EARLY Teaching Scenario

Topic: spelling, word search, programming

Learning outcome:

Students...

- Learn how to program Sphero robot with the Edu app.
- Learn how to program Sphero so it moves on command from one place to another.
- Practice their skills in estimating distance, degrees and speed.
- Practice their logical thinking.
- Practise their collaboration skills.
- Learn from the mistakes they make in the process.

Target group: elementary school
Age of students: 9-15 years old
Number of pupils: One to three students per Sphero
Duration (estimated time/number of lessons): 1X60 minute lesson or 2X40 minute lesson.

Prerequisites (necessary materials and online resources):

- Ipads with the Edu app.
- Sphero balls, one to three students per Sphero.
- Good floor space.
- Predetermined start point.
- Predetermined stations where Sphero has to move to. At least two stations to begin with, easy to add more when students get more confident.
- Individual letters, words, pictures on cards placed in each station. Here teacher can use their imagination.

Introduction to the scenario *(incl. possible applications, alternatives and risks)***:**

- This assignment is ideal for individual work or small groups, two or three students.
- If a mistake is made students shall start over from the beginning. They must be accurate, the Sphero must hit the station pretty accurately. If not adjust the degrees.
- Students program Sphero to move from one place to another and collect cards with letters, words, pictures or whatever you come up with.
- The work can end there or students can continue working with the material the Sphero collected.

Before the program begins (preparatory work for teacher):

- Decide what Sphero is supposed to collect.
- Set up the stations; place the items on each station.
- Make sure all Ipads and Sphero balls are fully charged.

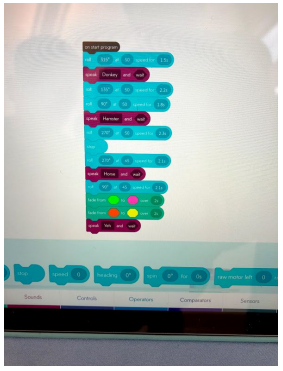
Main part of the scenario

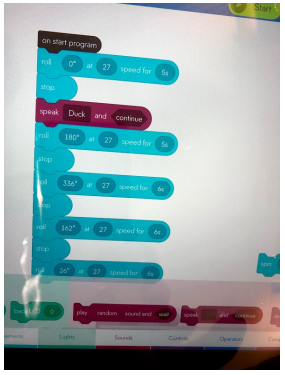
- Teacher explains how the Sphero functions. Shows the students tutorial video from the EARLY homepage. https://edurobots.eu/category/tutorial-theme/group-exercise/. It´s important to demonstrate well how the degrees and speed works and how to adjust Sphero depending on which way it is supposed to go.
- Students get an Ipad and connect it to a Sphero ball as demonstrated in the tutorial video.
- Now students have to map the way Sphero has to move and while they do that they have to think in degrees, speed and time.
- Students follow certain instructions from the teacher about what the Sphero is supposed to collect on its way. It can be anything from individual letters in a short word or single words that make short sentences. It can be moving between pictures placed on the floor. The sky is the limit.




- The stations, are set up in 1-2 meters from the start point. The cards are lined up in front of the Sphero. It is important to have in mind that Sphero has to travel in all directions. Students have to plan the route, one card at a time, collect and drop of at the start point or the whole collection in one way. If the stations are three the Sphero can either move from start to station 1 and back which will make the Sphero move six routes. Also the Sphero can move from start and between all the stations and then return to start or 4 routes.

- Time to begin. Students have to program the Sphero, decide which way it is supposed to go and they have to keep in mind time and speed for each direction they make. It is likely students have to make many attempts before they get it right. It is highly unlikely that they will be successful the first time around. Practice and be patient.
- When students have got the hang of it, this assignment is going to be fun. To make it exciting students can compete with each other who will be the first one to get all the cards first.
- This assignment is easy to adjust to all students depending on their skills.





When the assignment is done it is good to let students themselves evaluate the lesson.

- What did you learn today?
- What was difficult?
- What was easy?