Who are you, and who am I?

My name is Jochen, and I will be your trainer for the day.

My name is Catherine, and I will be your trainer for the day.

Agenda

- Introduction
- Foundations and WeDo 2.0 solution
- Hands-on activity no. 1 (Getting Started Project)
- Curriculum relevance
- Demo Hands-on activity no. 2 (Guided Project)
- Teacher Guide
- Recap and questions
Objectives and expectations

- Understand the WeDo 2.0 concept.
- Be comfortable with the set and the software.
- Work hands-on.
- Have lots of fun.

Introduction to the LEGO® Group and LEGO Education

The LEGO® Group
Play and learning since 1932

Our Mission
Inspire and develop the builders of tomorrow.
LEGO Education

- Founded in 1980; R&D based in Denmark
- Educational solutions for children aged 1-15+
- Present in sixty-three countries
- Involved in major school projects around the world
- Highly professional educational partner network
- Global concept with local applications

Times are changing

Students of the 21st century

“Open-ended learning!"

$2 \times 2 = \ ?$
Let’s try ... 

Place the six bricks in front of you...

• How fast can you build a model of a duck?

The power of imagination

Your HANDS know a lot more than YOU THINK they know!

Your HANDS know things that YOUR MIND doesn’t know that it knows!

The 4C Approach

Connect  Construct  Contemplate  Continue
Introduction to LEGO Education WeDo 2.0

WeDo 2.0 foundations

Foundation 1
Project process

Foundation 2
Project categories

Foundation 3
Project types and curriculum value

Foundation 1
Project process

Explore
Connect
Discuss
Contemplate

Create
Build and program
Modify
Create

Share
Document
Present

Continue
Foundation 2
Project categories

Getting Started
- One project
  (Four parts)

Guided
- Eight projects

Open
- Eight projects

Getting started

Foundation 2
Project categories

Guided projects

Open projects

Milo, the science rover
- One project
  (Four parts)
Use LEGO bricks in a computational thinking context:

- Use logical reasoning.
- Look for patterns.
- Organize and analyze data.
- Use modeling and simulations.

Use LEGO bricks in a scientific and engineering context:

- Use computers to assist in testing models and ideas.
- Use algorithms to sequence actions.

Foundations 3
Project types and curriculum value

WeDo 2.0 core components

WeDo 2.0 Core Set
(Manual)
WeDo 2.0 Core Set overview

- Motor
- Motion Sensor
- Tilt Sensor
- Smarthub
- Supplementary rechargable battery and transformer
- Transformer
- Smarthub Rechargeable Battery

WeDo 2.0 Software

- WeDo 2.0 Core Set
- Smarthub
- Motion Sensor
- Tilt Sensor
- Smarthub Rechargeable Battery

WeDo 2.0 Software and content overview

- Help panel
- Documentation tool
- Capture tool
- Design Library
- Project Library
- Lobby
- Smarthub
- Motion Sensor
- Tilt Sensor
- Smarthub Rechargeable Battery

WeDo 2.0 Curriculum pack
Getting Started Project, part A
Milo, the Science Rover

Meet Milo, the Science Rover

- Build the first model from the provided Building Instructions.
- Program your model with the sample program.
- Can you create your own experiment and change the parameters of the program?
- Discover new Programming blocks on your own.

Getting Started Project, part B
Milo’s Motion Sensor

- Use a Motion Sensor.
- Build an arm for the Motion Sensor to allow Milo to detect an object.
- Program Milo to go forward until it detects an object and then stop.

Getting Started Project, part C
Milo’s Tilt Sensor

- Introduce the use of a Tilt Sensor.
- Build a device using the Tilt Sensor that can send a message back to the base.
- Program Milo to send a message back to the base depending on the angle of the Tilt Sensor, for example:
  - If tilted down, the red LED will light up.
  - If tilted up, a text message will appear on the device.
Getting Started Project, part D

Collaborate

- Collaborate with other rovers
- Pair up with another team to complete the final part of the mission.
- Build a transportation device by physically connecting two rovers together.
- Create your own Programming strings so you can move a specimen from point A to point B.

Curriculum relevance

Science & technology
- systems thinking
- creativity
- collaboration
- communication

“Science is about the attitudes, values, and skills that determine how people learn and acquire knowledge about the world.”

Eight Guided Projects

Life science
Earth and space science
Physical science
Engineering
Guided Projects
Process: Explore, Create, and Share phases

- 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 phases to ensure that students progress step-by-step through the learning experience.

Guided Project, demo
Pulling, part no. 1

- Build the first model from the building instructions.
- Program your model with the sample program.
- Investigate how much weight you can put in the cart before stopping the robot.
- Remember to document everything in the Documentation tool.
- Test different combinations and structures with different objects.
- What is happening in terms of balanced and unbalanced forces?
Open Projects

Process: Explore, Create, and Share phases

- The Open Projects also follow the Explore, Create and Share phases but intentionally do not offer the same step-by-step guidance as the Guided Projects.
- Open Projects provide a brief description and starting points for you and your students to build upon.
- Students can consult the Design Library containing building and programming inspiration.
**Assessment with WeDo 2.0**

**Teacher-led**

**Student-led**

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**Summary**

**Project process**
Explore, Create and Share phases

**Project categories**
Getting Started, Guided and Open projects

**Project types and curriculum value**
Modeling, investigating, and designing

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**WeDo 2.0 makes Science come to life.**

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**LEGO Education Community**
- Share your ideas and see others' lessons.
- Ask questions and make comments.
- Participate with educators from around the world.
- Sign up today!

https://community.education.lego.com/
Summary and questions

LEGO Education Academy