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# Welcome to the Robo Wunderkind Introductory Projects Worksheets!

These supporting materials correspond with the **Introductory Projects Plans** and are designed to make your teaching with Robo Wunderkind Curriculum smoother, more structured, and for you to feel supported.

The **Introductory Worksheets** will help your students **personalize** their learning experiences with the Robo Wunderkind robotics set, **link their new knowledge to real-life experiences**, and **track their progress**. All worksheets can be completed accordingly to the grade and skills of your students: the younger students can draw and color the modules while the older ones can supply written answers. The Worksheets Answer Key is designed to show the possible answers but not only the right ones; you can **always adjust the complexity level of the tasks to the needs of your student(s)**.

## Tricks and Tips:

- **Read aloud** the Robo's Story and all the tasks if your students are not capable of reading independently; discuss together.
- **Give students the freedom and opportunity** to try to solve challenges by themselves and learn by doing.
- Some of the **tasks have more than one right answer** which allows students to be creative.
- **Share and discuss** your ideas, answers, and reasons for the tasks together with your students.
- **Use the smile section to reflect** on students' moods, involvement, and motivation.

## Icons used on the worksheets:

-  - individual work
-  - Pair Work
-  - Class Discussion
-  - work in the Robo Live App

# Project 1: Meet Robo!

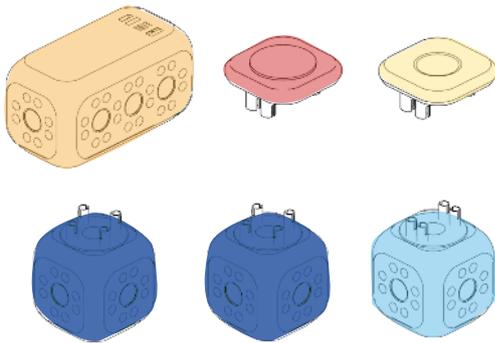
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## Project 1: Meet Robo!

 Today, we have a special guest in our class! This is Robo, a smart robot that wants to be our friend and help us with different tasks. Do you think Robo can learn together with us?

 To get to know Robo, we will become engineers and assemble our first robot!

### 1 Robo's Modules: Color, size, shape.



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## Lead In

← **Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

← **1. Class discussion: Robo's Modules.**

- **Find, compare and sort** Robo's modules by color, size, shape, and common features.
- **Color** the modules you discussed.

## 2. Class discussion: Robo's Modules – Connectors and Wheels.

- ←
- **Find** all the green parts of Robo; show and describe them. How they are similar or different?
  - **Sort** them into 3 groups: Wheels, Connectors, Connector Block.
  - **Color** the parts discussed.

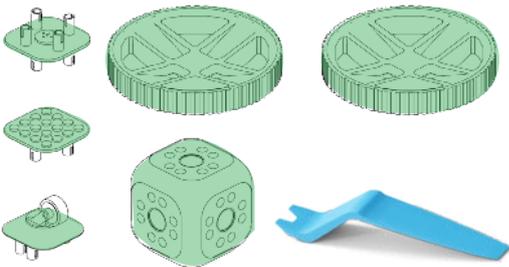
## 3. Pair work: My First Robo.

- ←
- Work in pairs to **assemble your own Robo** using all the Modules and Connectors discussed. Customize the Robo with the Lego™ bricks, colored paper, and other materials.
- **Draw** your Robo-Project on the worksheet.

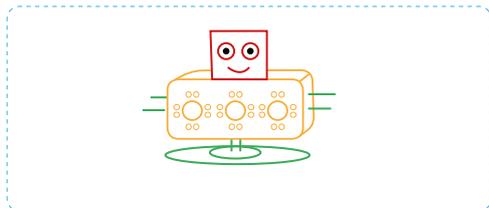
## Reflection:

- ← **How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.

### 2 Robo's Modules: Connectors and Wheels



### 3 My First Robo



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# Project 2: Robo is a Synthesizer

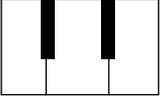
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## Project 2: Robo Is a Synthesizer!

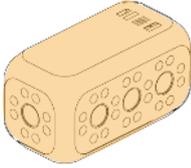
 Robo loves music, so it would like to play some music with you!

 Transform Robo into a synthesizer to play music on it!

