

# Planet Sustainia

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## User Manual

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# Get Started

Welcome to **Planet Sustainia**! This is a game about looking after our planet. You will play six fun minigames, each one teaching you a different way to help the Earth.

## What You Need

To play Planet Sustainia all you need is:

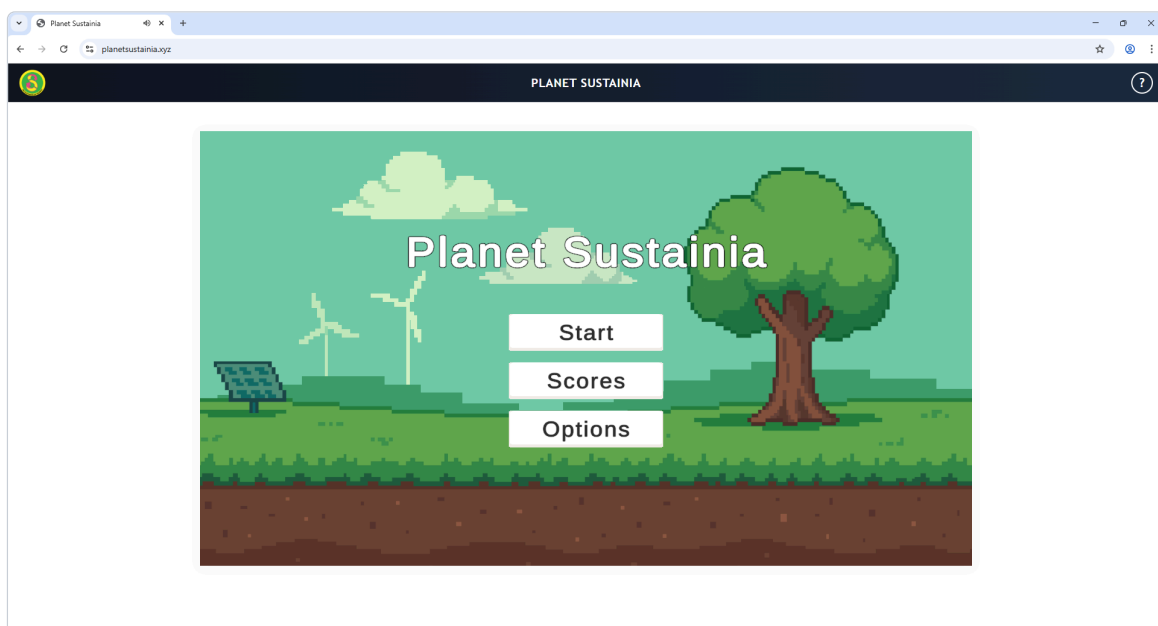
- A **laptop or computer**.
- A **modern web browser** (Chrome, Edge, Firefox or Safari all work).
- The website address: <https://www.planetsustainia.com>.

There is **nothing to install** — just open the link and play.

# The Main Menu

When you first open the game you will land on the **main menu**. There are three buttons:

- **Start** — click this to begin. It will take you to the login screen so you can sign in and play.
- **Leaderboards** — see the **global high scores** for each minigame. This is where you can check how your scores compare to other players.
- **Options** — open the settings. From here you can change the **music volume** and the **sound effects volume** to whatever feels comfortable.



