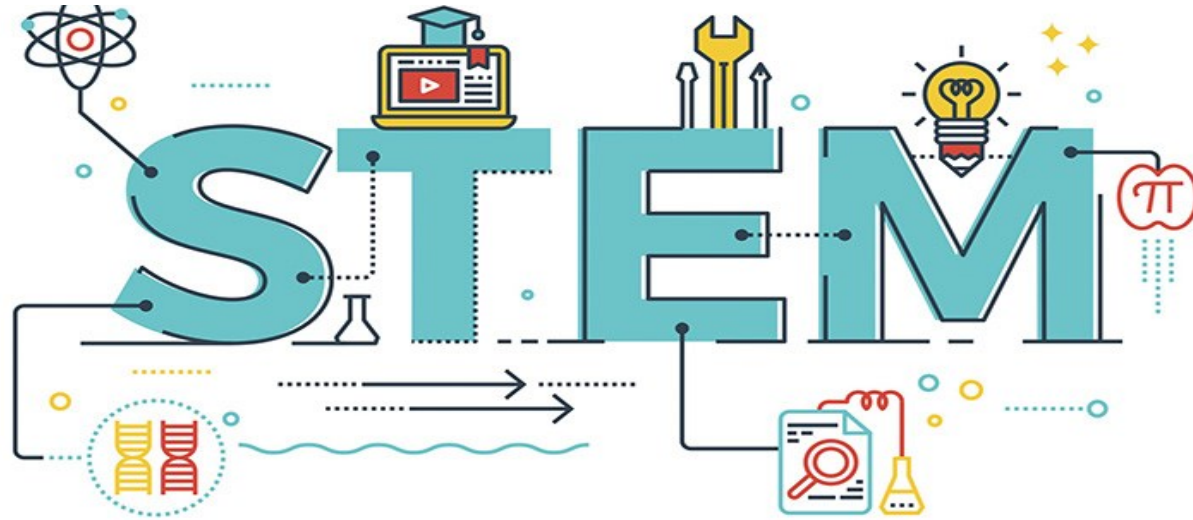




Co-funded by the  
Erasmus+ Programme  
of the European Union



**Master class**

**"I can measure everything!"**

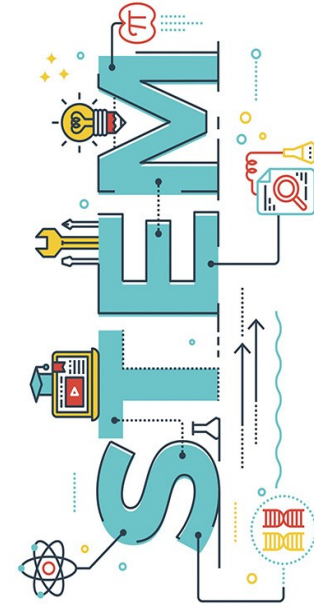
**Aim: Design and build easy-to-use measuring devices using LEGO education.**

**Tasks:**

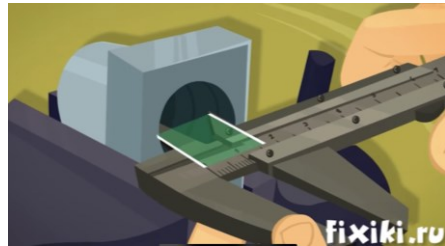
- To pick up the details of the constructor to create measuring carts and create a working model;
- To explore the capabilities of the model;
- To establish the dependence of the range of movement of the trolley on its mass, wheel dimensions, the height of the inclined plane, and the gear system;
- To show the practical orientation of the "Lego-meter".

**Equipment: LEGO Education 9686 "Technology and Foundations of Mechanics" construction set.**

**Target audience: Grade 4 (10-11 years old).**



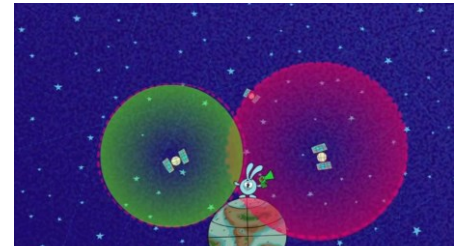
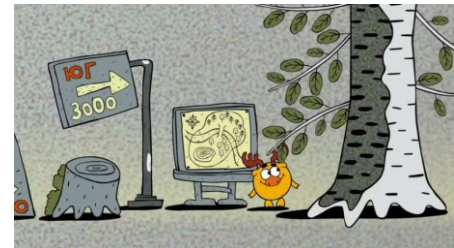
## "Fixies"