### 1 Music



### 2 Robo's Brain





## Lead In

← **Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

### 1. Class discussion: Music.

**Ask:** Do you like music? Can you play music? What is a musical instrument? What musical instruments do you know? What are the instruments pictured here?

- Optional: **Draw** your favorite musical instrument.

### 2. Class discussion: Robo's Brain-Main Block.

← **Recall** that the Main Block is **Robo's brain** and why it has to be in each project. **Color** only Robo's Brain - Main Block.

### 3. Pair work: My Robo-Synthesizer.

← **Assemble** your own Robo-Synthesizer using the Main Block, some green modules, and Lego™ bricks or other materials to customize it.

- **Discover** the Robo Live App and its interface.
- Work in pairs to **control** the Robo-Synthesizer using the **Sound Controls**.
- **Color** the Sound Controls you used.
- **Discuss and color** the Play Button.

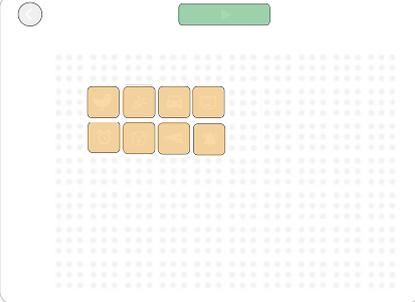
### 4. Individual Work: My Favorite Sounds.

← **Draw** your favorite sounds from the Robo Live App.

## Reflection:

← **How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.

### 3 My Robo-Synthesizer



### 4 My Favourite Sounds







# Project 3: Robo is a Synthesizer

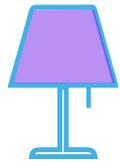
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## Project 3: Robo Is a Colorful Night Light!

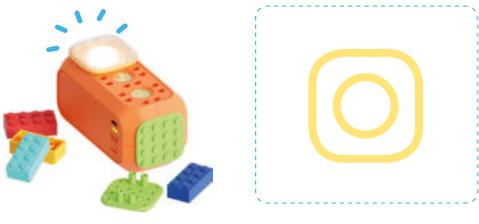
 Some robots sleep during the night, so they have a bedtime just before going to sleep, as you do! How can we make our dreams nice and colorful? Do you have a colorful night light? Can we build one using Robo?

 Build a Robo-Colorful night light to make a bedtime routine cozy.

**1**  **Bedtime** 

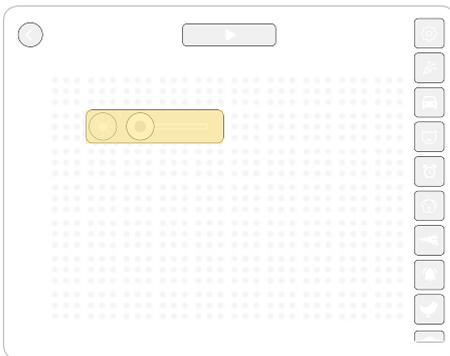


**2**  **Robo's Light**

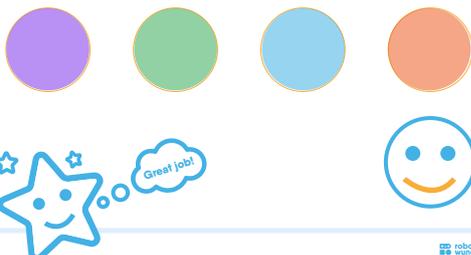


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**3**   **My Colorful Night Light**



**4**  **My Favourite Colors**



## Lead In

← **Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

← **1. Class discussion: Bedtime.**

**Ask:** What is your bedtime routine?

How can a cozy mood be created in your bedroom to make sweet, colorful dreams?

- **Paint** the Night Light your favorite color.
- **Optional:** Draw other things that help you create a cozy mood in your bedroom.

**2. Class discussion: Robo's Module - Light.**

**Ask:** What new module is needed for the Robo Night Light using the given picture.

- **Draw** Robo's Night Light module.
- **Assemble** the Robo Night Light using the picture as an instruction.

**3. Pair Work: My Colorful Night Light.**

- ←
- **Discover** the Light Control in the **Robo Live App**.
  - Work in pairs to control the Light module using the **Light Control**.
  - **Color** the Light Control

**4. Individual Work: My Favorite Colors.**

- ←
- **Paint** the circles in your favorite colors from the Robo Live App.

