



and the story

THE PLANET OF FIRE



- **Teaching unit 1: The red (first steps)**
- Teaching unit 2: The blue (deepening)
- Teaching unit 3: The planet of fire (3D design and printing)

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TEACHING UNIT 1: THE RED PLANET



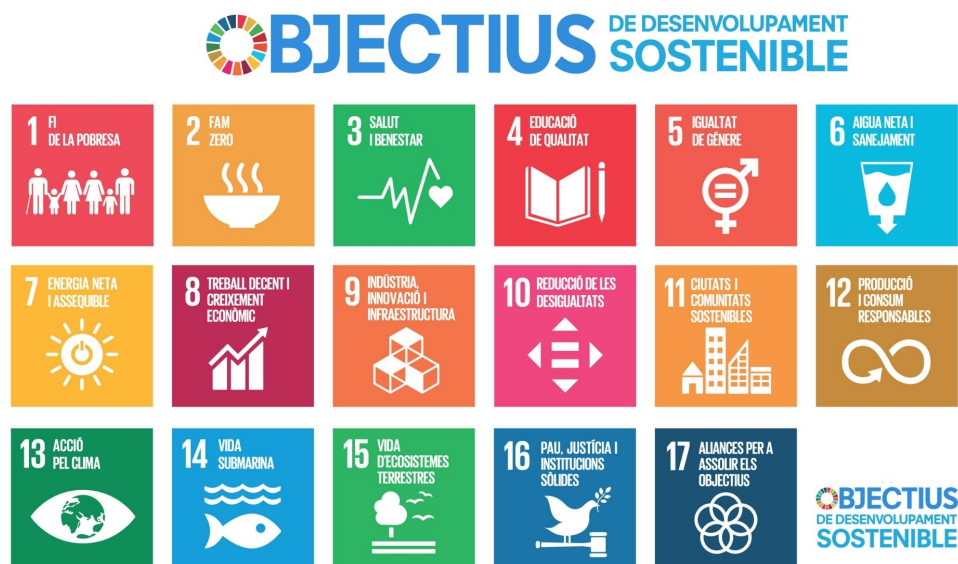
Introduction

All the activities proposed in this teaching unit of **Scratch Jr Tactile** are born from the magic of the story **The Planet of Fire** written by Martí Olivella. A book full of reality and metaphors that, although it seems to be written for children, makes both the youngest and the oldest think.

Reading **The Planet of Fire** makes us reflect, challenges us and invites us to ask ourselves in-depth.

The union of conscious reading, the inclusive approach, computational thinking and the ODS (Sustainable Development Goals of the UN) that is proposed with **Scratch Jr Tactile**, is a multidisciplinary proposal that can be easily incorporated into the educational practice of schools, institutes and other environments and which aligns with the vectors proposed in the new educational curriculum.

This proposal will allow students not only to develop the academic skills necessary to move in today's world, but will also help to generate a culture of peace, solidarity, empathy and respect for others and the environment.



In this Didactic Unit the following ODS are worked on:

- Planet:
 - ODS 13: Action for the climate
 - ODS 15: Life ecosystems terrestrial



Recommended ages

For 4 years.

Objectives

With this unit, numerous topics of debate are opened that will allow students to reflect on the consequences that the burning of forests would bring for people, animals and the planet, the benefits of the terrestrial ecosystem and the importance of maintaining forests alive and well

On the other hand, the first concepts of computational thinking are introduced such as algorithms, patterns, sequence, etc., and creativity is encouraged by proposing the creation of activities with recyclable material.

Methodology

All sessions follow the following steps or phases as a didactic sequence:

- 0. Before starting**
- 1. Explore and arouse interest**
- 2. Imagine, create and play**
- 3. Share and reflect**

Vectors of the new curriculum



ACTIVITY 1: THE FOREST IS BURNING

90 - 120 min

Objectives

- Reflect on the consequences of setting fire to the forest and the importance of preventing forests from burning.
- Perform simple algorithms with the movement blocks.
- Create accessible activities from natural or tactile materials (optional).

