



and the story

# THE PLANET OF FIRE



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

# DIDACTIC UNIT 3: THE PLANET OF FIRE



# Index

<b>Introduction</b>	<b>4</b>
Recommended ages	5
Objectives	5
Methodology	5
Vectors of the new curriculum	6
<b>TINKERCAD</b>	<b>7</b>
<b>: WE CREATE AND DESIGN A NEW ACTIVITY FOR THE PLANET WITH!</b>	<b>2</b>
<b>WITH!</b>	<b>12</b>

## Introduction

All the proposed activities 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 reflect.

Reading **the Planet of Fire** makes us reflect, questions us and invites us to question ourselves in depth.

The union of conscious reading, the inclusive approach, computational thinking, 3D printing (or the use of other technologies) and the SDGs (UN Sustainable Development Goals) that is proposed with **Scratch Jr. Tactile**, is a proposal multidisciplinary that can be easily incorporated into the educational practice of educational centers and other environments.

This proposal will allow students not only to develop 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 for the environment.



In this didactic unit the SDGs are worked on:

- Planet:
  - SDG 13: Climate action
  - SDG 15: Life on land ecosystems



- Global alliances and peace:
  - SDG 16: Peace, justice and solid institutions
  - SDG 17: Alliance for the objectives



## Recommended ages

Starting of 10 years

## Objectives

This unit opens up numerous topics for debate that will allow students to reflect on the importance of preserving terrestrial ecosystems, non-violent actions, the consequences of war, work for peace and how to contribute from the environment to meet the sustainable development goals.

On the other hand, the first concepts of design and 3D printing with tinkercad are introduced.

## Methodology

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

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

## Vectors of the new curriculum



# ACTIVITY 1: WE DESIGN 3D CHARACTERS AND OBJECTS WITH

TINKER - 120 min

## Objectives

- Reflect , based on the story, about the importance of preserving terrestrial ecosystems, non-violent actions, the consequences of war, work for peace and how to contribute from our local environment to meet the Sustainable Development Goals.
- Learn and apply the basic principles of 3D design
- 3D print the created designs (optional).

This activity works on the SDGs:

- Planet:
  - SDG 13: Climate action
  - SDG 15: Life on Earth
- Global alliances and peace:
  - SDG 16: Peace, justice and strong institutions
  - SDG 17: Alliance for the objectives



## Materials

- **Scratch Jr. Tactile**
- Didactic units the red planet and the blue planet (to be able to create new characters and elements that can be used in the activities proposed in the didactic units the red planet and the blue planet) Tale
- The planet of fire
- Computer
- printer (optional)
- Material for print PLAN (biodegradable) (optional)

## Before you start (0)

- Take into account the previous skills and knowledge of all your students.
- Consider other options for carrying out the lesson so that it is accessible to everyone.

### Explore and arouse interest (1)

- Ask your students to read the story of the planet of fire and the didactic units of the red planet and the blue planet. You can assign one of the activities of the didactic units that is different in each group.
- It shows the Tinkercad environment and explains the basic principles of 3D design.

### Imagine, Create and Play (2)

- Divide students into teams. Try to make the teams as diverse as possible.
- **Objective:**
  - Each group must design trees, houses, characters or other objects that can be used in the activities of the red planet and the blue planet didactic unit.
  - Accessibility must be considered when making designs. (Example: simple and easily recognizable icons, reliefs, if the figures have two or more colors, they must have contrast so that people with severe visual impairment can distinguish the shapes, etc.).
  - If possible, ask each group to 3D print one or more of the designs they have designed. If you do not have a 3D printer at school, you can request it from a nearby maker or FabLab space or order the printing from a 3D printing farm.

### Share and reflect (3)

- Gather all the students to share the designs they have made. Students can improve their designs based on feedback received from their peers.
- Encourage students to share their designs on the web [www.scratchjrtactile.org](http://www.scratchjrtactile.org).community **Scratch Jr. Tactile** so that they can be used by students and teachers from other schools, countries or communities. Tell them to include the name of the students who created it, the population and the institute to which they belong.
- Finally, reflect together on the process.