## Reflection:

← **How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.

# Project 4: Robo Is a Fan!

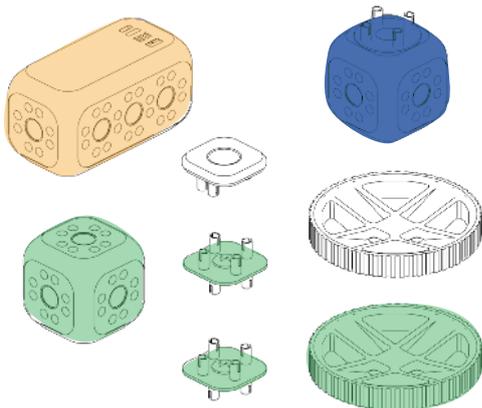
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## Project 4: Robo Is a Fan!

 Oh, it's so hot here in our classroom. How can we cool down the air a bit? As you know our friend Robo can transform into different robots, which Robo can help us?

 Build a Robo-fan to cool down the air.

### 1 Robo - Fan: Modules





## Lead In

← **Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

← **1. Class Discussion: Robo-Fan's Modules. Discuss and color** the modules you might need for assembling the Robo-Fan.

- **Start** with the Main Block - the module students have already learned and need in every project.
- Try to **guess** the other modules but do not persist if students have limited ideas. If stuck, go to task #2 and then **return to task #1** after discussing how to build the Robo-Fan.

## 2. Class Discussion: Build a Robo-Fan.

← **Discuss** the Rob-Fan's build: what new modules you use and why.

- **Assemble** the Robo-Fan using the picture as a model.
- **Discuss** that the Motor rotates the Robo-Fan; **color** the Motor.
- **Return** to task #1 if needed.

## 3. Individual or Pair Work: My Robo-Fan.

← **Discover** the **Motor 1** Control in the **Robo Live App**.

- Work in pairs to **control** the Robo-Fan using the **Motor 1 Control**.
- **Color** the Motor 1 Control you used.
- **Draw** the movement your Robo-Fan did; use the first gap as an **example**.

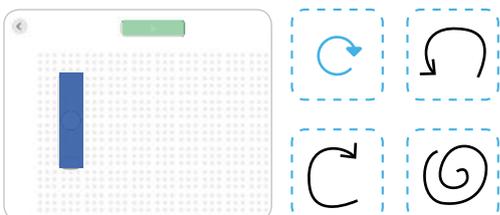
← **Reflection:**

**How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.

### 2 Build a Robo-Fan



### 3 My Robo-Fan





# Project 5: Robo is a Car!

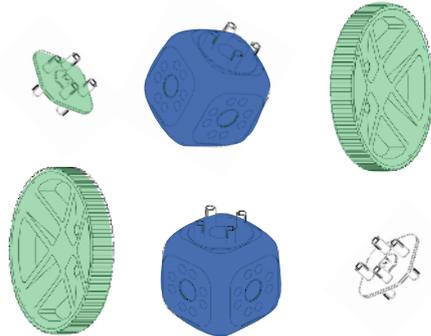
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## Project 5: Robo Is a Car!

 Robo is a very curious creature who likes to discover the world around! Robo wants to travel, but first Robo needs to how to drive! Can we build a Robo-Car?

 Build a Robo-car to drive around.

### 1 Robo-Car: Motors

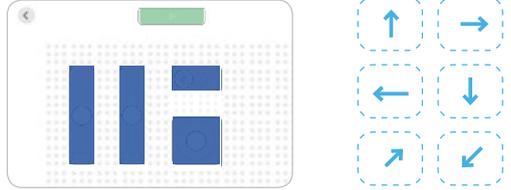




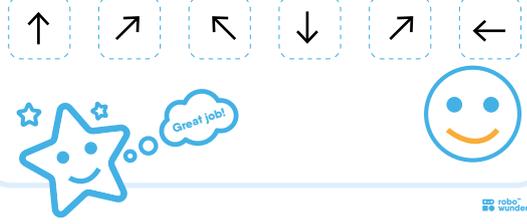
### 2 Build a Robo-Car



### 3 / Robo-Car is Driving



### 4 My Robo-Car is Driving



 Great job!