In this activity the ODS are worked on:

- Planet:
 - ODS 15: Life ecosystems terrestrial



Materials

- **Scratch Jr Tactile**
 - 1 board
 - 1 character (from the box, or created by the students using the supports for characters)
 - Blocks: flag, arrows movement
 - Obstacles (optional)
- Play dough (optional)
- Recycled material, eva rubber... tactile elements (optional)
- Playground elements such as leaves, bark, etc., to create a forest and experiment with different textures (optional)

Before you start (0)

- Pre-teach your students the vocabulary terms that you think they don't know or that need to be reinforced, such as: ODS, challenge, program, push, robot and words that appear in the story such as pyromaniac, red-hot, scientist, astronomer,...account
- the skills and prior knowledge of all your students.
- Use other lesson options to make this lesson accessible to everyone.

Explore and arouse interest (1)

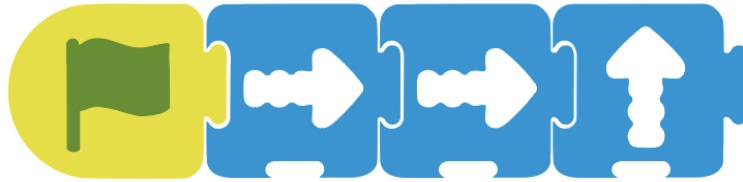
- Read the first part of the story *The Planet of Fire* (the first five pages, up to the paragraph that says "intelligent life on that planet was impossible")
- Ask questions like: What animals live in the forest? Why are forests important? What happens if the forests burn?

- Ask your students to explore the components of the box with their hands and familiarize themselves with them. For students without visual impairments, you can ask them to put on the mask that the box contains and to explore the materials without seeing, trying to recognize the shapes of each of the blocks.

Imagine, create and play (2)

- **Choose the main character:** ask students to choose a main character. They can choose either of the two characters in the kit or create a new one with playdough or other elements, using the character holders inside the box.
- **Startup proposal:**
 - Let's act out what we just read. The main character loves fire and wants to set fire to every tree or leaf he finds, putting the lives of many people, animals and plants that we need to live at risk.
 - Place a blank sheet at the bottom of the board or ask your students to **draw a background** or **create one with tactile** materials (natural materials, recycled elements, plasticine, eva rubber...) so that it is tactile. They can also use yard items like leaves, bark, etc. to create a forest and experiment with different textures.
 - Consider the level of the students.
 - Place the main character anywhere on the board.
 - Place some trees at different points on the board.
 - Explain to students the function of the "green flag" block. It is the first block and is placed at the beginning of any program to start executing it.
- **Objective:**
 - The students will have to create a program with the programming blocks, which will make the character reach the tree and burn it.
 - Once they have managed to get the character to the tree, another group of students has to create another program to light a fire in another part of the park. You can repeat the same several times so that all students can do the activity.

- Example program:



- To increase the difficulty of the activity, you can put obstacles in the way, or add a new board to make a bigger board.
- You can also draw or print new backgrounds.

Share and Reflect (3)

- Bring all students together to share about the challenges they have completed.
- Think again with them about the consequences of burning trees, forests, etc.
- Then reflect on the programming activity:
 - Ask questions like: What is the first thing you did to get to the tree? How can you improve the program? Is there a shorter path for the character to reach the tree?
 - Ask students to discuss and reflect on the process of following instructions.
 - Ask questions like: Why is it important to follow the instructions? What if the steps are messed up?
 - Add words such as algorithm, sequence or pattern to the vocabulary.
 - Ask your students to collect the material from the work areas.

ACTIVITY 2: LET'S START AGAIN

90 - 120 min

Objectives

- Reflect on what we can do to prevent forest fires and remember the importance of preventing forests from burning.
- Perform simple algorithms with the movement blocks.
- Create accessible activities from natural or tactile materials (optional).

