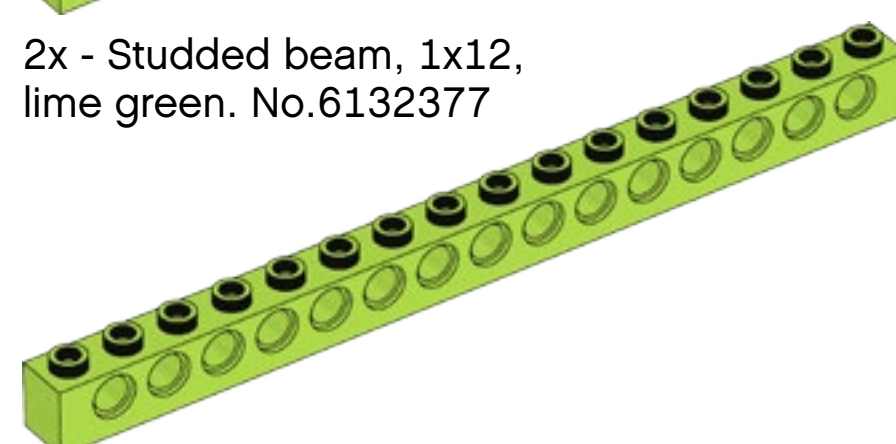
2x - Studded beam, 1x12, lime green. No.6132377



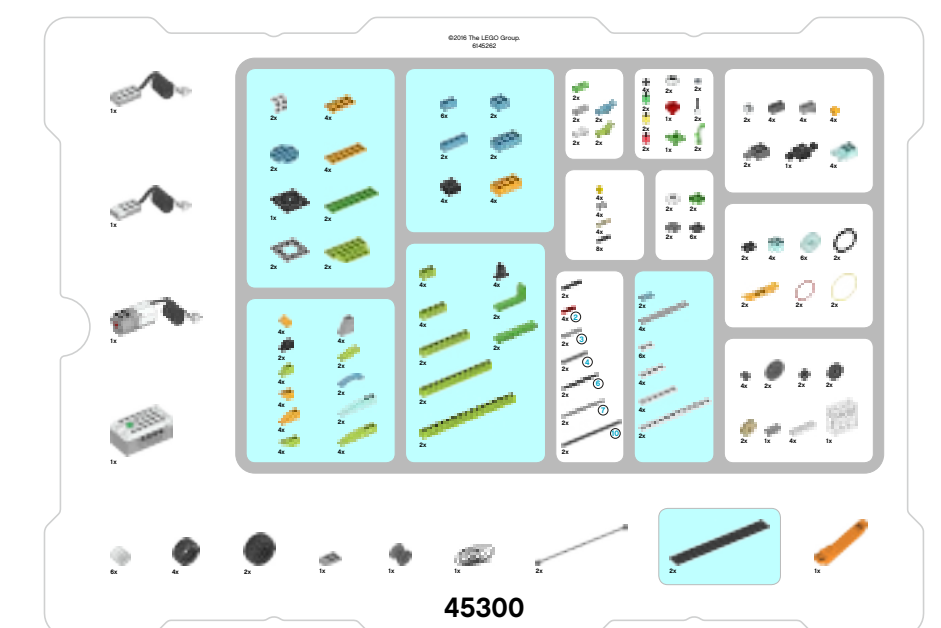
2x - Plate, 2x16, black. No.428226



2x - Curved brick, 1x6, transparent light blue. No.6032418



2x - Studded beam, 1x16, lime green. No.6132379







# Connecting parts



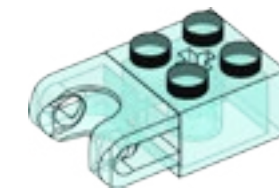
2x - Brick with stud on side, 1x1, white. No.4558952