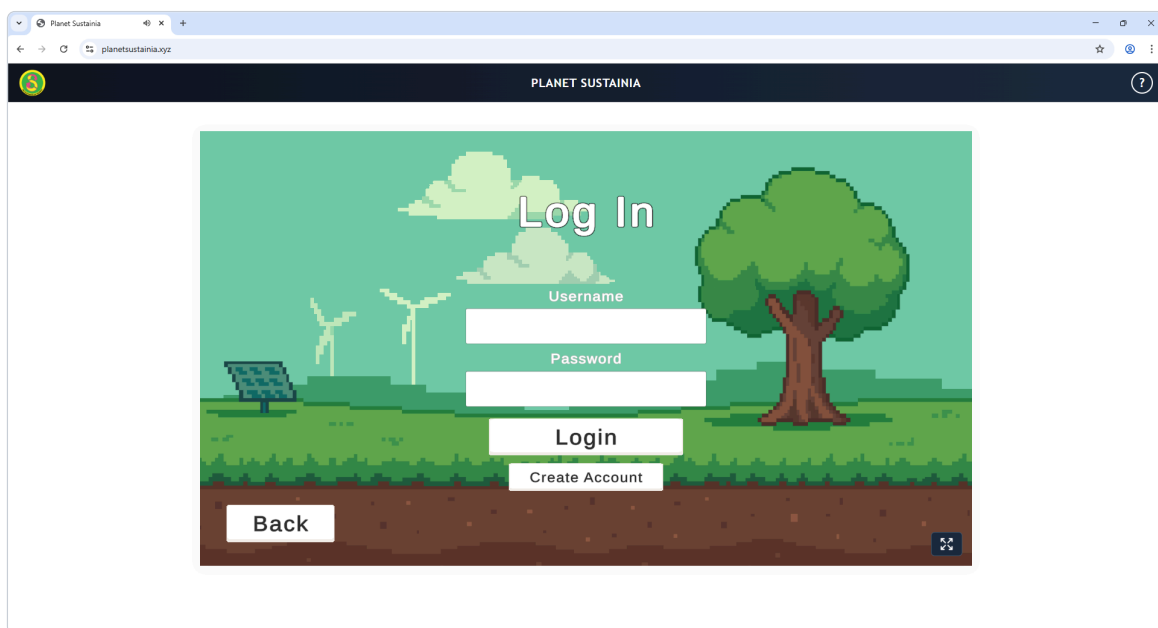
The Planet Sustainia website as a player will first see it.

# Logging In

After you press **Start** you will see the **login screen**.

- If your teacher or parent has given you a **username** and **password**, type them in and press **Login**.
- The screen also has a **Register** button, but **new registrations are temporarily disabled**. This means you cannot make your own account — your teacher or parent will give you one.

After you log in, the game remembers you so your scores are saved.