## ACTIVITY 2: WE CREATE AND DESIGN A NEW ACTIVITY FOR THE PLANET OF FIRE

90 - 120 min

### Objectives

- Reflect, based on the story, on the importance of preserving terrestrial ecosystems, non-violent actions, the consequences of war, work for peace, how to contribute from our environment to meet the objectives of sustainable development.
- Develop the creativity of applied students when creating new activities.
- Learn and apply the basic principles of design and 3D printing.

This activity works on the SDGs:

- Planet:

- SDG 13: Climate action
- SDG 15: Life on Earth



- Global alliances and peace:

- SDG 16: Peace, justice and strong institutions
- SDG 17: Alliance for the objectives



### Materials

- **Scratch Jr. Tactile**
- Tale The planet of fire
- Computer
- printer 3D
- Material to print PLA (biodegradable) (optional)
- Laser cutter (optional)
- Material to cut in laser: laminated wood, plywood or DM (optional)
- Other recyclable materials

### Before you start (0)

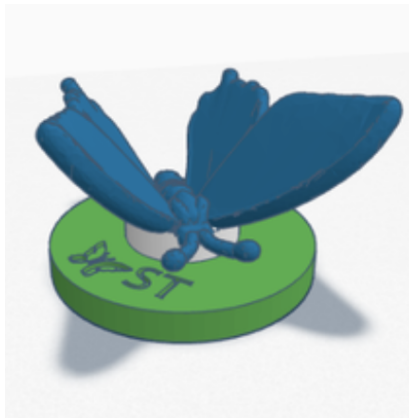
- Take into account the skills and previous knowledge of your students
- Consider other options to carry out the lesson so that it is accessible to everyone.

### Explore and arouse interest (1)

- Ask your students to read the story of the planet of fire and the didactic units the red planet and the blue planet. You can assign one of the activities of the didactic units that is different in each group.
- Explore the tinkercad environment and reinforce the basic concepts of 3D printing or laser cutting that you consider necessary.

### Imagine, Create and Play (2)

- Divide students into teams. Try to make the teams as diverse as possible.
- **Objective:** Each group must design an entire activity that represents the story the planet of fire.
- Each group must write the activity, design the background, the characters, the objects, the obstacles, necessary to carry out the activity.
- must be taken into account **Accessibility** when designing backgrounds and objects (Example: simple and easily recognizable icons, reliefs, if the figures have two or more colors, they must have contrast so that people with severe visual impairment can distinguish shapes, etc.
- They can use 3D designs for a 3D printer or 2D designs for a laser cutter
- If possible, ask each group to 3D print one or more of the designs they have created If a printer is not available at school 3D can request it from a nearby maker space or FabLab or order the printing from a 3D printing farm. Then
- , you can paint the objects you have printed to give them color (remember that when incorporating two or more colors they must have contrast, so that people with severe visual impairment can understand the shapes)(optional).



### Share and reflect (3)

- Gather all the students to share the designs they have made. Students can improve their designs based on the comments received by their peers.
- Encourage students to share their created designs on the web [www.scratchjrtactile.org](http://www.scratchjrtactile.org).community **Scratch Jr. Tactile** so that they can be used by students and teachers from other schools, countries or communities. Tell them to include the name of the students who created it, the population and the institute to which they belong.
- Finally, reflect together on the process.

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

To achieve transversal and meaningful learning for students, it is vitally important to make them interact with the world around them and connect classroom learning with the real world. With **Scratch Jr. Tactile** you can open a small window to the world: once the activities are finished, consolidate and connect the learning by leaving the classroom and interacting with the world.

For example, you can organize one of the following activities:

- **Visit a Maker Space or Fab Lab.** Organize with your students a visit to a maker or digital manufacturing space. You will be able to learn how the different manufacturing machinery works, what projects can be carried out and use them to manufacture your own designs that you have created in this didactic unit.