

Programming a choreography



Programming Choreography game is a game in which children will have to program with cards the movement of another team through different types of actions. Children learn more about the world of technology and game programming, without using any real devices. Performing a choreography they are encouraged to do a physical activity and practice coordination skills. Self-expression is encouraged to boost children's imagination and creativity.

Printable resources attached: Choreography blocks cards (based on Scratch)

Onboarding - Welcome to the Unplugged Universe



Total duration: 30 min.



Learning objectives



Mobilising digital tools, computer logics



Acquiring methods and tools through physical exercise and sport



Identifying oneself in space and time



Developing my motor skills and learning to express myself using my body

Game modalities

7-12 years old

Work in group

In the classroom

At home

Read



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Pedagogical interest and topics targeted

Approach programming: In the future, it is just as important to be able to program as to be able to speak a language, because our society becomes more automated and digitized. Programming teaches children to learn skills they can use when they are adults. Skills, which children learn from programming are:

- Creative and logical thinking
- Spatial awareness
- Problem-solving ability
- Structuring
- Collaboration

Active methodologies: The game uses an active methodology where kids are set in the centre of their learning process. They become active learners taking an active role, being able to investigate, collaborate, discuss, create, and perform.

In this game, students collaborate and investigate Scratch blocks in order to gather a set of blocks for creating their own choreographies. After that, they decode other groups' blocks in order to check if they are able to perform it.

Game-based learning: To learn creative programming children will face the challenge to combat in winning the dance competition. They will be asked to do the choreography corresponding to the cards given.

Applying game-based learning and introducing game dynamics children learn programming by being challenged to perform a choreography.

Constructivism theory: The programming a choreography game introduces students to the basics of Scratch through models of programming blocks illustrated on cards. Children get to know block programming and build a logical mindset.

Teachers should check the prior knowledge of students and introduce every code explaining the cards and showing the actions in order to connect with their prior knowledge. Little by little new concepts with which students are going to work are introduced. Children review the materials and create a set of blocks. The teacher will be the facilitator to help them construct their own knowledge.

Interdisciplinarity: technology and sport: Learning by moving. This entails learning programming by dancing to reach higher memorization and retention of knowledge and improved well-being. Very often learning is related to controversial emotions: from content and curiosity in subject matters to anxiety and stress from exams, failure, etc. Dancing and body movement contribute to expressing emotions and ideally to capturing and transforming negative emotions: its playfulness change students' perception of the learning process where there is no judgment, wrong answer or failure. Enabling the expression of emotion thus has a substantial influence on the cognitive processes in children, including perception, attention, learning, memory, reasoning, and problem-solving.



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Game rules

Game narrative:

Scratch choreography:

Let's learn to program without using a computer! In this game, we will play a choreography based on the coding game 'Scratch'. Scratch is a computer program that allows children to create digital stories, games and animations. The goal is to get to know to program and foster active methodologies, as children create their own set of blocks in order to code a choreography. The material represents the blocks which are used in 'Scratch'. These blocks will be provided to the children (game material sheet below) within one set of these printed materials per group.

Children in class will be divided into teams of 4-5 students. The first one will have to provide a sequence of cards and blocks that the other team needs to reproduce in dancing. The team which follows the most accurate choreography corresponding to the cards and blocks wins the competition.

Game rules:

- The class is divided into groups. Four players per group are ideal.
- Cards are given to each group.
- Each group creates a sequence of blocks with the cards they have available.
- Groups perform the sequences for the other group.
- The group that is more accurate wins.

Role of the teacher and game organisation:

- Introduces the basics of Scratch programming blocks.
- Explains the rules.
- Provides the cards to each group.
- Help them in case they need it.
- Ensures fair play, provides advice and resolves conflicts, where necessary.



Programming a choreography



Game rounds

Round 1

Children play the 'Program your choreography' in **groups of four players**. The teacher provides each group with **a set of cards**.

Each group uses their given cards to **gather and set the blocks to program a choreography**. Once groups have prepared their sequence with the cards, they exchange it with the other groups to **reproduce their choreography by dancing**. Groups have some minutes for discussing their approach and rehearse and then they perform their dance choreography in front of the class.

The players need to **decode and understand the sequence of blocks and then apply it in a real-life context** by moving their bodies. After every group's performance, students and the teacher **assess the accuracy of the dance in accordance with the sequence given**. The game is over **when all the groups play their choreography**. The group that plays the most accurate dance will win the game.