## Lead In

**Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

### 1. Class Discussion: Robo-Car's Motors.

**Ask:** How do cars move? Which modules will we need to build a Robo-Car? **Conclude:** for building a **Robo-Car** we need **two Motors** and two **Big Wheels**.

- **Find** the parts in the box and play around trying to **assemble** them in different ways.
- **Conclude:** there is **only one right way** to attach Wheels to the Motors so they turn around.
- **Draw** the arrows to visualize how to attach Motors and **color** the modules.

### 2. Class Discussion: Build a Robo-Car.

**Discuss** how to build the Robo-Car: what new modules do you use and why.

- Assemble the Robo-Car using the picture as a model.

### 3. Individual or Pair Work: Robo-Car is driving.

- **Discover** the **Motor 1 and Motor 2 Controls: control Robo-Car** using only these two Controls; color them.
- **Discover Joystick: control Robo-Car** using only this control; color it.
- **Discover the Tilt Control:** drive around using only the Tilt Control; color it.
- **Drive around:** follow the arrows instruction; use different Controls and discuss how they are different.

### 4. Individual Work: My Robo-Car Is Driving.

**Draw** the movement your Robo-Car did using the same arrows as in task #3.

### Reflection:

**How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.

# Project 6: Robo Travels to the Toytown!

NAME / DATE \_\_\_\_\_

## Project 6: Robo Travels to the Toytown

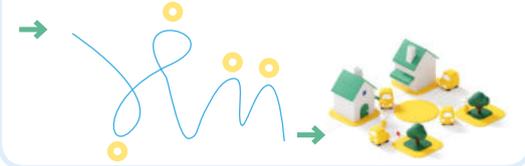
 This morning, Robo received a letter from the other toys who live in Toytown. They invited Robo to visit the town and meet new friends there! Robo is very happy to go on its first journey to Toytown, but it is a bit nervous... Can we help Robo to travel to Toytown?

 Build a Robo-vehicle which is able to visit the Toytown and make friends!

### 1 Robo-Traveller: Modules



### 2 Toytown





## Lead In

← **Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

### 1. Class Discussion: Robo-Traveler: Modules.

**Ask:** Which modules might Robo need to travel to Toytown and why. Circle these modules.

### 2. Class Discussion: The Road to Toytown.

← Create the road to Toytown together with your students: use different materials and toys.

- **Draw** a map of how to get to Toytown.

### 3. Pair Work: Robo Travels to Toytown.

**Recall one-by-one** all the Controls in the

← Robo Live App that you've already learned.

- **Add** a Control to the Controlling screen, **try it out; discuss** the function;
- **Color** the Control on the worksheet, and **connect** to the module which it controls.

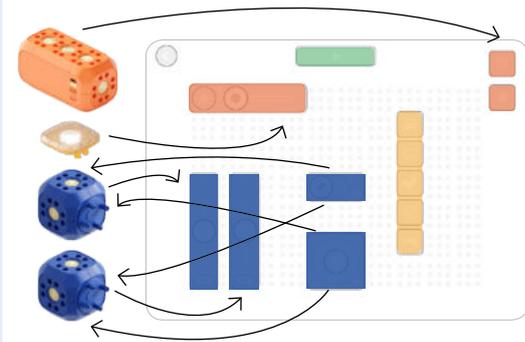
### 4. Individual Work: My Robo-Traveler.

← **Draw** the sounds, lights or movement your Robo-Traveler did while traveling to Toytown.

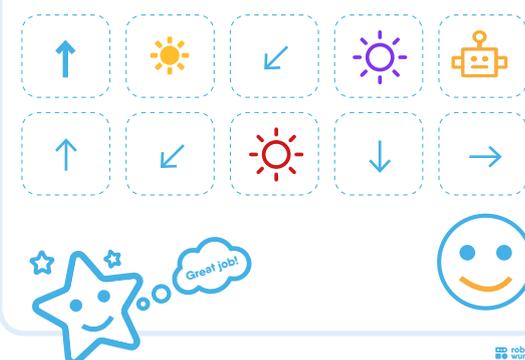
## Reflection:

← **How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.