4x - Bushing, 1-module, gray. No.4211622



8x - Connector peg, with friction, 2-modules, black. No.4121715



4x - Brick with ball bearing, 2x2, transparent light blue. No.6045980



2x - Angular block 4, 135°, lime green. No.6097773



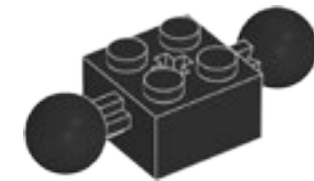
4x - Connector peg, without friction/axle, 1-module/1-module, beige. No.4666579



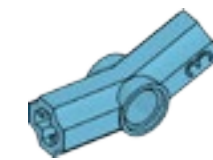
2x - Angular block 1, 0°, white. No.4118981



2x - Bushing/axle extender, 2-module, gray. No.4512360



1x - Brick with 2 ball joints, 2x2, black. No.6092732



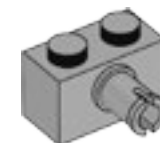
2x - Angular block 3, 157,5°, azure blue. No.6133917



2x - Tube, 2-modules, bright green. No.6097400



4x - Ball with crosshole, bright orange. No.6071608



4x - Brick with connector peg, 1x2, gray. No.4211364



1x - String, 50 cm, black. No.6123991



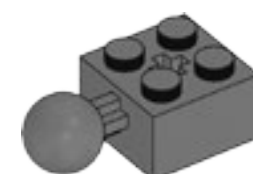
4x - Bushing/pulley, 1/2-module, yellow. No.4239601



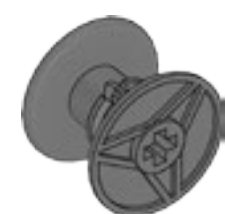
1x - Plate with hole, 2x3, gray. No.4211419



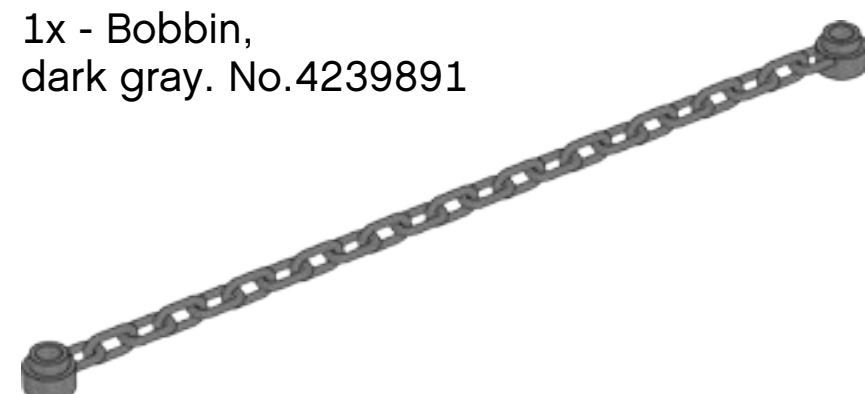
4x - Studded beam with crosshole, 1x2, dark gray. No.4210935



