

CODING FOR CLIMATE

LEGO Fortnite Playbook



Welcome to Coding for Climate

We are thrilled to welcome you and your class to the Coding for Climate Global Challenge! Over the next few weeks, you will join classrooms from around the world to take action on climate change. Classrooms will be introduced to computer science foundations then will use skills of problem-solving, computational thinking, creativity, and digital literacy to create solutions for our planet.

Overview

- Brought to you by Take Action Global and EarthDay.org
- 3-6 week project (flexibility for holidays, school schedules, and testing)
- all ages, all content areas
- free, open to all
- 3 phases of action to be completed from March 11 - April 22



Primary Resources

Website: www.coding4climate.org
Hashtag: #Coding4Climate

Supporting Resources

TAG website: www.takeactionglobal.org
EarthProject App: www.earthproject.org
EDO: www.earthday.org/campaign/climate-environmental-literacy

Find our lesson at Fortnite's server:

<https://dev.epicgames.com/community/learning/tutorials/BJYR/unreal-engine-tackling-climate-change-through-lego-fortnite>

As part of the coding experience in Phase II of the project, students will be able to select their top tool for coding as their coding solution. This playbook is designed to support classrooms, teachers, and students who select to use LEGO Fortnite. Let's jump in!

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LEGO Fortnite as your Tech Tool of Choice

This lesson focuses on climate and sustainability as it introduces students to LEGO Fortnite. As students work together to solve various climate issues such as Biodiversity Loss, Deforestation, Ocean Pollution, Drought and Water Scarcity, as well as Climate Change, students will be introduced to LEGO Fortnite to live in sustainable ways in a virtual world. Students will not be confronted with violence nor weapons.

Objectives

- Understand the impact of climate change locally, nationally, and globally.
- Learn about Climate Mitigation and Adaptation.
- Become familiar with the LEGO Fortnite inventory related to food and buildings.
- Take action in a virtual world to eat in a sustainable way and build climate resilient buildings.



1 Get started

Introduction to climate change

- **Climate change** refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, but since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels (like coal, oil and gas), which produces heat-trapping gasses.
- Source: [United Nations](#)
- There are several **effects** due to climate change. Depending on the country you live in, you may have hurricanes (Florida), wildfires (California, Australia, Portugal), flooding (Sierra Leone, Germany), drought (Greece, Afghanistan, Ethiopia), or rising sea levels (Bangladesh, Haiti, Maldives). As you can see, every continent is affected by climate change.
- Sources: [Iberdrola](#) and [Live science](#)
- Many people are taking action in different ways. Some are going on a strike to call on governments and industry, but we all have an individual responsibility as well. For this, we need to change our behavior. Did you know you can take individual action as well? The solutions can be represented within two main categories: **climate mitigation** and **climate adaptation**.



A/ **Mitigation** of climate change means reducing the impact of climate change on our planet. Example: avoid eating red meat (beef, sheep), avoid transportation by car by using your bike instead, use solar and wind energy, create a garden, reduce waste.



B/ **Adaptation** to climate change means adjusting to the effects of change on our planet. Example: protect forests, protect against floods, drought, and rising sea levels.

C/ Examples at the **intersection** of both categories: water conservation and tree planting.

MITIGATION

SUSTAINABLE
TRANSPORT

CREATING
GARDENS

WASTE
REDUCTION

EMISSION
REDUCTION



ADAPTATION

FOREST
PROTECTION

WATER
CONSERVATION

FLOOD
PROTECTION

CLIMATE
RESILIENT
BUILDINGS

REFORESTATION

PREPARING
FOR SEA
LEVEL RISE



2 Your LEGO Fortnite inventory

Make a table with your LEGO Fortnite inventory: a list of all kinds of items available in LEGO Fortnite which relate to the mitigation and adaptation categories. Make a list of intersection and unrelated items as well. We exclude weapons.

In LEGO Fortnite you can find a cow, chicken, pumpkin, raspberries, corn, water, trees, rocks, and much more. By petting cows and chicken you will get milk and eggs. Those can be transformed to fried eggs, slurp juice, fruit pie and more. Try to categorise all items in the table.

Find a list of food and recipes: https://www.ign.com/wikis/lego-fortnite/Cooking_and_Food_List

Example:

Mitigation	Adaptation
Animals: cow, sheep, chicken Food: pumpkin, egg, strawberry, ... Garden	House Sea Forest
Intersection	Unrelated
Water Trees	Mountains Caves Wolves Spiders Weapons Tnt Glider ...



3. Plan your mission

In a few instances, you will be creating a new Island World in LEGO Fortnite. It will be your mission to take care of three important things:

1. Make sure you are able to eat in a sustainable way.
2. Build an eco-friendly house.
3. Guard your house and yourself against fires, drought, tornadoes, floodings, and a rising sea level.

Time to plan your mission with a list of actions you can take based on your inventory. Add in "Do" and "Don't."