### 3 Robo Travels to Toytown



### 4 My Robo-Traveler





# Project 7: Robo Looks Around

NAME / DATE \_\_\_\_\_

## Project 7: Robo Looks Around

Now, our Robo has friends in the toy town and would like to communicate with them more. How do we as humans communicate? Can we build a robot which has a head? Can our Robo turn its head?

Build Robo with a head and teach it how to look around and communicate with other toys!

**1** **Body Movement**

**2** **Robo's Head: Modules**

**3** **Robo Turns its Head**

**4** / **What Can My Robo Do?**

Great job!

## Lead In

**Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

### 1. Class Discussion: Body Movement.

**Ask:** How do you move different body parts: an arm or your head? How are these movements different? **Conclude:** We rotate the wrist around but we can not **rotate** the head; we **turn it right or left**. Our Robo also needs a **different Motor** to turn its head.

### 2. Class Discussion: Robo's Head: Modules.

**Discuss** how to build the Robo: what new modules do you use and why.

- **Assemble** the Robo using the picture as a model.
- **Discuss** that the **Servo Motor** turns Robo's Head; **color** this Motor.

### 3. Pair Work: Robo Turns Its Head.

**Discover** the **Servo Control** in the **Robo Live App**:

- Work in pairs to **control** Robo's head using the **Servo Control**; **compare** Robo's head movements to how you turn your head.
- **Color** the Servo Control that you used.
- **Draw** how your Robo turned its head; use the first gap as an example.

### 4. Individual/Pair Work: What Can My Robo Do?

**Discuss:** What modules and Controls have you already learned; what Controls are available in the Robo Live App for this Robo build.

- **Use** these Controls for your Robo to communicate with other toys or robots.
- Color and link these controls to the right commands for Robo.

**Reflection:**

**How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.

# Project 8: Robo Is a Guard

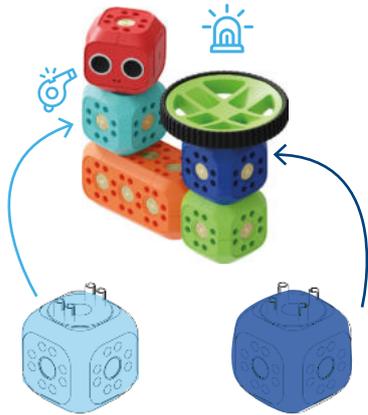
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## Project 8: Robo is a Guard

 The toys from the toy town asked Robo to help them to keep the streets safe and become a guard. What should a Robo-Guard do?

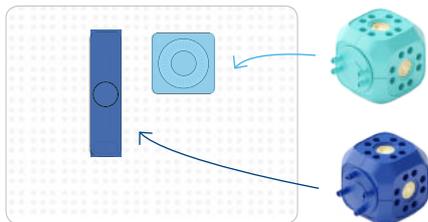
 Build a Robo-guard to help toys in toy town to keep the streets safe.

### 1 Robo's Modules

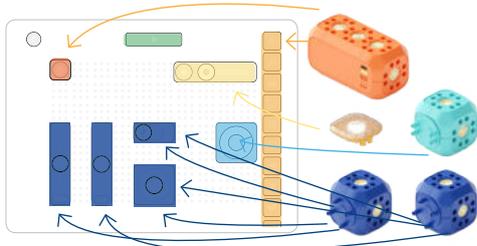




### 2 How Does Robo Move?



### 3 Robo's Controls





## Lead In

← **Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

← **1. Class Discussion: Robo's Modules.** **Discuss how to build the Robo:** there are 2 different Motors; the dark blue (DC) Motor **rotates** the Wheel and the light blue Servo Motor turns Robo's head **right or left**.

- **Color** the Motors depending on their function and **connect** them to the build.

### 2. Pair Work: How Does Robo Move?

**Compare 2 types of Motors:** Use different Controls to control them; discuss their movement, how they are different, and their function.

- **Connect** the Controls to the Motors.
- **Color** the Controls the right color.

### 3. Individual or Pair Work: Robo's Controls.

**Recall** all the Modules and Controls that you've already learned:

- **Attach** the Module(s) you learned to the build.
- **Drag and drop** the Control(s) available on the Programming screen and **try them out**.
- **Connect** the Controls to the Modules they control.
- **Color** the Controls the right color.

## Reflection:

← **How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.

