



education



WeDo 2.0 Projects

Teacher Guide





Published by LKD Educational Resources

Amman - Jordan

Fax: +962 6 5516404

Email: info@lkd.com.jo

Tel: +962 6 5374141

P.O.Box: 851346

Web: www.lkd.com.jo



Units	Unit Title	Courses Name
1	Getting Started Projects Part 1	WeDo 2.0
2	Scratch Introduction	Scratch
3	Getting Started Projects Part 2	WeDo 2.0
4	Plants and Pollinators	WeDo 2.0
5	The Reflection of Light	Scratch
6	Sea Waves	Scratch
7	Road car	WeDo 2.0 By LKD
8	Hungry Bat	Scratch
9	Frog Metamorphosis	WeDo 2.0
10	Even or Odd Game	Scratch
11	Volcano Alert (Computational Thinking)	WeDo 2.0
12	The Traffic Light	Scratch
13	The Drawing Sheep	WeDo 2.0 By LKD
14	The ship of the desert	Scratch
15	The Pilot	WeDo 2.0 By LKD
16	Wall clock	Scratch
17	The Elevator	WeDo 2.0 By LKD
18	Predator and Prey (Open Project)	WeDo 2.0
19	Dancing Ballerina	Scratch
20	The Lawn Mower	WeDo 2.0 By LKD
21	A Conversation over books	Scratch
22	Park Field	WeDo 2.0 By LKD
23	Talk like a Robot (Open project)	Scratch
24	Wildlife Crossing (Open Project)	WeDo 2.0
25	Laila and the Wolf (Open Project)	Scratch
26	Scratch with Wedo 2.0 Mixed Project 1	Scratch+WeDo 2.0
27	Scratch with WeDo 2.0 Mixed Project 2	Scratch+WeDo 2.0

Road car

WeDo 2.0 Project



Project at a Glance

In this project Student will build and program a model of a fast strong car that outperforms the challenges and potential problems on a rugged road.

Key Words:

Speed, road potential problems, alert, focused, seat belts.

Learning Objectives

By the end of this project, students should be able to:

- Recognize the safety rules of cars.
- Explain why drivers should be alert and focused.
- Build and design a model of a road car, and understand the building mechanics used in the model.

Introduction

Driving a car is not an easy task, so before you get behind the wheel, here are some tips to help you stay in control:

- 1) **Stay focused:** Driving is primarily a thinking task, and you have a lot of things to think about when you're behind the wheel like road conditions, your speed and position, observing traffic laws, signs, signals, road markings, following directions, being aware of the cars around you, checking your mirrors and the list goes on. Staying focused on driving -and only driving- is critical to safe driving.
- 2) **Distractions:** like talking on the phone or eating, make a driver less able to see potential problems and properly react to them. It's not just teen drivers who are at fault: People who have been driving for a while can get overconfident in their driving abilities and let their driving skills get sloppy. All drivers need to remind themselves to stay focused.
- 3) **Stay alert:** Being alert (not sleepy or under the influence) allows you to react quickly to potential problems, like when the driver in the car ahead slams on the brakes at the last minute. Obviously, alcohol or drugs (including prescription and over-the-counter drugs) affect a driver's reaction time and judgment. Driving while drowsy has the same effect and is one of the leading causes of crashes. So rest up before your road trip.

Rules for the Car

- **A seatbelt must be worn during every car trip:** It should be fastened before the car is even in motion and should be left on until the end of the trip.
- **Use all seatbelts:** Most cars have lap and shoulder belts that buckle as a unit, but some have two separate belts, one lap and one shoulder. Some have a lap belt only. Teach your kids to look for and secure every belt. Also teach them not to tuck the belt under their armpit, even if they think it is more comfortable that way. Doing so makes the belt less effective in a crash.
- **Never share seatbelts:** It might seem like fun, but two kids should never buckle up as a pair.
- **Sit in the back seat:** Kids under 13 years old should always ride in the back seat. This protects them from possible injury when a passenger-side air bag deploys. Explain that air bags could seriously hurt a small child because they are designed to protect a person with a much bigger body.
- **Play it cool:** Kids should understand the importance of staying calm and low-key in the back seat. If they are jumping around or yelling, it can distract the driver and put all the passengers at risk.
- **Follow the rules in every car.** Kids need to follow the rules if they are in a friend's or relative's car, even if other passengers don't follow the rules.

Connection

- 1) Show your students a connection photo/video about the road car.
- 2) Ask your students these question for discussion:
 - What difficulties / potential problems may a driver face while driving?
 - What advices can you give him/her?
 - Can you build a model of a car outperforms the road obstacles? How? What are the problems you have faced?

Create

Hands-On, Minds-ON: (learn by doing)

Students will build a road car using LEGO bricks in the WeDo 2.0 kit, and observe its characteristics. After that, let them program it as suggested and observe how it's moving.

Share

Ask the students to share, present, and discuss their ideas, models, results of the mission and the engineering based design with the colleagues.

Continue Phase

It's time to take the project to the next level, you can choose a way to enhance the model by changing the code or model structure.

Investigate More

Ask your students to investigate what happens if they remove the rubber band from their model car.