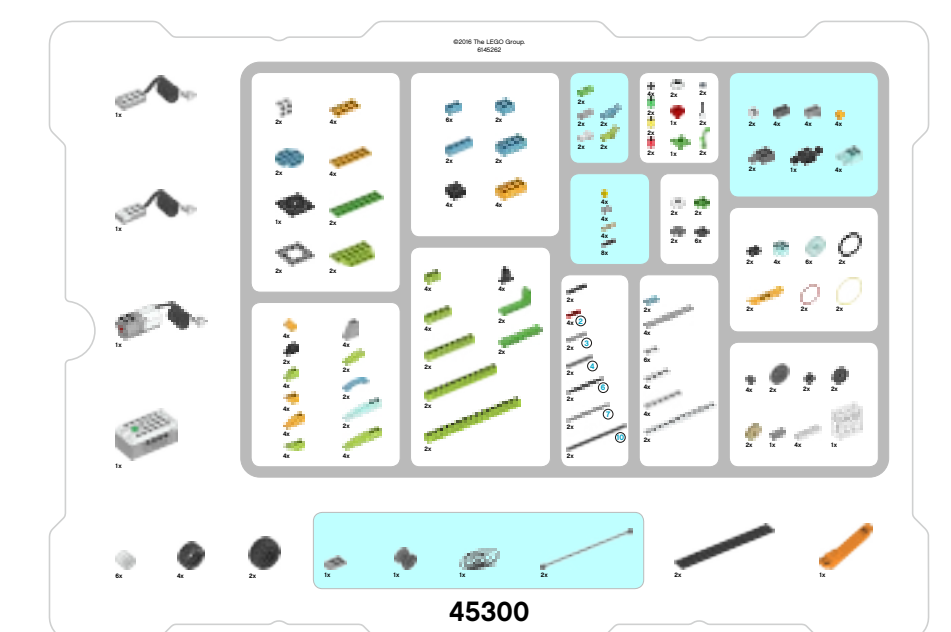
2x - Brick with 1 ball joint, 2x2, dark gray. No.4497253



1x - Bobbin, dark gray. No.4239891



2x - Chain, 16-modules, dark gray. No.4516456



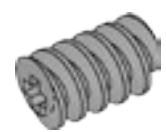




# Movement parts



6x - Hub/pulley, 18x14 mm, white. No.6092256



1x - Worm gear, gray. No.4211510



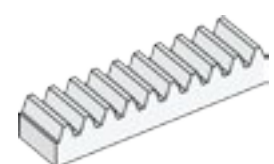
2x - Rubber beam with crossholes, 2-modules, black. No.4198367



4x - Axle, 2-modules, red. No.4142865



2x - Bevel gear, 20-tooth, beige. No.6031962



4x - Gear rack, 10-tooth, white. No.4250465



4x - Gear, 8-tooth, dark gray. No.6012451



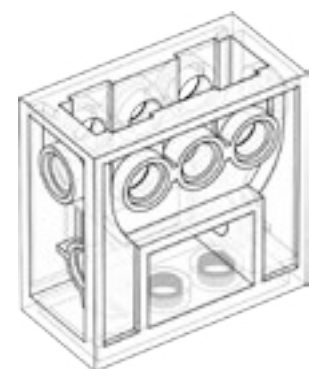
2x - Double bevel gear, 12-tooth, black. No.4177431



2x - Connector peg with axle, 3-modules, black. No.6089119



2x - Belt, 33 mm, yellow. No.4544151



1x - Gear block, transparent. No.4142824



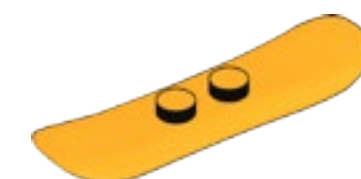
2x - Gear, 24-tooth, dark gray. No.6133119



2x - Double bevel gear, 20-tooth, black. No.6093977



2x - Axle, 3-modules, gray. No.4211815



2x - Snowboard, bright orange. No.6105957



2x - Tire, 30.4x4 mm, black. No.6028041



2x - Axle with stop, 4-modules, dark gray. No.6083620



2x - Belt, 24 mm, red. No.4544143



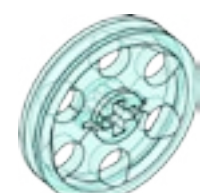
4x - Round brick, 2x2, transparent light blue. No.4178398