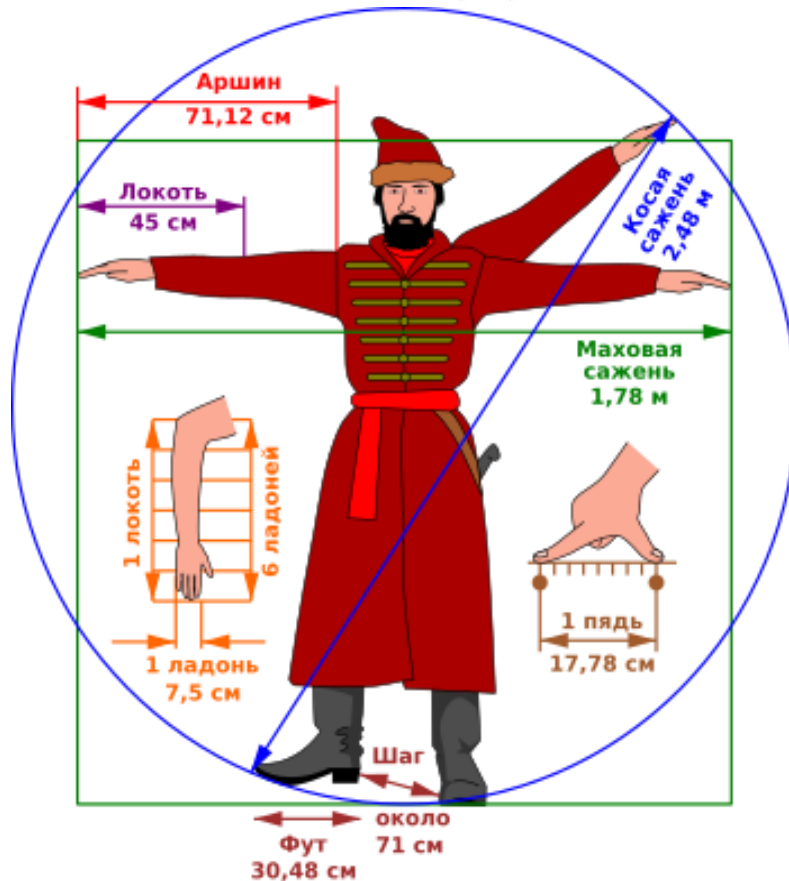


## "38 parrots"



## "Kikkoriki: Pin-code"





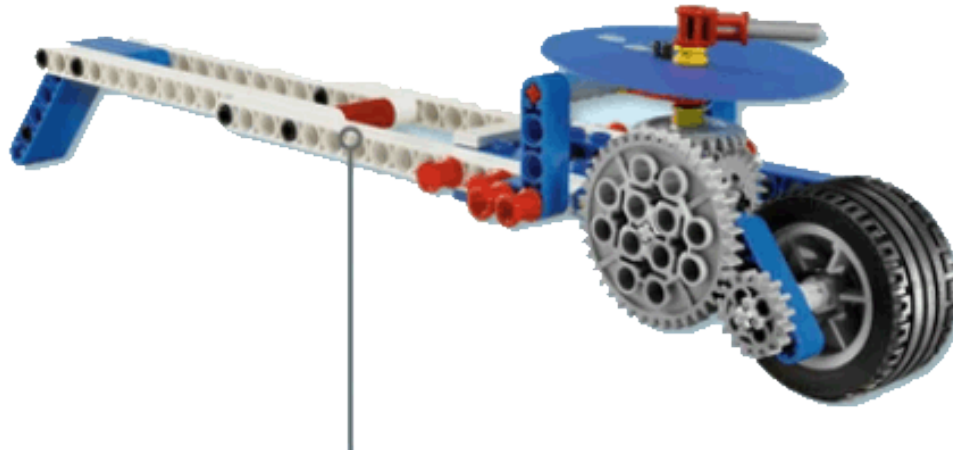
## Actuality

Today we use rulers, tape measures, centimeter tapes, we can also measure "by eye", that is, indicate the approximate distance. But, unfortunately, we will not be able to measure a curved line with a ruler, as well as determine its distance by eye. So we can use the LEGO educational solution to create a device for measuring distances, jumps, curved lines. We will be able to create a device that can be used in math lessons and everyday life. For example, determine how much paint to use when painting panels in an office.

**Materials:** Technique and Foundations of Mechanics Set (9686) (it is recommended to use one set for two students), a ruler, three objects with even, straight edges less than 1 m in length, free space on the floor for safe long jump, whiteboard markers.

**Terms:** scale, calibration, measurement error, distance.

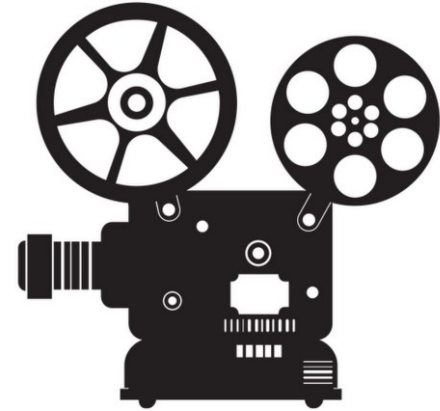
**Subjects:** mathematics, literature, history, physics.





Lego Trundle Wheel - Aarav Patel –  
RFL Ahmedabad (8980172306)

<https://www.youtube.com/watch?v=99CP8SNjeAI>



## Where can we apply this knowledge?

There are many ways and possibilities. For example, the well-known game that is very popular among many children and teenagers, and among adults as well - Minecraft. Minecraft provides a wide range of STEM learning opportunities, from computer science and mathematics to mixed reality, storytelling, programming, and digital learning.



- In-game play by exploring movement within the game as well as learning the process for placing and breaking blocks
- In-game features to use as tools for assessment and feedback
- The process of creating build challenges utilizing game-based strategies

# Thank you for your attention!



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