

## Didactic Scenario

### 1. Title

Which one is heavier

### 2. Keywords

K'nex, balance, mass, design, maths, science

### 3. Basic Information

**STEAM Subject:** Maths, Science, Art and Technology

**Typical interaction time with the instructional scenario in teaching hours for in-school work:**  
40'+40'

**General description of the scenario:**

The equal-armed balance is the tool used in all areas of human life to measure the mass of objects. Two different objects made of K'nex are presented and children are asked how the weight difference between these two objects can be found, thus arousing curiosity in children. Then, children are asked to make a design suitable for the purpose by establishing a part-whole relationship. Students will gain self-confidence in the K'nex design they have made and will experience the happiness of creating a work.

<u>Phases</u>	<u>Stage</u>	<u>Time</u>
Inducing curiosity with introductory questions	preparation stage	40'+40'
Explaining what is expected of them with the activities to be carried out.	preparation stage	40'+40'
Presentation of the content design work exhibition	implementation stage	40'+40'

**Age group:** 9-11years

**Estimated difficulty level:**

Very Easy	Easy	Moderate	Challenging	Very Challenging
		X		

**Teaching resources**

course books-TRT EBA videos and TV programs

**Material:** smart board, computer, precision scales

**School infrastructure:** smart board, computer, precision scales

**Additional material from external sources/online tools:**

K'nex

**Differentiated Instruction for students of differing abilities and learning styles in the same class:** N/A

**Developed by:** Nurcan Yanalak

#### 4. Educational Problem

To enable children to learn the basic units of measurement by observing them from the most basic level in this age when everything is digitalised. In addition, to expand their visual perception about the weight measurement of objects by developing their creativity and comparison skills.

#### 5. Learning Objective (-s)

1. To teach basic units of measurement manually.
2. To develop creativity skills.
3. Estimating the mass of objects.
4. To raise their self-confidence to a higher level. Build your own structures by manipulating objects and creating motions using technological tools when necessary.

## 6. Phases of the Scenario

### Phase 1

**Title:** Inducing curiosity with introductory questions

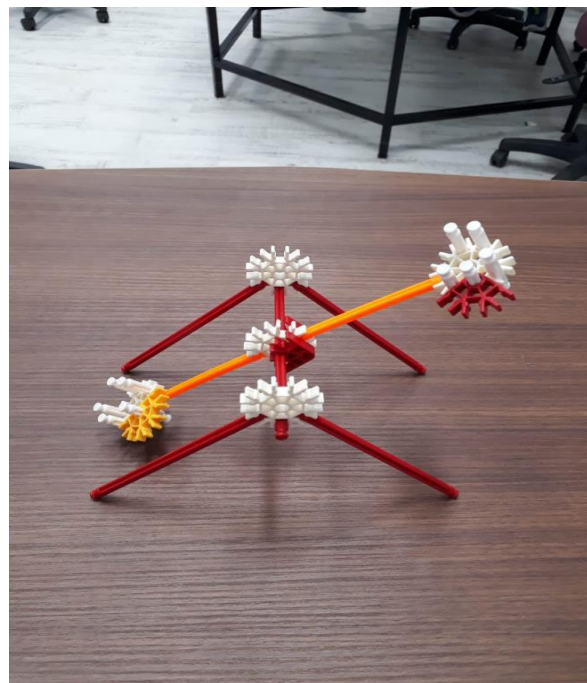
Indoor	Outdoor	Mixed
X		

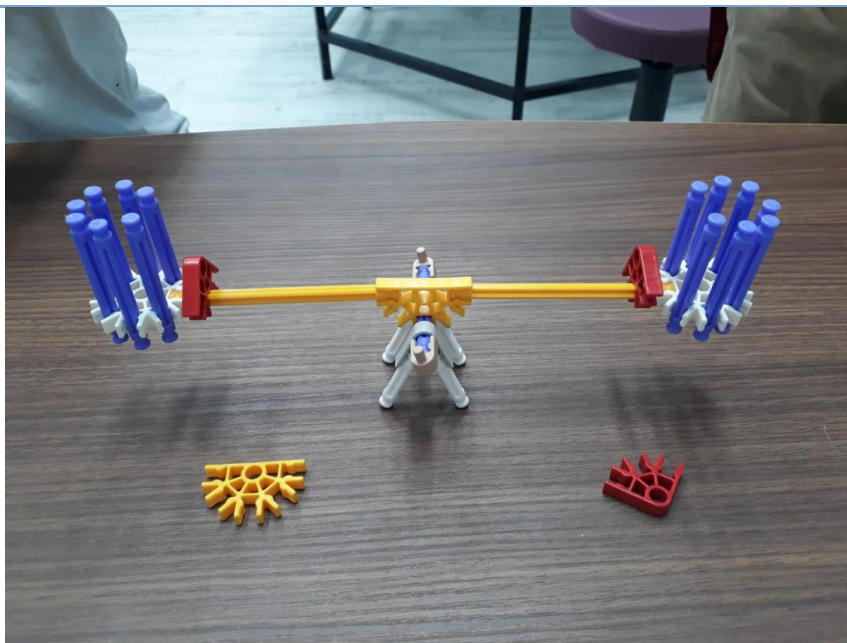
**Phase duration in minutes:** 10'

#### Detailed description of the scenario phase:

The first stage of the scenario is to make them think about the subject by asking weight questions from daily life. Events such as greengrocery shopping or grocery shopping are discussed and information about the functions of the scale is discussed. Then, certain objects are shown and their weights are estimated.

Children are encouraged to design the scales they have imagined and reveal the scales they have built with K'nex parts.





Activity sheets: N/A

## Phase 2

**Title:** Explaining what is expected of them with the activities to be carried out

Indoor	Outdoor	Mixed
X		

**Phase duration in minutes:** 5'

### Detailed description of the scenario phase:

The Mathematics teacher explains to the classroom what the project is about, its outcomes and how it will be evaluated. The teacher introduces movements in the plane (translation, rotation and symmetries), its key elements and definitions.

### Activity sheets:

MC Escher, Images of Mathematics

<https://youtu.be/t-Gcz9FIB4w>

## Phase 3

**Title:** Presentation of the instructional-educational content

Indoor	Outdoor	Mixed
X		

**Phase duration in minutes: 40'**

**Detailed description of the scenario phase:**

The Art teacher explains how to create a translational and rotational tessellation with videos, explaining the work of M. C. Escher. Students visit the <https://www.kulturportali.gov.tr/turkiye/gaziantep/gezilecekyer/zeugma-mozaik-muzesi> and select an artwork they use for creating their tessellation.

**Activity sheets:**

Handouts the teacher has already prepared for the students or alternatively the teacher can take the class to the ICT room and students can select their picture from any portal or prepare their owns.

Students can also use mosaic samples in this museum.

<http://zeugma.org.tr/sanaltur.aspx>

## 7. Evaluation Methodology

Evaluation will be done by observing students in group work and students will vote by using kahoot.com tool.

## 8. Additional Resources for the teacher

N/A