4x - Tire, 30.4x14 mm, black. No.4619323



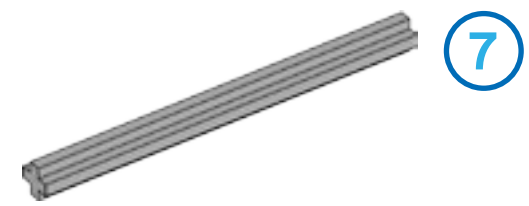
2x - Axle, 6-modules, black. No.370626



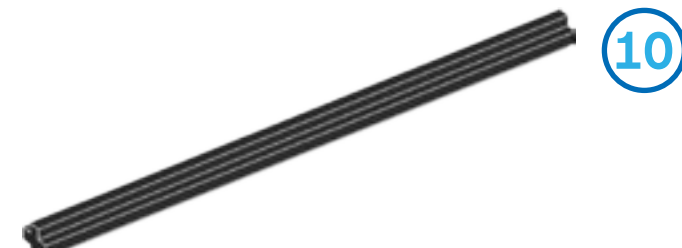
6x - Hub/pulley, 24x4 mm, transparent light blue. No.6096296



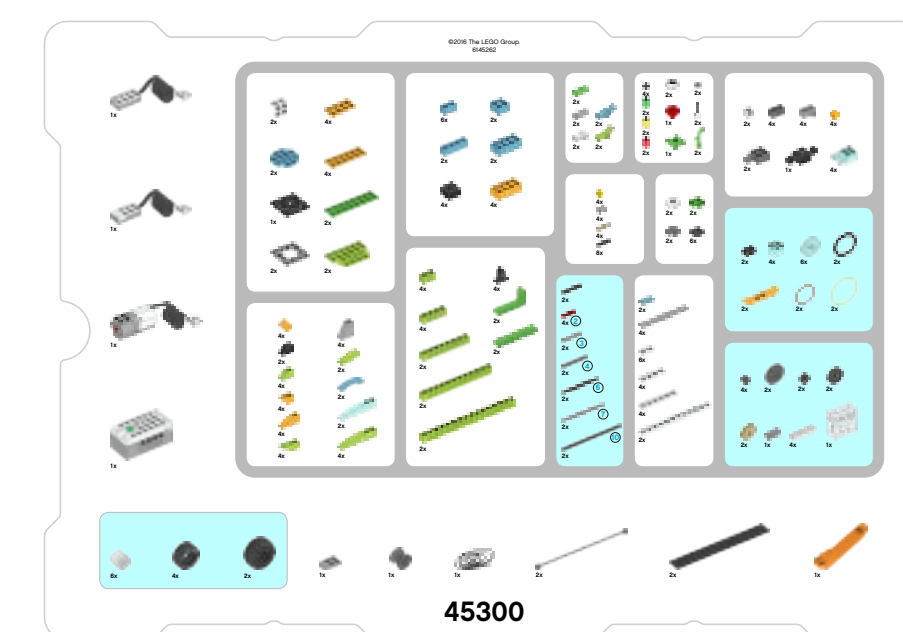
2x - Tire, 37x18 mm, black. No.4506553



2x - Axle, 7-modules, gray. No.4211805