In this activity the ODS are worked on:

- Planet:
 - ODS 13: Climate action
 - ODS 15: Life ecosystems terrestrial



Materials

- **Scratch Jr Tactile**
 - 1 board
 - 1 character (from the box, or created by the students using the supports for characters)
 - Blocks: flag, movement arrows.
 - Obstacles (optional)
- Plasticine (optional)
- Recycled material, eva rubber... tactile elements (optional)
- Yard elements such as leaves, bark, etc., to create a forest and experiment with different textures (optional)

Before you start (0)

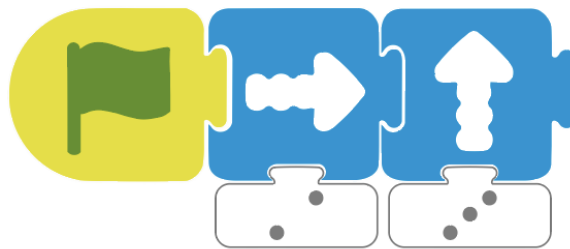
- Remind your students of the vocabulary terms that you think need to be reinforced, such as: SDG, challenge, program, push, robot and words that appear in the story such as catastrophe, arsonist, red-hot, scientist, astronomer,...
- Keep in mind the skills and prior knowledge of all your students.
- Use other lesson options to make this lesson accessible to everyone.

Explore and arouse interest (1)

- Continue reading. (Read the next two pages, up to the paragraph that says "every day there were flames in one place or another")
- Ask questions like: Why is it important that forests don't burn?, Why is it important to plant and care for trees ?

Imagine, create and play (2)

- **Starter proposal:**
 - Let's act out what we just read. The inhabitants of the red planet realized that burning everything was a huge catastrophe and wanted to start over. They wanted to rebuild the houses and plant many trees.
 - It starts from that of the previous activity.
 - Create two groups with the students who have not participated in the previous activity and assign each group the role of constructor or planter.
 - Place two characters anywhere on the board, one of the characters will be the builder and the other the sower.
- **Objective:**
 - The sower students will have to create a program with the programming blocks, which will make the sower reach the burned trees and plant a new tree in its place. The student builders must indicate or draw on the board the points where they want to build a new house and must create a program that makes the builder character arrive at the chosen place and thread the needle to build.
 - Incorporate the "counting" blocks and explain the concept of repetition to your students.
 - Motivate the students to simplify the program by using counter blocks (which are used to repeat "X" times the number of actions in a block)
 - The students can create houses and trees with plasticine or other recyclable materials or from the environment
 - Example program:



- To increase the difficulty of the activity, you can put obstacles in the way, or add a new board to make a bigger board.
- You can also draw or print new backgrounds.
- Students can create a more complete and creative program by incorporating the blocks they already know from the previous activities.

Share and reflect (3)

- Gather all the students to share the challenges they have completed.
- Think again with them about the consequences of burning trees, forests, etc.
- Then reflect on the programming activity:
 - Ask questions like: What is the first thing you did to get to the place where you wanted to plant the tree or build the house? How would you improve the program? Do you think that counter blogs have helped you make a shorter program? Why?
 - Ask students to discuss and reflect on the process of following instructions.
 - Ask questions like: Why is it important to follow the instructions? What if the steps are messed up?
 - Add to the vocabulary words such as algorithm, sequence or pattern, repetition.
- Ask your students to collect the material from the work areas.

ACTIVITY 3: THE FIREFIGHTERS

90 - 120 min

Objectives

- Reflect on the role of firefighters and how they contribute to taking care of the planet and people.
- Perform more complex algorithms by incorporating the "rotate" block.
- Create accessible activities from natural or tactile materials (optional).