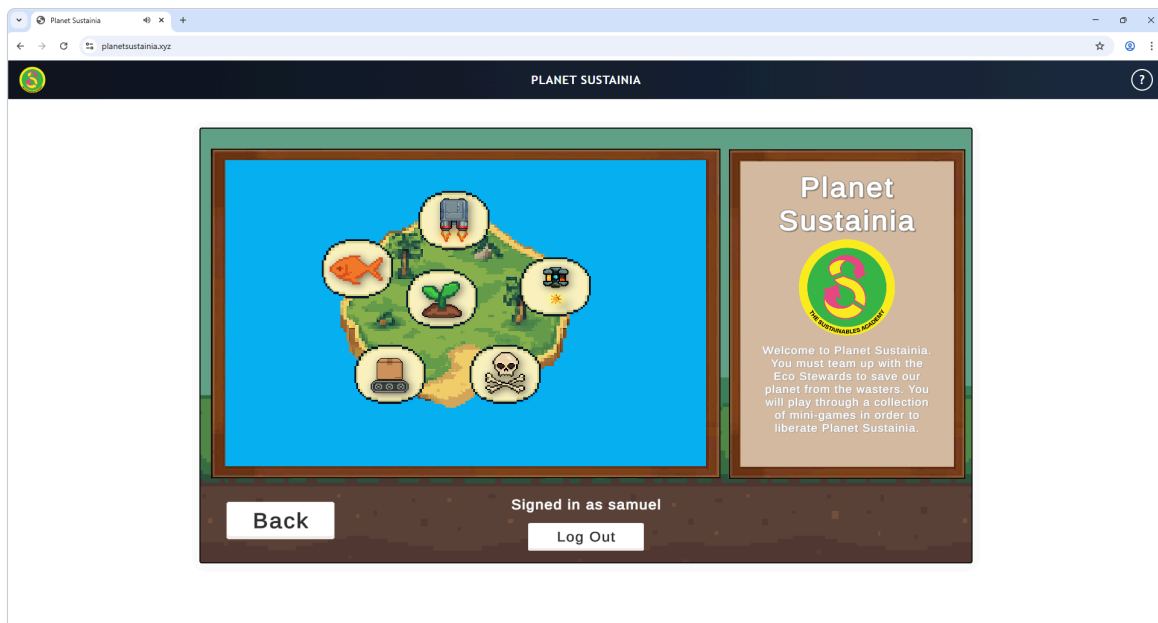


The login screen, with the username and password boxes and the Login button.

# The Minigame Selection Screen

Once you are logged in you will see the **minigame selection screen**. From here you can:

- Pick which of the six minigames you want to play.
- Press the **Logout** button when you are finished.



The minigame selection screen, where you choose which of the six minigames to play.

## Controls You Will Use

Most minigames use the same simple controls. You do not need to learn them all at once — each game will tell you what to do.

- **Arrow keys** or **WASD**: move your character left, right, up and down.
- **Space**: jump.
- **Mouse click**: pick things up, drag them, or hit things.
- **E**: interact (open a shop, fix a pipe, talk to someone).
- **Esc**: pause the game.

# Minigames

Each minigame teaches you one big idea about looking after the planet. You can play them in any order. Try to beat your own high score!

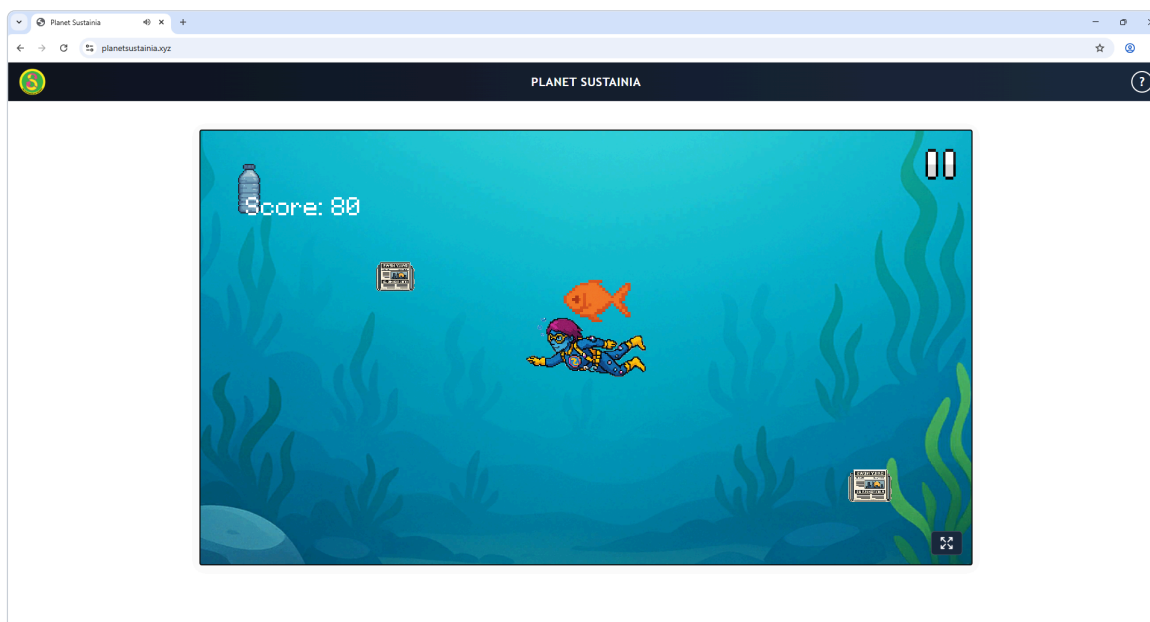
## Shelly's Ocean Cleanup

**Meet Shelly, a climate steward!** Shelly's job is to look after the ocean, and right now the sea is full of rubbish that needs cleaning up.

