



LEGO® Education WeDo 2.0 Curriculum Pack

LEGO® Education WeDo 2.0 is developed to engage and motivate elementary students' interest in learning science- and engineering-related subjects. This is done through the use of motorized LEGO models and simple programming.

WeDo 2.0 supports a hands-on, "minds on" learning solution that gives students the confidence to ask questions and the tools to find the answers and to solve real-life problems.

Students learn by asking questions and solving problems. This material does not tell students everything they need to know. Instead it makes them question what they know and explore what they do not yet understand.





Learn science and engineering through projects

WeDo 2.0 has a range of different projects. The projects are divided into the following types:

- 1 Getting Started Project divided in 4 parts, to learn the basic functions of WeDo 2.0
- 8 Guided Projects linked to the curriculum standards, with step-by-step instructions for the complete project
- 8 Open Projects linked to the curriculum standards, with a more open experience

All 16 projects are divided into three phases: the Explore phase, to connect students to the task; the Create phase, to allow students to build and program; and the Share phase, to document and present their project.

Each project should last around three hours. Each phase has an equal importance in the project flow and could last around 45 min., but you can modify the time to spend on each.





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.

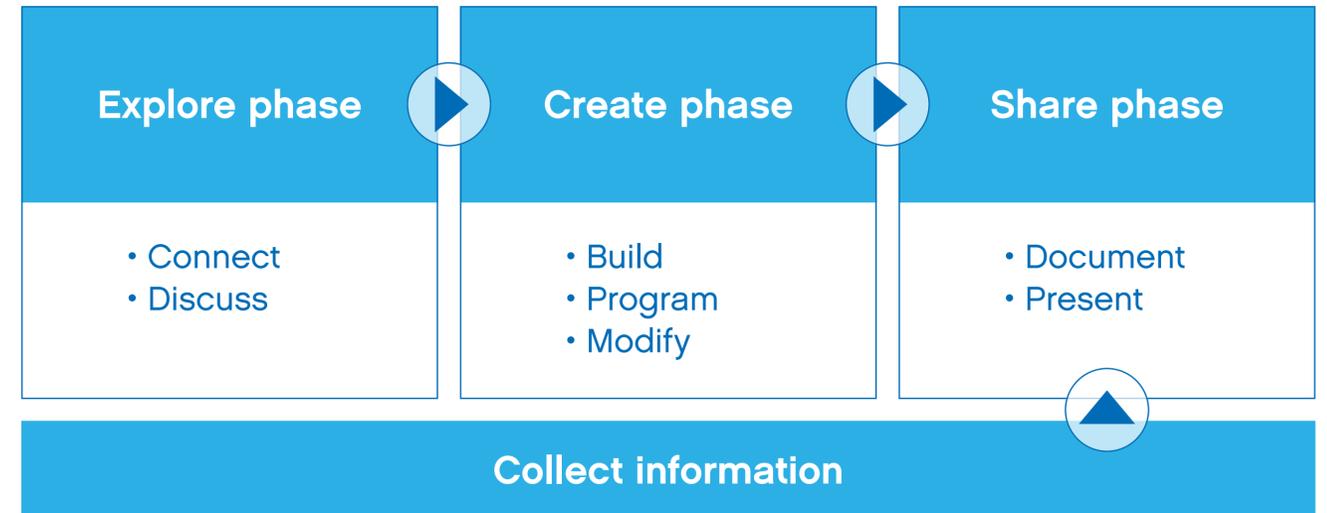
Share phase

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.





Use the Guided Projects

The Guided Projects will help you set the scene and facilitate the learning experience. The Guided Projects should build your students' confidence and provide the foundations necessary for success.

All Guided Projects follow the Explore, Create, and Share sequence to ensure that students progress step-by-step through the learning experience.

With every project teachers' notes have been provided that include:

- Curriculum links
- Detailed preparation
- Assessment grids
- Differentiation techniques and notes on possible student misconceptions.
- Explore, Create and Share Help panel

See the "Guided Projects" chapter to discover all Guided Projects.

▶ Suggestions

It is recommended that you start with the Getting Started Project followed by one or two Guided Projects to make sure students understand the approach and methodology. A good Guided Project to start with is called Pulling.





Using Open Projects

The Open Projects also follow the Explore, Create and Share sequence but intentionally do not offer the same step-by-step guidance as the Guided Projects. They provide an initial brief and starting points to build upon.

The key to using the Open Projects is to make them your own; offer opportunities for projects that are locally relevant and challenging in the areas you want them to be. Use your creativity to adapt these project ideas to suit your students. You will find teacher support about Open Projects in the “Open Projects” chapter.

With every Open Projects brief, students will be given three suggested base models to look at in the Design Library.

The Design Library, located in the software, has been designed to provide inspiration for students to build their own solution. Therefore, the goal is not to replicate the model but to get help on how to build a function, such as to lift or walk. Students will find building instructions for the 15 base models in the Design Library and pictures for inspirational models.

▶ Suggestion

The Design Library and Open Projects can be found in the WeDo 2.0 Software.





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.





The Science Lab

Max and Mia's virtual WeDo 2.0 Science Lab is a great place for students to get connected to real-life questions or problems. You can meet them in every Guided Project.

Max is always ready for a new project. He loves to discover new topics, and he is really creative when it is time to invent something new.

Mia is thrilled by any discoveries. She is very curious about the world around her, and she always wants to know more.

In the Getting Started Project, Max and Mia are joined by Milo, the Science Rover, who is capable of great discoveries.

Max and Mia have great projects to propose and they are excited to **welcome you to the LEGO® Education WeDo 2.0 Science Lab!**

