

STEAM IS FOR ME: A PERSONAL GUIDE

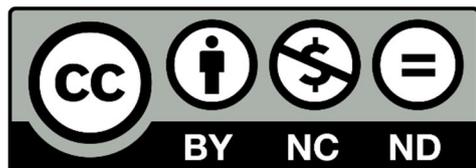
STEAM SLICK CARDS, MADE BY THOMAS MORE



Co-funded by the
Erasmus+ Programme
of the European Union

*The STEAM4U project has been supported by the Erasmus+ programme of the European Union
(Project reference 2016-1-ES01-KA201-025633).*

*However, the European Commission support for the production of this publication does not
constitute an endorsement of the contents which reflects the views only of the authors, and the
Commission cannot be held responsible for any use which may be made of the information
contained therein.*



“STEAM slick-cards. Newton” has been created by Thomas More and edited by CRECIM – Centre for Research in Science and Mathematics Education.

Is distributed by a Creative Commons license

Attribution - Non Commercial - No Derivatives 4.0 International

<https://creativecommons.org/licenses/by-nc-nd/4.0/>

Recommended Citation:

Thomas More (2018). *STEAM slick-cards. Newton* .In CRECIM (Eds.), *STEAM is for me: a personal guide*



WiWeTeR
@THOMAS MORE



DO YOU KNOW
MORE THAN YOUR
PARENTS?
**FIND IT
OUT!**



NEWTON 



STEAM-CARDS



These cards were developed in the context of a European project 'STEAM4U'.

In these cards you will find questions, proposals of experiments and little facts.

The goal is to challenge your parents after each WiWeTeR-session to find an answer to the questions on the card of that session. Pose the questions in the car or at the dining table. Discover what your parents know about the topics of the WiWeTeR-session.

Are you smarter than your parents?

Have a lot of discovery pleasure!



SESSION

Vertical windmill



**You're a real expert now!
Challenge your parents with
the following questions!**

- How many vanes is best suited for a windmill?
- How do the vanes of a windmill look like? Which form?
- In the air are a lot of "particles". Which particles are most common in the air?



NEWTON 



DO THE TEST

Take a strong plastic bottle and remove the cap.

Take a balloon, inflate it a little bit and let it deflate again.

Put the balloon over the top of the bottle. Take the top of the bottle in your hands and keep it slanted under hot running water.

What happens?
How does this work?



 The hot water heats up the bottle, not only the plastic but also the air inside of the bottle. When air heats up, it will expand. It takes more space. As a result, the air does not fit into the bottle anymore. The balloon gets inflated by the hot air inside of the bottle.



SESSION

Relish of science



**You're a real expert now!
Challenge your parents with
the following questions!**

- A grownup can stand on an empty can, without deforming the can. How is this possible?
- Which structure is the strongest? A triangular or quadrangular structure?
- What is one of the strongest natural substances on earth?

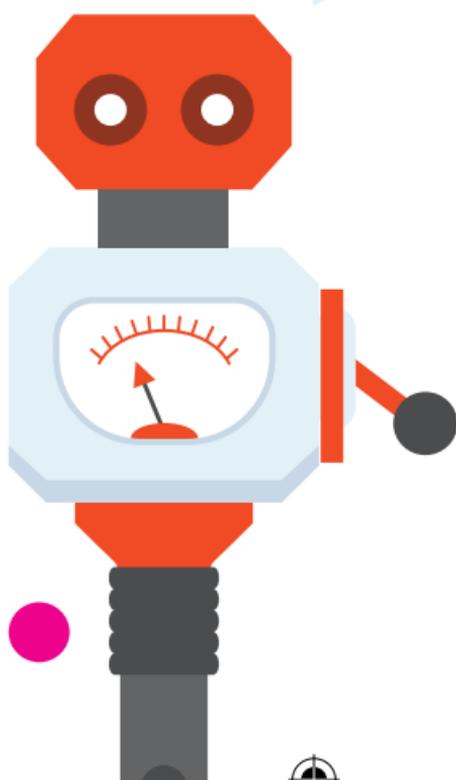


NEWTON



DID YOU KNOW THAT...

- The Eiffel tower in Paris, build by Gustav Eiffel in 1887, is one of the most famous monuments where a triangular structure is visible.
- Did you know that the Eiffel tower is 540 baguettes high?





SESSION

Blockly & Ozobot



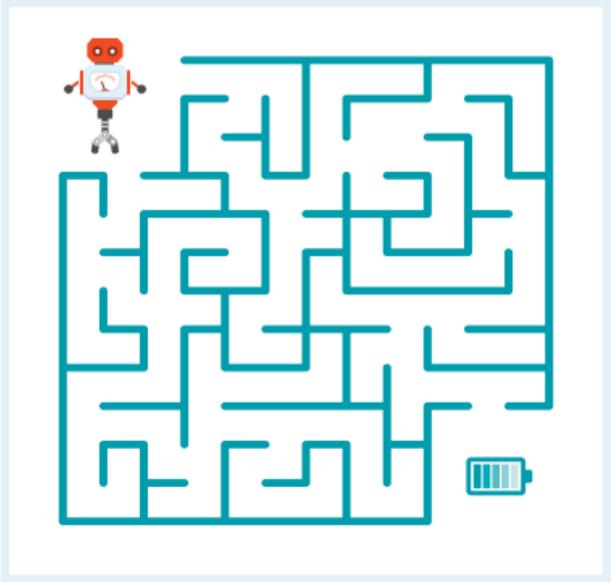
**You're a real expert now!
Challenge your parents with
the following questions!**

- Which programming language is the base of Blockly?
- How does programming in Blockly work?
- How can you program an Ozobot to follow a certain road?