Round 2

The second round focuses on **designing new cards with blocks to enhance children's imagination and creativity**. They will program and play as many steps or choreographies as they want. They will have some minutes to prepare it. Finally, they will show other students their new blocks created and will perform the choreography.

As a final step, children may **discuss together how their physical activity could contribute also to energy production to activate a computer**, for example. Digital devices and applications may be used to **record the level of energy produced** or teachers may decide to stay unplugged and demonstrate energy production through movement by lightening a hand-powered torch or a dynamo of a bike.

Additional activities may be having a discussion about kinesthetic intelligence, a healthy lifestyle and the importance of movement.



Going further



Topic 1 - Approach programming

To further practice unplugged programming you may wish to refer to:

- Other Unplugged quests, among which: ***Binary Counting, Brain Twister, Peace Magic Grid, Memory, etc.***
- Scratch Jr (for young children from 5 to 7 years): <https://www.scratchjr.org/>
- Scratch (for children from 8 to 18 years): <https://scratch.mit.edu/>
- Tutorials for kids: <https://www.youtube.com/watch?v=svC8TGqPHhE>, <https://www.youtube.com/watch?v=tJNzdLChCe8>
- Code.org: <https://code.org/>
- Kodable: <https://www.kodable.com/>



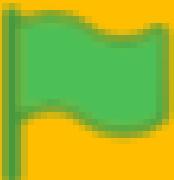
Topic 2 - Interdisciplinarity

- Learning by moving and dancing: www.gonoodle.com.
- Learn about clean energy: <https://energync.org/forkids/>
- More ideas about movement games: <https://earlyimpactlearning.com/mindful-movement-for-kids-14-games-tips/>
- Learn about kinesthetic intelligence: <https://study.com/learn/lesson/kinesthetic-intelligence-skills.html>