In this activity the ODS are worked on:

- Planet:
 - ODS 13: Action for the climate
 - ODS 15: Life ecosystems terrestrial



Materials

- **Scratch Jr Tactile**
 - 1 / 2 boards
 - 2 characters (from the box, or created by the students using the supports for characters)
 - Blocks: green flag, movement arrows, counter blocks, turning block..
 - Obstacles (optional)
- play dough (optional)
- Recycled material, eva rubber... tactile elements (optional)
- Playground elements such as leaves, bark, etc., for create a forest and experiment with different textures (optional)

Before you start (0)

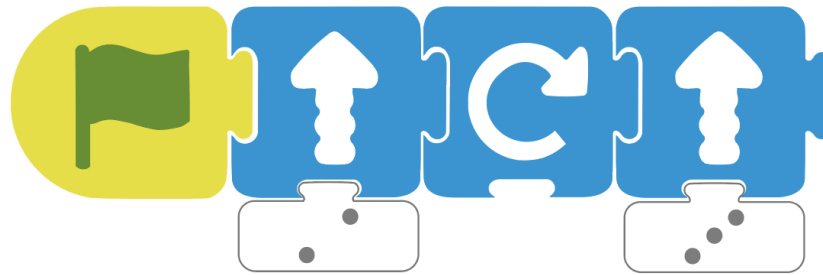
- Reinforce the vocabulary terms you think your students don't yet have mastered.
- Explain to your students what the turn right or left function is (the character simply turns to the indicated side without moving from the spot)
- Explain to your students that using the turn action will only require the movement blocks that indicate the action of going "forward"
- Consider the skills and prior knowledge of all students.
- Use other lesson options to make this lesson accessible to everyone.

Explore and spark interest (1)

- Continue reading (Read the next three pages, up to the paragraph that says "Now the celebration of the fire was to put it out together and with the firemen... what progress")
- Ask questions like: Who are the firemen? Why is your job so important? What other functions do firefighters perform?

Imagine, create and play (2)

- **Starter proposal:**
 - Let's act out what we just read. The inhabitants of the planet of fire realized that although they had improved a little, it was not enough and everything was burnt again, so it occurred to the Pyrenees that some could learn to put out the fire and so it went born what we know today as "Firefighters"
 - It starts from the previous activity.
 - Create two groups with the students. You can start with those who have not yet participated in the previous activities.
 - Place two characters anywhere on the board, one of the characters will be the one who still likes fire and the other will be the firefighter.
- **Objective:**
 - The students who represent the character who likes fire will have to perform a program so that the character reaches a tree planted or a house built in the previous activity and needs fire. When the first fire is lit, the student firefighters must create a program that allows the character to get to where the fire is and put it out.
 - Remember to incorporate the "turn" blocks into the activity.
 - To increase the difficulty, you can place an object representing water anywhere on the board. Ask the students who belong to the group of firefighters that before reaching the burning tree or house they must go to get water to put out the fire.
 - Example program:



- To increase the difficulty of the activity, you can put obstacles in the way, or add a new board to make a bigger board.
- You can also draw or print new backgrounds.
- Students can create a more complex and creative program by incorporating the blocks they already know from the previous activities.

Share and Reflect (3)

- Bring all students together to share about the challenges they have completed.
- Reflect with them again on the consequences of burning trees and forests, on the importance of firefighters and begin to reflect on prevention.
- Then reflect on the programming activity:
 - Ask questions like: What would you do to improve the program? What did you think was more complicated?
 - Ask students to discuss and reflect on the process of following instructions.
 - Reinforce vocabulary: algorithm, sequence or pattern
- Ask your students to collect the material from the work areas.

ACTIVITY 4: ATTENTION AND PREVENTION

90 - 120 min

Objectives

- Reflect on how a fire can originate and how it can be prevented
- Make more complex algorithms incorporating the "Repeat forever" block.
- Create accessible activities from natural or tactile materials (optional).