2x - Axle, 10-modules, black. No.373726







# Decorative parts



2x - Antenna, white. No.73737



2x - Round brick, 1x1, transparent green. No.3006848



2x - Round brick, 1x1, transparent yellow. No.3006844



2x - Round tile with eye, 1x1, white. No.6029156



2x - Grass, 1x1, bright green. No.6050929



2x - Round brick, 1x1, transparent red. No.3006841



2x - Round tile with eye, 2x2, white. No.6060734



2x - Round plate, 2x2, bright green. No.6138624



1x - Flower, 2x2, red. No.6000020



2x - Round plate with 1 stud, 2x2, white. No.6093053



1x - Leaves, 2x2, bright green. No.4143562



2x - Round tile with hole, 2x2, dark gray. No.6055313

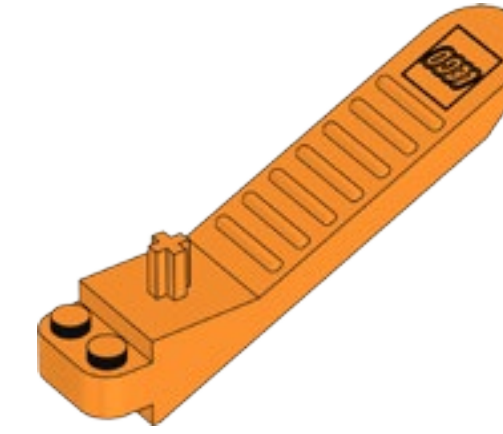


4x - Round plate, 1x1, black. No.614126

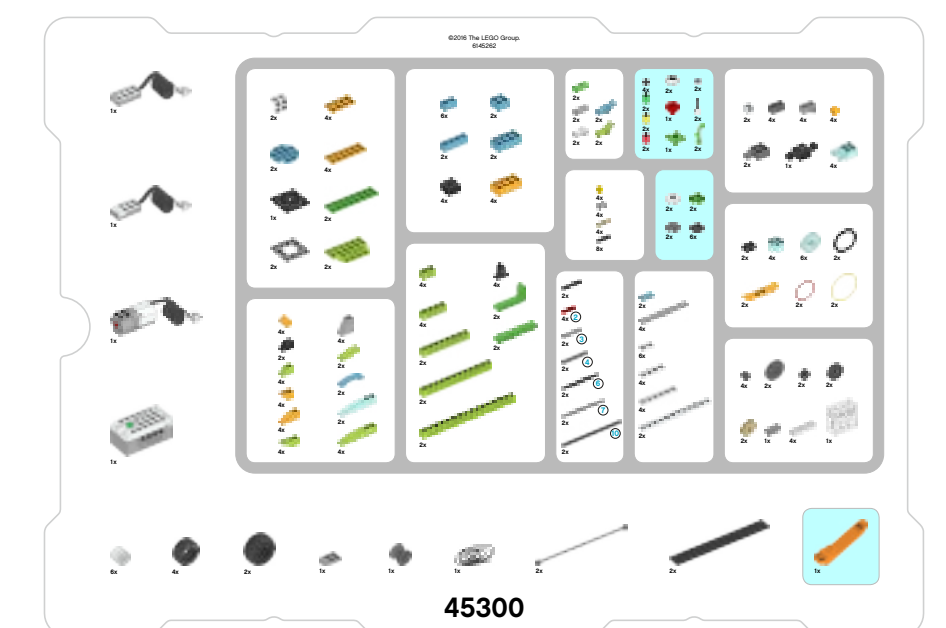