### How to play:

- Use the **arrow keys** or **WASD** to swim Shelly around the sea.
- Swim into pieces of rubbish (like plastic bottles and bags) to pick them up. Each piece you collect gives you points.
- Watch out for **dangerous things** in the water like sharp objects or jellyfish. If Shelly bumps into one, the game ends.
- Try to collect as much rubbish as you can before you get hit!

**What you learn:** Plastic and litter in the ocean hurt sea animals like turtles and fish. Putting rubbish in the bin instead of dropping it on the beach keeps the ocean clean and safe.



Shelly swimming through the sea, collecting rubbish while avoiding hazards.

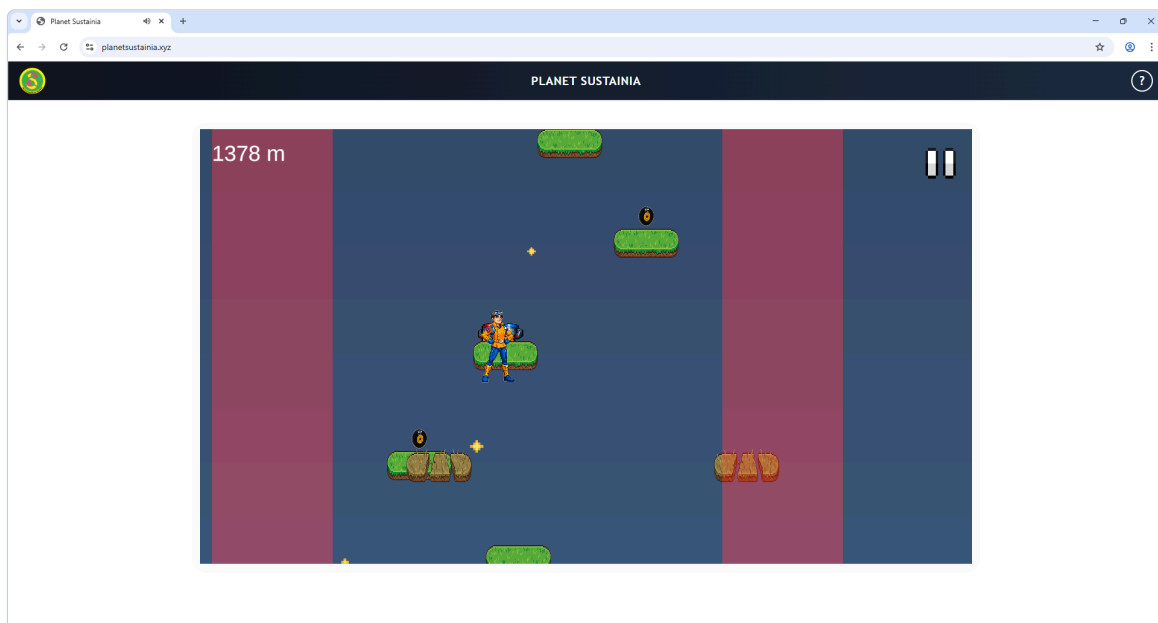
# Carbon Climber

**Climb as high as you can!** In this game you jump from platform to platform, going higher and higher into the sky.

## How to play:

- Use the **left and right arrow keys** (or **A** and **D**) to move sideways. Your character jumps automatically each time it lands on a platform.
- Look out for special helpers:
  - **Springs** — bounce you extra high.
  - **Jetpacks** — fly upwards for a few seconds.
  - **Gravity boots** — help you stick safely to platforms.
- Avoid the bad stuff:
  - **Broken platforms** — they crumble after one jump.
  - **Falling bricks** and **strong winds** — they push you off course.
- If you fall off the bottom of the screen, the game ends. The higher you climb, the higher your score.

**What you learn:** Carbon pollution from cars, planes and factories goes up into the air and warms our planet. Climbing above the smoke is a fun way to remember why we want clean air at the top of the sky.



Carbon Climber in action — jumping between platforms and using boosts to climb higher.

