

Lesson plan module 5 - Polygons & Flowers



Objectives:

- Apply the computational concepts of shapes and repeat control.
- Know how to draw angles and use the pen function.
- Develop communication skills, critical thinking, problem solving, collaboration, and creativity skills.

Materials:

- Computers
- Internet
- PowerPoint module 5

Duration:

- +/- 2 hours

Timing	Teachers activities	Learners activities	Competences
Engage Phase 30' 	Explain to the learners that today coding session is all about creating your own sprite by drawing. To be able to draw, we need to be able to recognize polygons. Ask the students what a polygon is. Compile a definition together with the learners. It could look like this: a polygon is a plane figure with at least three straight sides and angles. Ask the learners to sketch some of the polygons they know. Fil in the table in in the PowerPoint. Looking at the completed table, ask the students what strikes them. If the learners don't point it out, explain that if they divide 360 by the number of sides in a polygon they would find the angle of the polygon. In this way they can draw a wide range of things with Scratch.	• The learners understand what polygons are. • The learners understand that polygons are usefull in drawing sprites in Scratch • Learners realize they can calculate the angles of polygons .	Critical thinking, brainstorming and communication skills.

Timing	Teachers activities	Learners activities	Competences
Demonstration Phase 20' 	Show your students how they can draw angles and use the pen funtion in Scratch. You can do that by using the PowerPoint of module 5 and by showing an example. Ask the learners to observe. Maybe you can ask some questions: • What did you see? Does it look difficult? • How did the game work?	• The learners observe the demonstration and take notes of the following questions : ▪ What did you see? Does it look difficult? ▪ How did the game work? What did I do?	collaboration, creativity computational, problem solving, coding skills, communication skills
Experimenting Phase 30' 	Drawing Angles Let the learners try to draw the polygons they listed in the engage phase. This requires them to know the degrees of each polygon. Remind them they can have a look at the table. After a while encourage them to draw more complex things such as a circle and a flower.	Learners design (individually or in pairs/groups) different polygons. They discover the possibilities of drawing in Scratch	collaboration, creativity computational, problem solving, coding skills, communication skills.
Experimenting Phase 30' 	Design your own Sprite Let the learners design their own sprite by using pen blocks. Encourage the learners to: • Add a trigger (event) • Add the "Erase all" • Hide and show • Change color	Learners design (individually or in pairs/groups) a sprite. When done learners show their project in their feedback group. Let learners gather feedback by having their feedback group members respond to the following questions: • What is something that doesn't work or could be improved? • What is something that is confusing or could be done differently? • What is something that works well or you really like about the project?	collaboration, creativity computational, problem solving, coding skills, communication skills, feedback skills



Timing	Teachers activities	Learners activities	Competences
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When the learners are ready invite them to share their projects to a 'feedback group'. A feedback group is a small group of learners who share ideas and projects-in-progress with one another in order to get feedback and suggestions for further development. Divide students in smaller groups of 3 - 4 people. In these feedback groups, ask the learners to take turns sharing their games. Give the learners time to improve the games using the feedback.

Reflection Phase
10'



Ask the learners what they have discovered today and what they would like to do in the next coding club.

Guiding questions:

- *What was challenging about this coding club session?*
- *What are you proud of?*
- *What was the main feedback you got from your fellow coders?*
- *What would you like to improve still?*

- The learners share and reflect on the coding club session.
- The learners express their aspirations for the next coding club session.

Reflection, communication skills