6x - Skid plate, 2x2, black. No.4278359

# Brick separator



1x - Element separator, orange. No.4654448



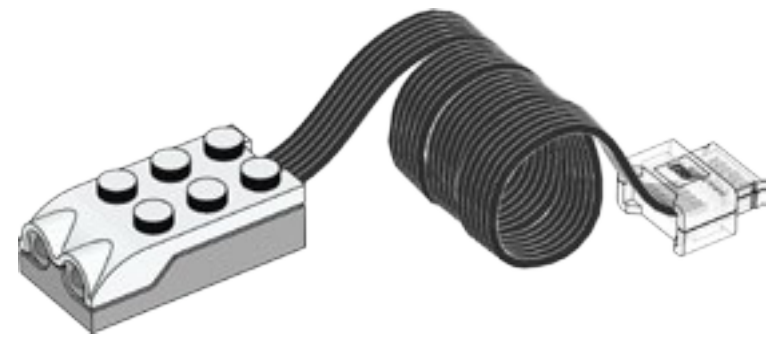




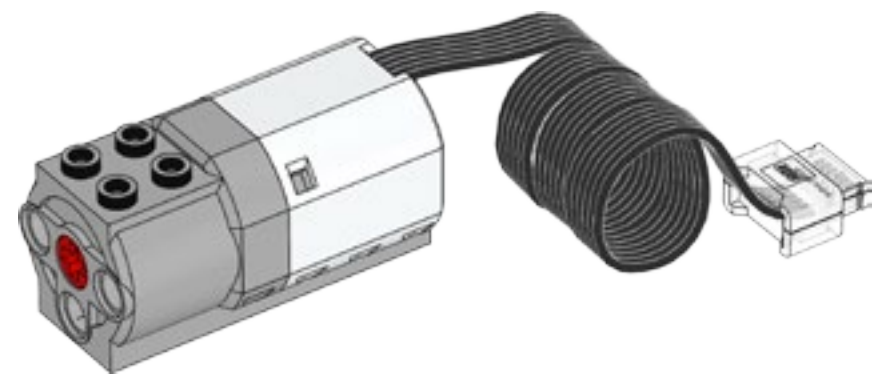
# Electronic parts



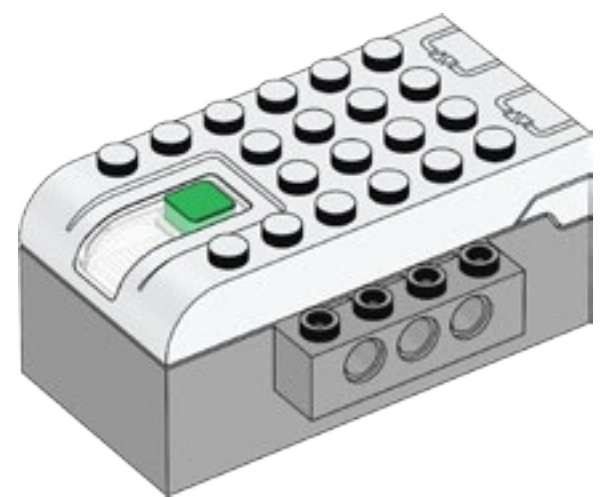
1x - Tilt Sensor,  
white. No.6109223



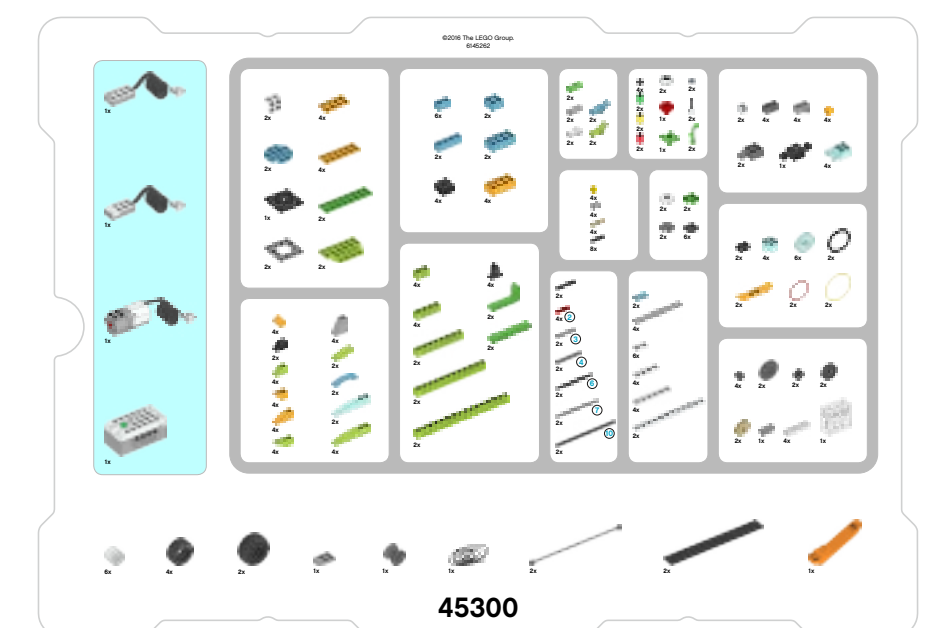
1x - Motion Sensor,  