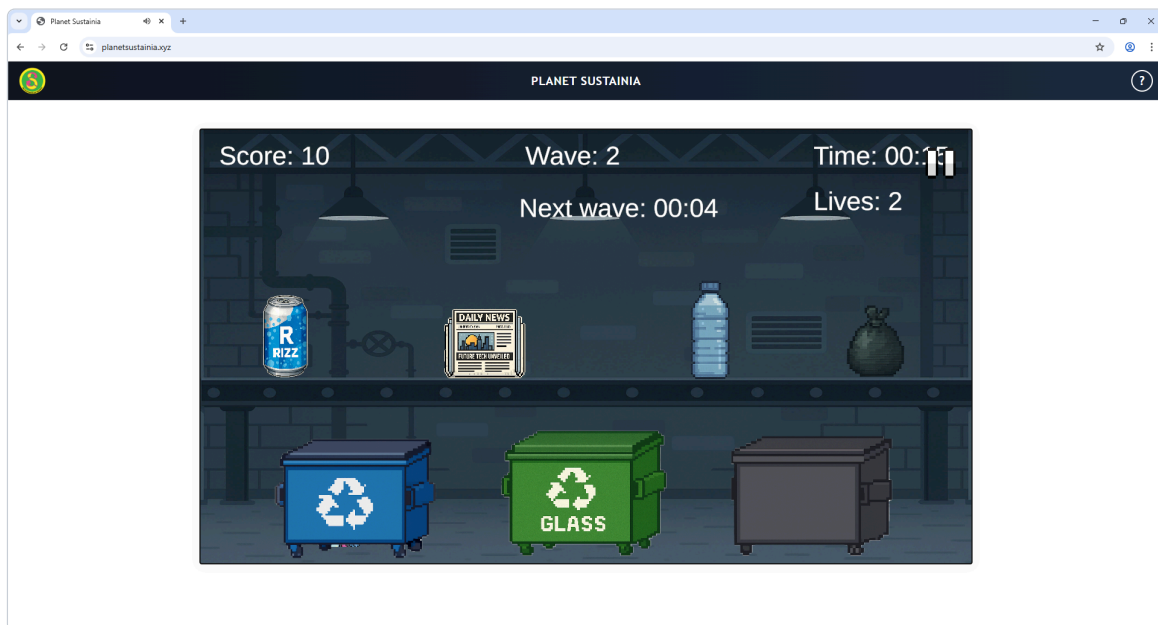
# Recycle Rush

**Be a recycling hero!** Items zoom along a conveyor belt and you have to put them in the right bin before they fall off the end.

## How to play:

- **Click and drag** an item with your mouse onto the bin you think it belongs in:
  - **Blue recycling bin** — for paper, cardboard and clean plastics like bottles and wrappers.
  - **Green glass recycling bin** — for glass jars and bottles only.
  - **Grey waste bin** — for everything else that cannot be recycled, like food scraps and dirty packaging.
- Each correct bin gives you points.
- Putting an item in the **wrong** bin or letting it fall off the end loses you a **life**. You start with **3 lives**.
- The belt gets faster every wave, so think quickly!

**What you learn:** Different kinds of rubbish go in different bins so they can be turned into something new. Sorting your recycling at home helps the planet just like it helps you score points here.



The Recycle Rush conveyor belt, with items to drag into the correct bin.