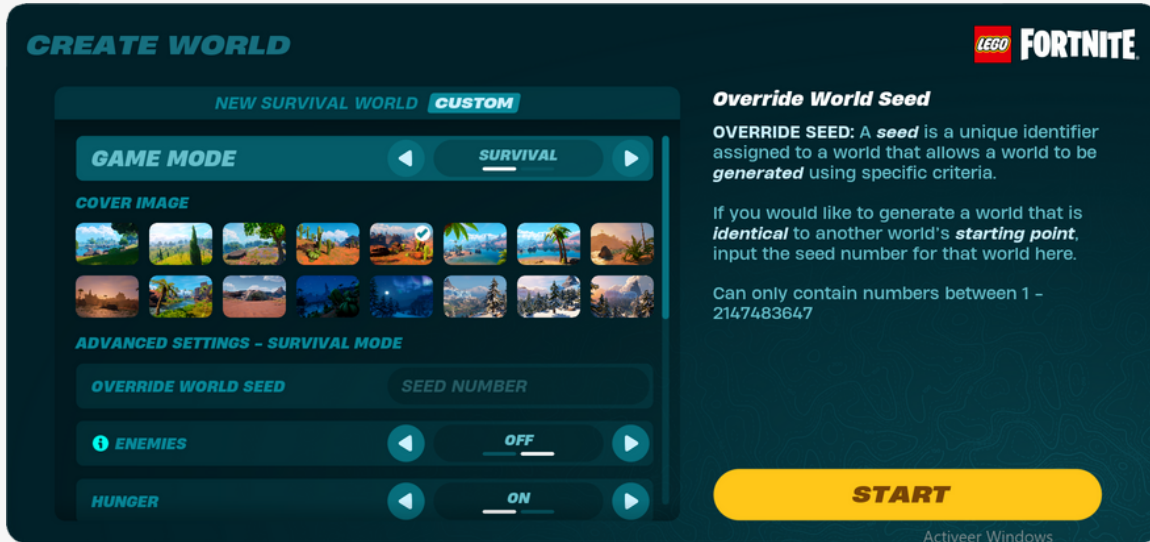
Example:

FOOD (mitigation)	HOUSE (adaptation)	GUARD (adaptation)
Don't eat cow, sheep, chicken Do eat berries, pumpkins and eggs Do create a garden	Don't build the house too close to forest (fires) or sea (rising sea level) Don't cut trees, instead collect stray wood Do build the house with granite and minimal amounts of wood	Do protect your house against floods Do build a tornado-proof house



4. Time for Fortnite!

Go to LEGO Fortnite and create a new Survival World.



Further settings:

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In this world you will not be confronted with hostile creatures, but you will have to eat and drink making sure you are not confronted with hunger, old and heat.



Your mission:

MISSION 1: Make sure you are able to eat in a sustainable way

→ MITIGATION

- Don't eat animals as large amounts of carbon and methane are being emitted by cows, sheep, and chicken
- Grow a garden
- Eat in a sustainable way: corn (on the cob), bread, fruit pie, pumpkin (pie), milk, cheese, snowberry, raspberry



Collect pumpkins



Don't kill cows but pet them to get milk

Gather sustainable materials in your inventory. Don't cut trees but collect stray wood instead.



MISSION 2: Build an eco-friendly house for yourself, your parents, and potential siblings

ADAPTATION

- reduce cutting trees to the minimum, use granite instead
- granite will make your house stronger against tornadoes
- prefer to collect stray wood



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MISSION 3: Guard your house and yourself against fires, drought, tornadoes, floodings, and a rising sea level

- Don't build too close to forests to be safe when there will be fires.
- Don't build too close to the sea, prefer hills to be safe during floods and rising sea levels.
- Find other ways to protect your house against climate change.



**In case you are advanced:
Try to survive for 1 hour in the desert or snowy mountains.**





Always Remember:

Playing LEGO Fortnite is about building, exploring, and having fun while developing computational thinking skills.

Coding for Climate Resources

The Coding for Climate LEGO Fortnite Playbook is part of a collection of resources in the Coding for Climate Global Project. All resources are open access and available for preview and free download at www.coding4climate.org.

K-12 classrooms can participate in the #Coding4Climate project. Free registration is available at www.coding4climate.org.

The Coding for Climate LEGO Fortnite Playbook is authored by the team at Take Action Global independent of LEGO Fortnite or EPIC Games.



LEGO Fortnite Resources

LEGO Fortnite is part of Fortnite, which is freely available for Nintendo Switch, Xbox, Playstation, Windows, Apple, Android and iOS with cloud streaming

Fortnite <https://www.fortnite.com>

EPIC Games Store <https://store.epicgames.com>

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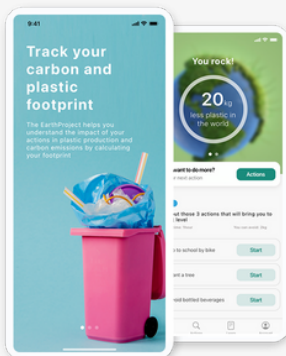


#TakeActionEdu

Take Action Global (TAG) is a leading education non-profit 501(c)3 organization committed to climate education for all and equitable educational learning opportunities for global educators and PreK-grade 12 students. Over five years, TAG has served over 4.8 million students and educators from 160 countries through online learning programs and has supported over 2 million tree plantings.

Take Action Global brings communities together in online spaces for authentic learning experiences, including Climate Action Project, Climate Action Day, and Climate Action Schools.

TAG partners include international experts and world leaders, including the UN, UN Environmental Programme, Earth Day Organization, NASA, LEGO Group, the NYC Mayor's Office, Fridays for Future, the U.S. Department of State, and the Jane Goodall Institute. Event speakers have included Prince William, Dr. Jane Goodall, Rick Davis (Mars Expedition, NASA), and Sir David Attenborough. Learn more: www.takeactionglobal.org.



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Available for iOS and Android.
<https://www.earthproject.org>