In this activity the ODS are worked on:

- Planet:
 - ODS 13: Action for the climate
 - ODS 15: Life ecosystems terrestrial



Materials

- **Scratch Jr Tactile**
 - 1 / 2 boards
 - 2 characters (from the box, or created by the students using the supports for characters)
 - Blocks: green flag, movement arrows, counter blocks, spin block, "repeat forever" block
 - Obstacles (optional)
- Play dough (optional)
- Recycled material, eva rubber... tactile elements (optional)
- Playground elements like leaves, bark , etc., to create a forest and experiment with different textures (optional)

Before you start (0)

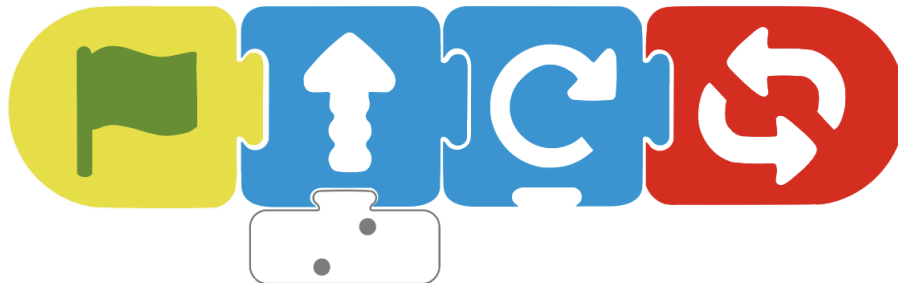
- Reinforce vocabulary terms you think your students don't yet have mastered.
- Explain to the students what the "Repeat forever" function consists of and incorporate the term "Loop" into the vocabulary.
- Take into account the skills and prior knowledge of all your students.
- Use other lesson options to make this lesson accessible to everyone.

Explore and arouse interest (1)

- Continue reading. (Read the last pages of the red planet)
- Ask questions like: What does the word prevention mean? Why is it important to prevent a fire?

Imagine, create and play (2)

- **Starter proposal:**
 - Let's act out what we just read. The inhabitants of the red planet have already learned to put out a fire, but it is still not enough to live peacefully. They know something more needs to be done, so they decide to create a fire prevention group. A great idea from Blanca Fumata!!!
 - It starts from the previous activity.
 - Create a group with the students. You can start with those who have not yet participated in the previous activities.
 - Place objects representing houses and forests on the board so that they draw a square.
- **Objective:**
 - The students will have to carry out a program that allows the main character to go through the entire square delimited by houses and forest. This program must be repeated forever. In this way, the inhabitants of the village can now sleep peacefully, the houses and the forests are constantly monitored.
- Example program:



- To increase the difficulty of the activity, you can put obstacles in the way, or add a new board to make a bigger board.
- You can also draw or print new backgrounds.
- Students can create a more complex and creative program incorporating the blocks they already know from the previous activities.

Share And reflect (3)

- Gather all the students to share the challenges they have completed.
- Think again with them about the consequences of burning trees, forests, firemen and start thinking about prevention.
- Then reflect on the programming activity:
 - Ask questions like: What would you do to improve the program? What did you think was more complicated?
 - Ask the students to discuss and reflect on the process of following instructions.
 - Reinforces vocabulary: algorithm, sequence or pattern, loop, etc.
 - Ask your students to collect the material from the work areas.

TO GO FURTHER... OPEN A WINDOW TO THE WORLD!

To achieve transversal and meaningful learning for students, it is vitally important to make them interact with the world around them and to connect classroom learning with the real world. **Scratch Jr Tactile** can open a small window to the world. Once the story activities are completed, consolidate and connect learning by leaving the classroom and interacting with the world. For example, you can do one of these activities:

- **Day to plant trees:** together with the students, organize a day to plant trees. You can involve the whole educational community, parents and even the neighbours. Motivate your students to explain what they have learned during the activities of the didactic unit "The Red Planet".
- **Prevention and protection of forests and birds:** create with your students devices to protect the trees and birds that live in the school, such as a bird feeder or an irrigation device. Use recyclable material and share the experience on the school blog or on social networks to include the entire educational community.
- **Little Reporters at the Fire Station:** Ask your students "What would you ask a firefighter if you had the chance to interview him?". Collect everyone's ideas and ask them to select the most interesting ones. Organize a visit to a nearby fire station, divide the students into groups and assign them different roles taking into account the diversity of the students: reporters, cameras, management, etc. Share the experience with the community through a video you can make with the students. You can share it on the school blog or on social networks.