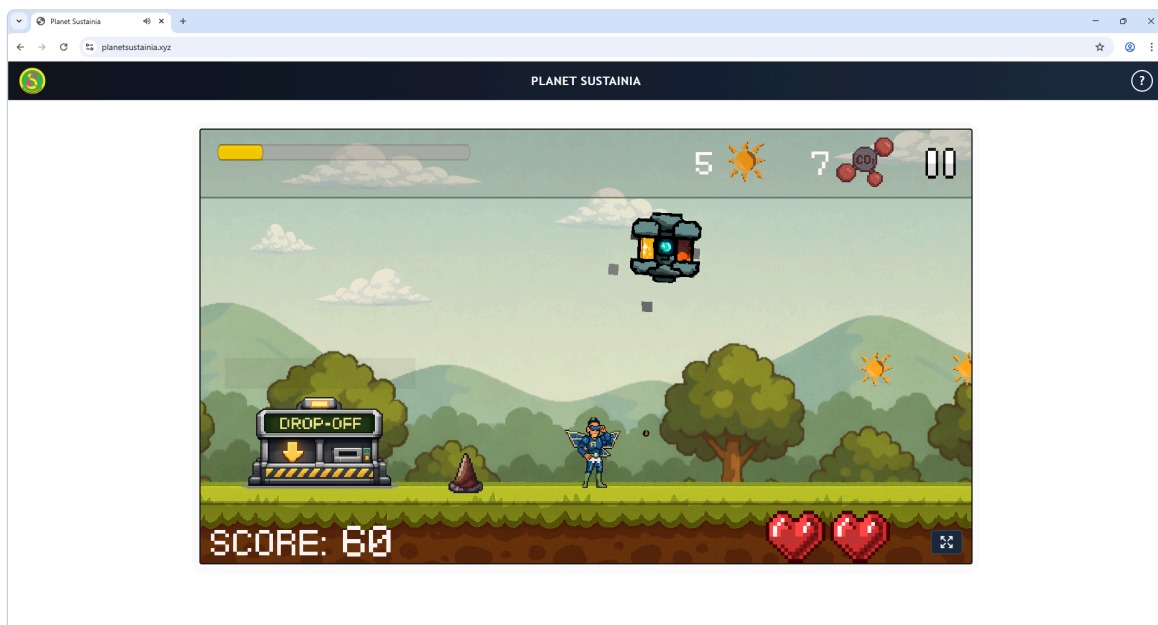
# Solar Surge

**Power up the planet with sunshine — but watch out for spikes!** In Solar Surge you collect clean solar energy and pull harmful carbon out of the air.

## How to play:

- Move around to **collect solar energy** and **carbon atoms** as they appear on the screen.
- Take what you have collected to the **deposit point** to turn it into score. The more you deposit, the higher your score climbs.
- **Dodge the spikes!** Touching a spike will hurt you, so plan your route carefully.

**What you learn:** The sun gives us free, clean energy every day. Capturing carbon and using solar energy means we burn less coal and gas, which keeps the air cleaner and the planet cooler.



Solar Surge gameplay, showing solar energy and carbon pickups, the deposit point and a spike hazard.

# Water Waster Showdown

**The big boss battle!** This is the hardest game. You have to defeat the Water Waster — a sneaky boss that wastes all our water — by fixing leaky pipes and dodging attacks.

## How to play:

- Move with the **arrow keys** or **WASD**.
- Press **Space** to jump.
- Press **Left Shift** to **dash** quickly out of danger.
- Stand next to a **broken pipe** and press **E** to fix it. Every fixed pipe takes health away from the boss.
- Watch the screen for **warning signs** before the boss attacks — move out of the way before the attack lands!
- If you lose all your lives, the game ends. Beat the boss to win!

**What you learn:** Wasting water — by leaving taps running or letting pipes drip — means there is less clean water for everyone. Fixing leaks and turning taps off is something you can do every day at home.



The Water Waster boss fight — fixing a leaky pipe while watching the boss's health bar and attack warnings.