Printables



when  clicked

forever





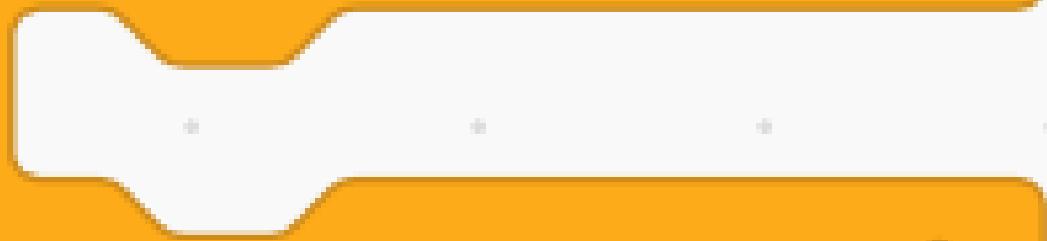
wait seconds

wait seconds

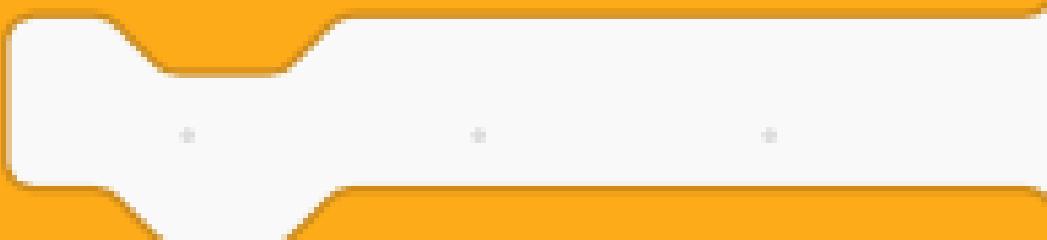
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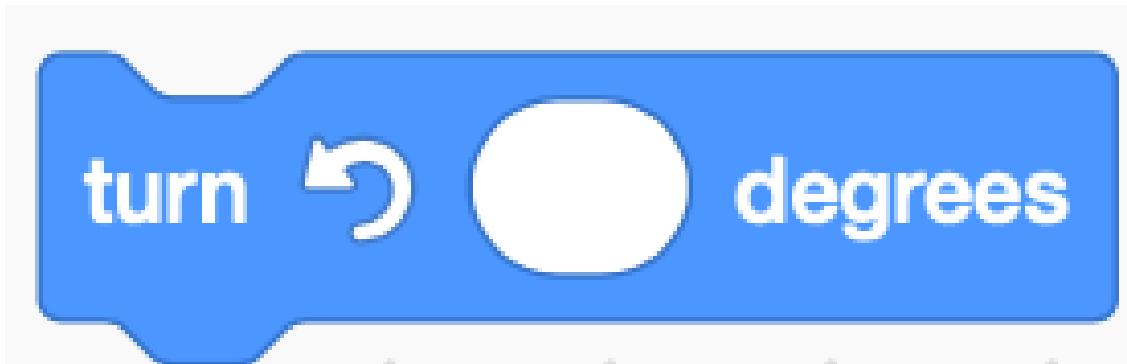
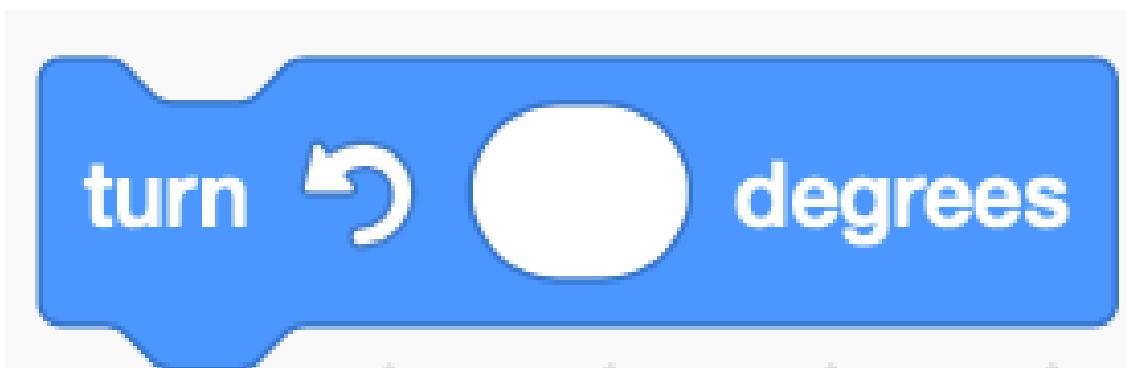
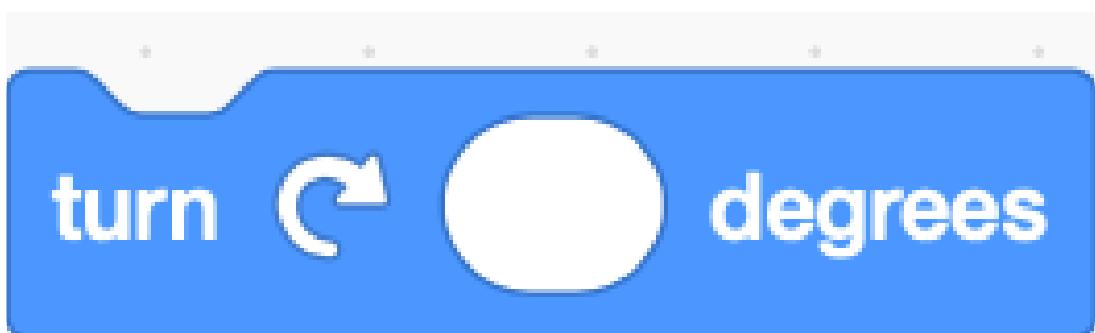
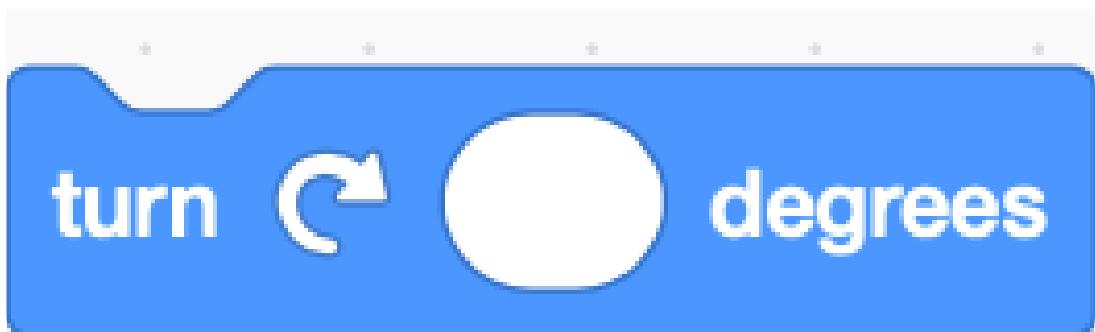


repeat



repeat







move

steps

move

steps

go to

random position



go to

random position





stop all sounds

change volume by

start sound

pop

play sound

pop

until done



when green flag clicked

forever

wait () seconds

repeat ()

turn () degrees

turn () degrees

move () steps

go to random position

stop all sounds

change volume by ()

start sound () pop

play sound () pop until done