white. No.6109228



1x - Medium Motor,  
white. No.6127110

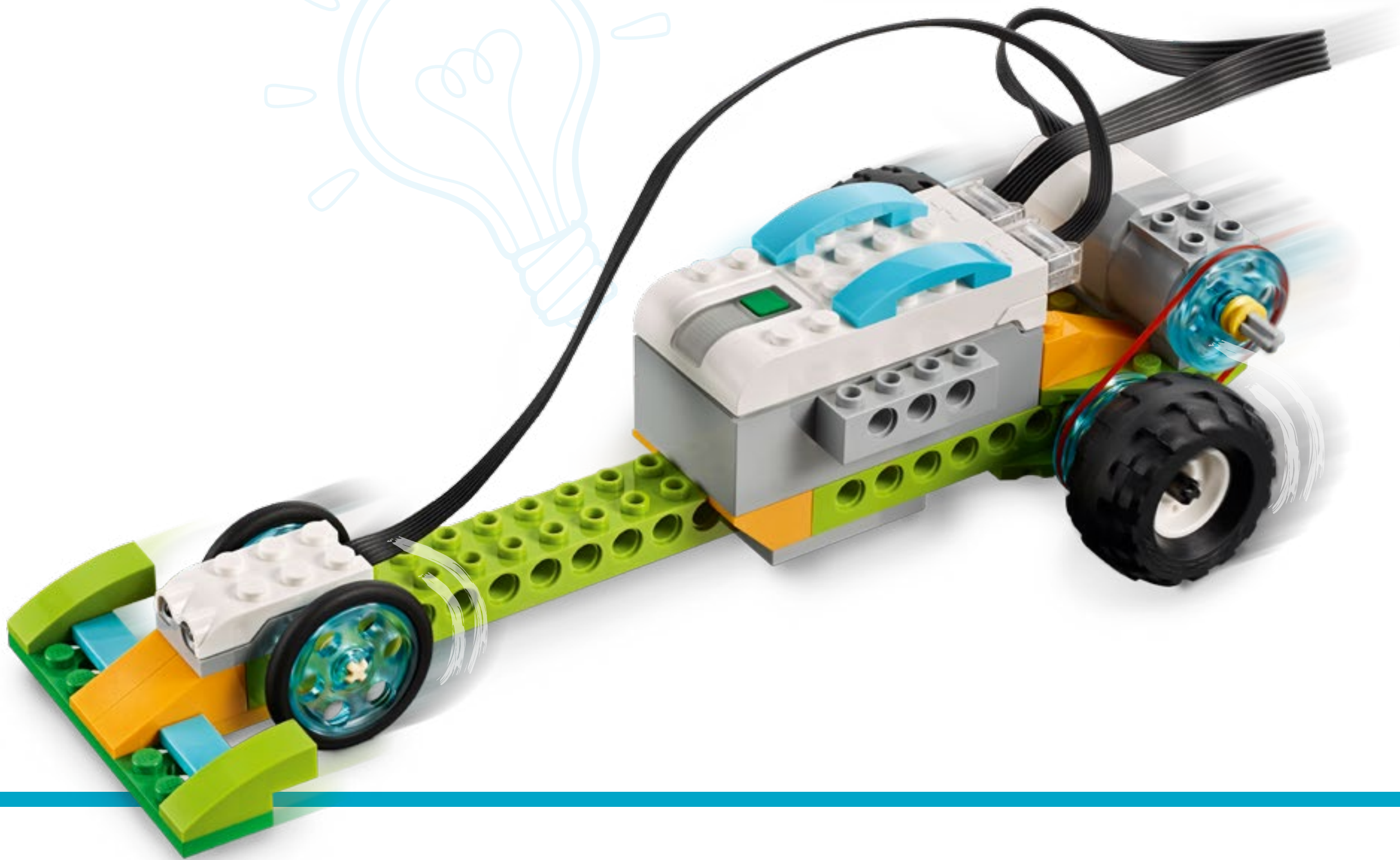
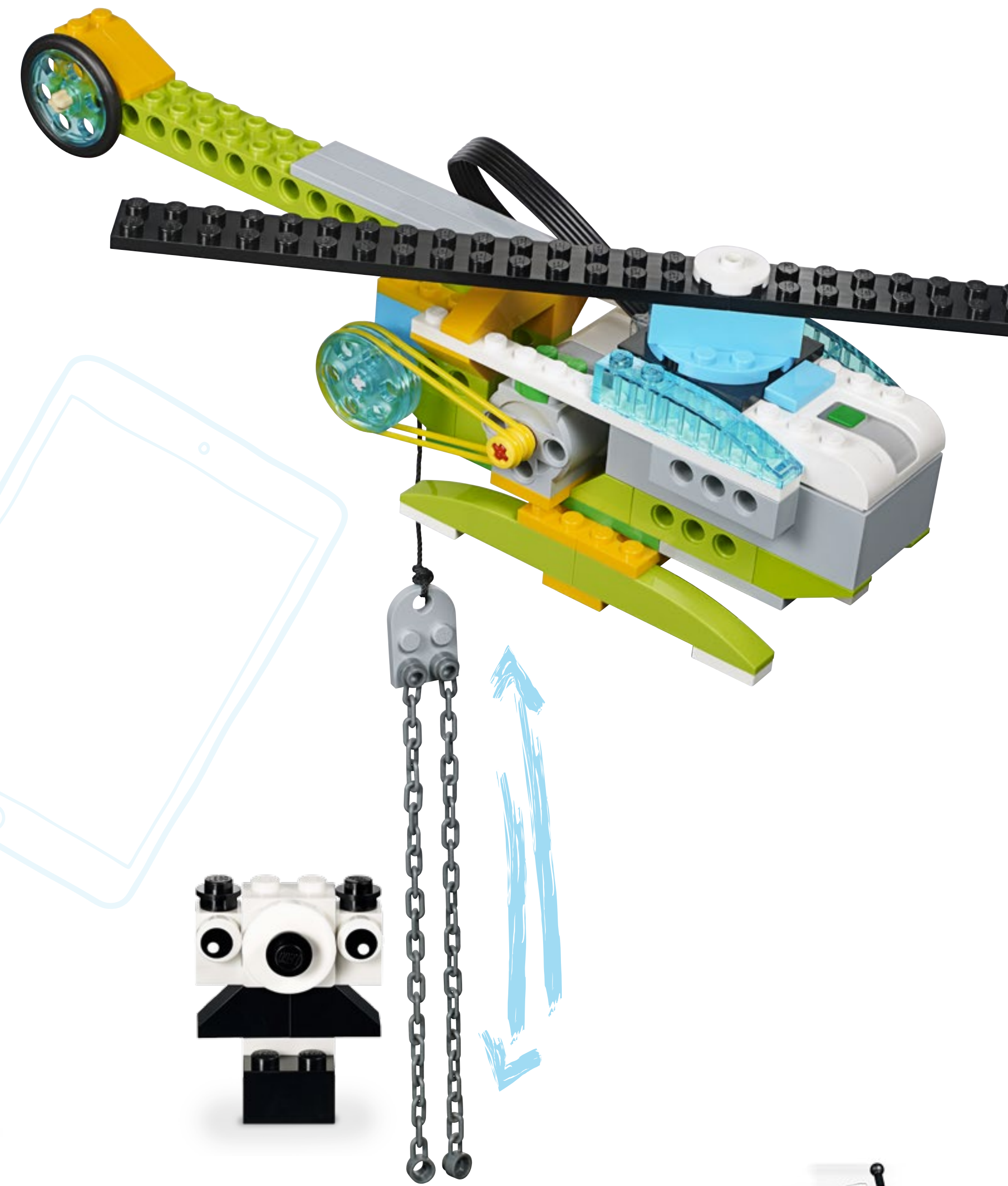


1x - Smarthub,  
white. No.6096146





# LEGO® Education WeDo 2.0



LEGOeducation.com

LEGO and the LEGO logo are trademarks of the/sont des marques de commerce du/son marcas registradas de LEGO Group.  
©2016 The LEGO Group. 125136