# Project 9: Robo is a Pet

NAME / DATE \_\_\_\_\_

## Project 9: Robo is a Pet

 Some people can't have a pet, due to many different circumstances. In today's modern life, robots can transform in different creatures – they can even become smart robot pets! Would you like to play with a Robo-Pet?

 Build a Robo-pet using all the Modules we have learned and teach it to be our friend.





## Lead In

← **Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

← **1. Class Discussion: Robo Pet's Modules.** Discuss how to build the Robo: which Modules are used and why.

- **Connect** the modules to the build.
- **Assemble** Robo Pet using this picture as a model.

**2 Play with your Robo-Pet**

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**3 My Robo - Pet**



## 2. Pair Work: Play with Your Robo-Pet.

← **Use the Robo Live App** to control your Robo-Pet using the given instructions.

- **Show** the whole chain of movement your Robo-Pet did to your partner.
- **Mark** the instructions you have done.

## 3. Individual or Pair Work: My Robo-Pet

← **Create an instruction for your Robo-Pet:**

- **Decide** what your Robo-Pet is up to.
- **Create an instruction** in the empty squares; use task 2 as an example.
- **Color** the Controls you used.

## Reflection:

← **How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.

# Project 10: Robo is a Synthesizer

NAME / DATE \_\_\_\_\_

## Project 10: What Is Your Robo?

 Now it is your turn to decide which device or character you would like your Robo to transform into! We also need to come up with a reason as to why we need this particular Robo-Device or character, and be able to explain how it will help us!

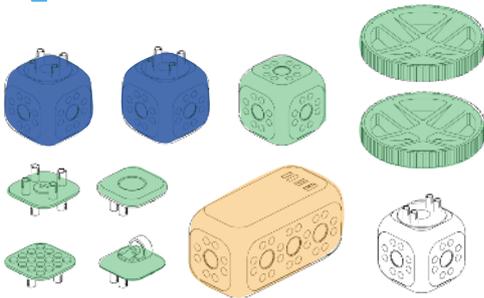
 Create your own Robo-Project and come up with a story about it.

### 1 My Robo: Story and Name

\_\_\_\_\_

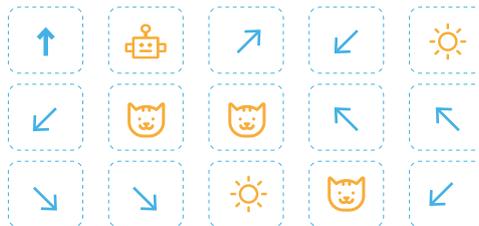
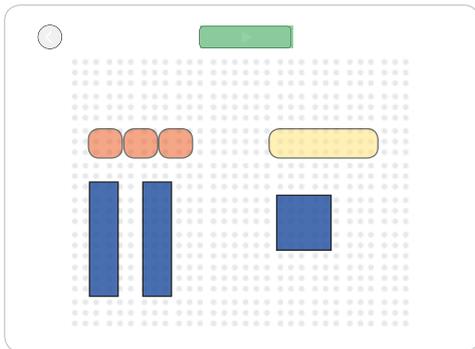
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### 2 My Robo: Modules





### 3 What My Robo Can Do





## Lead In

← **Read aloud** the Robo's Story, **discuss** questions and the project goal with your students.

## Guided Activity

← **1. Class Discussion: My Robo's Story and Name.**

**Discuss** the device or character you would like your Robo to transform to:

- Think of a **name** and a **story** about it.
- **Write down or draw** your Robo's name and a device or character.
- **Help students** who cannot write if needed.

← **2. Class Discussion: My Robo's Modules. Decide** on which modules you will need for a Robo-Project:

- **Discuss** what you want your Robo to do, its function(s), and which modules you will need to control it.
- **Color** the modules you will use for a Robo-Project.
- **Assemble** your Robo-Project.

← **3. Pair Work: What My Robo Can Do. Create an instruction** for your Robo-Project:

- **Decide** what your Robo is up to.
- **Drag and drop** the Controls on the Controlling screen in the Robo Live App and draw them on the worksheet.
- **Create an instruction** in the empty squares as you did in the previous projects.
- **Show** your Robo-Project to your partner or your class!

← **Reflection:**

**How are you feeling? Draw an emoji face:** reflect on students' moods, involvement, and motivation.