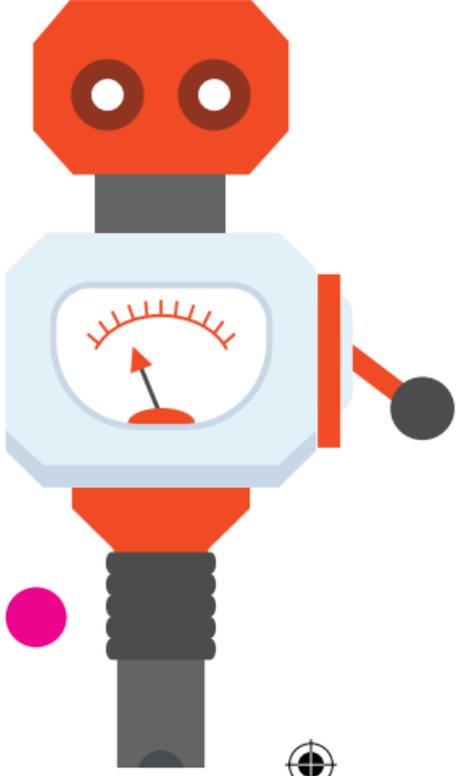




FIND THE WAY FOR THE ROBOT



Experiment yourself with Blockly:
<https://blockly-games.appspot.com>





SESSION

1000 bombs and grenades



You're a real expert now!
Challenge your parents with
the following questions!

- What is under pressure?
- How can you convert a vacuum cleaner into a cannon?
- Which aspects are important when you want to launch a projectile as far as possible with a vacuum cleaner?



NEWTON



DO THE TEST

Fill a glass of water to the edge, until you can see the water over the edge.

Take a postcard (or birthday card) and put it with the smooth side on the glass.

Lift the glass and turn it around carefully.

What happens?
How does this work?



AIR PRESSURE

⚙️ The air presses against everything around us (=air pressure). When you turn around the glass with the water and the postcard, the air at the outside of the glass presses harder to the card than the water inside of the glass. The card will stick to the glass and will not fall.

SESSION

Bumblebees



You're a real expert now!
Challenge your parents with
the following questions!

- What is the difference between a wasp, a bee and a bumblebee?
- What does 'mimicry' mean?
- What is the purpose of an angel of a bumblebee?

NEWTON



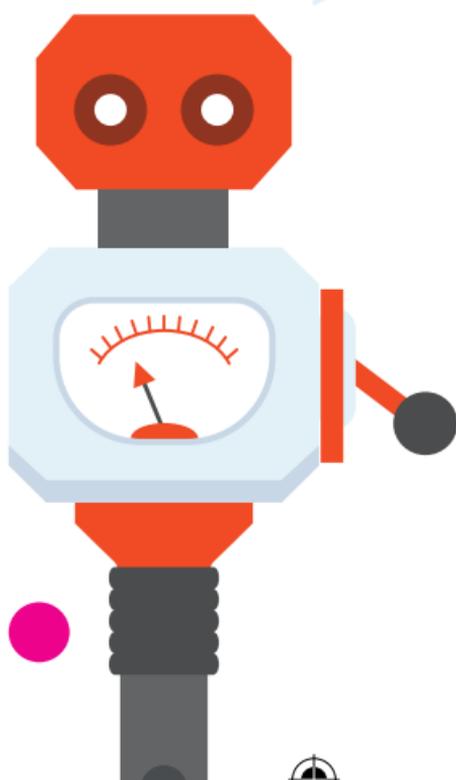
DID YOU KNOW THAT...



➤ Bumblebees are, next to the honey bees, very important for the pollination of plants.

➤ Did you know that a bumblebee can fly with more than 300 times its own weight?

Can you walk with more than 300 times your own weight? I don't think so...





SESSION

Stack on color



You're a real expert now!
Challenge your parents with
the following questions!

- Is cola light really 'light'?
- What is the 'density of substances'?
- When you pour two cups of colored water together, they will mingle. How can you make sure the two colors stay separated?



NEWTON

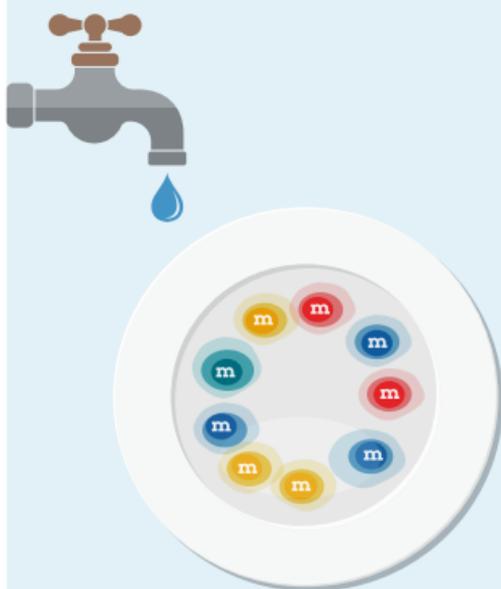


DO THE TEST

Take a flat plate and put skittles (or M&Ms) at the edge of the plate.

Then pour a little water on the plate so that the skittles are lying in the water.

What happens?
How does this work?



⚙️ The pigment of the sweets dissolves in water. First the pigment and afterwards the white sugar will expand (diffusion). Around each candy you find its own color. These colors will meet each other and after a while they will mingle at the border.



Do you want to
know more about
WiWeTeR?



www.wiweter.be



+ 32 (0)499 11 18 45



wiweter





Supported by the
Erasmus+ programme
of the European Union

Project 2016-1-ES01-KA201-025633



www.wiweter.be

