Erasmus+
Programme Your Future

COMPUTATIONAL THINKING - LESSON SCRIPT

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Lesson information:	Subject:	Mathematics
	Duration:	45 min
	Grade:	4th and 5th
	Age:	10-11
	Topic:	Geometry, identifying and drawing angles

The curriculum specifications and requirements:

Finnish curriculum 2014, Grades from 3rd to 6th:
S4 Geometry and measuring:
"Getting familiar with points, segments, straights and angles. Practicing to draw, measure and classify angles."
"Classifying forms to polygons and to other forms, as well as exploring their properties. Taking a closer look to triangles, rectangles and a circle."

The aims of the lesson:

- Pupils recognize different types of angles
- Pupils measure an angle with protractor
- Pupils draw certain angle with protractor
- Pupils draw certain angle with computer (Scratch)

Previous knowledge:

- Pupils know the concept of line, point and angle

The forms of work:

- Working in pairs
- Individual working

The methods of work:

- Study discussion
- Learning video
- Excercises with paper, pencil and protractor
- Drawing with Scratch (computer)

Teaching aids:

- The document camera and projector for presentation of the subject
- Computers for pupils to use of Scratch
- Lego Mindstorm robot for educated pupils to draw forms

The range of using ICT:

- Presenting
- Practising
- Drawing
- Solving problems

The course of lesson:

- **Teacher activities**

1. Introduction
    - Checking previously learned knowledge, study conversation with pictures, document camera and projector

- **Pupil activities**
- **The schedule**

7 min

2. Different types of angles and marking angles
    - Discussing and combining different types of angles to the right names in pairs, pictures and names on the screen
    - Checking the right answers

    8min
3. How to measure angles
    - Video about measuring, computer and projector, https://www.youtube.com/watch?v=zSFyI5e2F0A or https://www.youtube.com/watch?v=b1mELaFxcKo

    5min
4. How to draw angles
    - Video about drawing, computer and projector, https://www.youtube.com/watch?v=aplg1CO97Y0

    5min
5. Practising to measure and to draw
    - Worksheet: Practising to measure and draw angles (attachment), pencil and protractor
    - Meanwhile the teacher puts Scratch instructions to the screen and shares the Scratch guide

    10min
6. Drawing angles with Scratch
   (Windows laptops taken ready before the lesson starts)
    - Working individually or in pairs
    - Advanced student peer support

    10min

Specific information:

- **Programs**
- **Links**
- **Etc**

- Youtube:
  https://www.youtube.com/watch?v=zSFyI5e2F0A
  https://www.youtube.com/watch?v=b1mELaFxcKo
  https://www.youtube.com/watch?v=aplg1CO97Y0
- Scratch: https://scratch.mit.edu/

Attachments:

- **Worksheets**
- **Programs**
- **files necessary**
- **Etc**

- Worksheet: Practising to measure and draw angles
- Scratch instructions about drawing from the book:
  Hei, Me koodataan!, Readme.fi 2015.
- Common knowledge about coding basis from the book
  Reseptit OPSin käyttöön, PS-kustannus 2016