

Duo project 1

Summary: The main activity of the code program is for the pupils to design and code a game in pairs. Here, they will use all the skills they have learned throughout the other activities, to create something original. They will need to think like a designer, solve problems with code, work together, present their work and so on.

This activity is divided into three phases: ideation, creation and presentation. Every phase is just as important as the other two. In the ideation phase, pupils will brainstorm about what kind of game they want to make and what coding elements they will need. In the creation phase, they will use Scratch to code their game and solve many problems (bugs) they encounter on the way. Last but not least: they will show their game to their peers and give a short presentation. The activity as a whole is focused on creative work, positive feedback and experiencing success.

Timeframe: three times 60 minutes

Learning outcomes:

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|----------------------------------------|------------------------------------------|
| 1.1 Algorithms | 2.6 Information: collection & management |
| 1.2 Sequences | 3.1 Working together |
| 1.3 Repetition and loops | 3.2 Negotiation practices |
| 1.4 Events and selection | 3.3 Describing thought processes |
| 1.5 Parallelism | 3.4 Learning from vicarious experiences |
| 1.6 Conditionals and logical operators | 4.1 Combination |
| 1.7 Mathematical operators | 4.2 Exploration |
| 1.8 Variables and data management | 4.3 Transformation |
| 1.9 Functions | 5.1 Problem identification |
| 2.1 Incremental & iterative work | 5.2 ideation and brainstorming |
| 2.2 Testing and debugging | 5.3 Implementation |
| 2.3 Reusing and Remixing | 5.4 Evaluation & reflection |
| 2.4 Abstraction | 5.5 Iteration |
| 2.5 Modularization | |

Duo Project: Ideation

The ideation phase of this activity starts off with a class discussion on video games. Take a whiteboard and marker to write down the main points of the discussion, such as game genres and the different elements of a good game.

You can use the questions below, or create your own:

- What games do you like to play? Why are those fun?
- What makes your favourite game so amazing?
- What elements make or break a game?

- How many different kinds of games can you name? What genres are there?

After the general class discussion, it is time to divide the pupils into pairs. You can choose to (1) assign pairs yourself or (2) have them pair up according to interest.

One method to pair up the pupils by interest, is by hanging up sheets with on each a different genre or theme of games on them across the classroom. Pupils take position next to the genre or theme they want to work on. Then, they form pairs within their genre or theme.

Once the pupils are paired up, hand them each a copy of Worksheet 3: Brainstorming. They will fill in the different questions from 1 to 7. The last step is thinking of a name for the game. The pupils will brainstorm on the theme of their game, what kind of character will be the protagonist, how you can win the game, what actions can be taken and so on.

Encourage them to also make a rough drawing of what the game will look like on the back of the brainstorming sheet.

Duo Project: Creation

The pupils will then start to create the game they have mapped out. They will apply all the concepts and coding tricks they learnt in the previous activities, to make something of their own. Keep the Starter Cards closeby, in case anyone gets stuck and needs to look up a certain type of code.