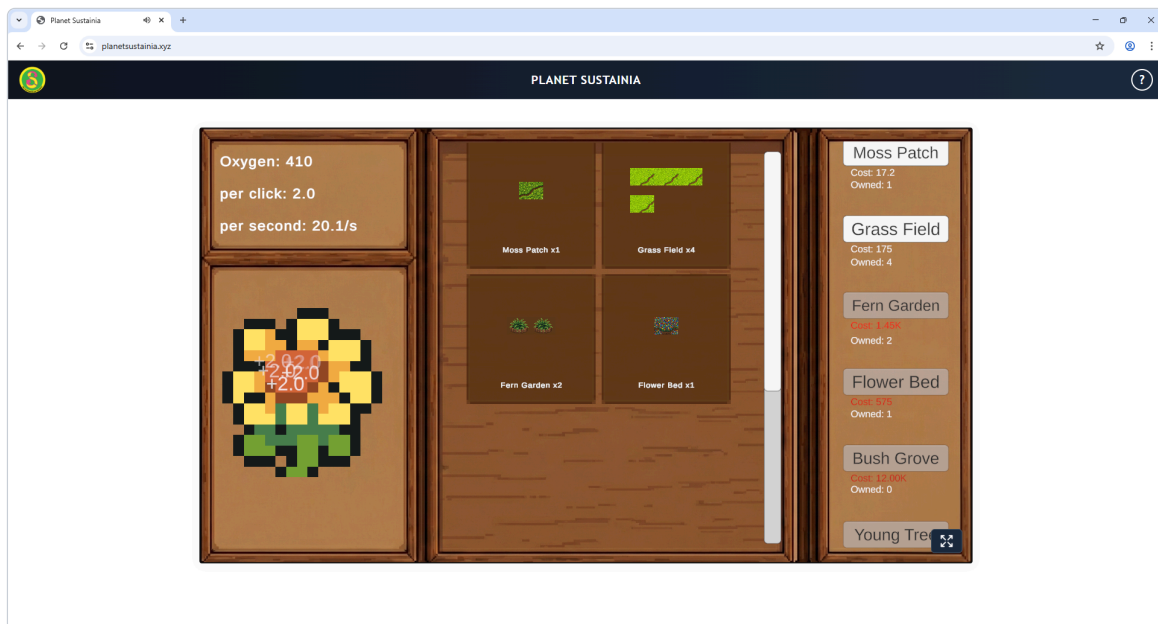
# Connie's Crisis Farm

Help Connie save her farm — by making oxygen! This is an **idle clicker** game. Your goal is to grow as much oxygen as you can.

## How to play:

- **Click on plants** to make oxygen. Every click adds a little to your total.
- **Buy new plants** with the oxygen you have collected. Plants come in two types:
  - **Click plants** — give you extra oxygen every time you click them.
  - **Passive plants** — quietly make oxygen for you all by themselves, even when you are not clicking.
- Mix and match plants to grow your oxygen as fast as you can.
- **Your progress is saved automatically**, so you can come back later and carry on where you left off.

**What you learn:** Plants are the planet's oxygen factories. Trees, flowers and crops breathe in carbon dioxide and breathe out the oxygen we need. The more plants we grow and protect, the cleaner our air becomes.



Connie's Crisis Farm, with the oxygen counter, click and passive plants, and the buy-plant menu.

# For Administrators

This section is for the **teachers, parents and staff** who run Planet Sustainia. The game is supported by two pieces of software: an **API server** (the part that stores accounts and scores) and an **admin dashboard** (the website you use to manage things).

**A note on roles.** What you can see and do in the dashboard depends on the **role** attached to your account ( `admin` , `owner` , etc.). Not every tab or button described here will be available to every administrator — sections that need a higher permission level will simply be hidden or disabled for you. If something you need is missing, ask an `owner` -level user to grant you the right role.

## Logging Into the Admin Dashboard

The dashboard is a web page served by the API server. By default it lives at:

```
http://<your-server-host>/dashboard.html
```

To sign in:

1. Open the dashboard URL in any modern browser.
2. Enter your **admin** (or **owner**) username and password.
3. You will land on the navigation bar with five sections: **Users**, **Games**, **Scores**, and **Activity**.

Only accounts with the `admin` or `owner` role can sign in. Pupils will be redirected back to the login screen with an “admin only” message.

## Managing Users

Open the **Users** tab from the navigation bar. From here you can:

- **Create a new account** — set a username, password, and role ( `user` , `developer` , `admin` , or `owner` ). This is how you give children accounts so they can log in to the game.
- **Change a user’s role** — promote a teacher to `admin` , or demote an account if needed.

- **Reset a password** — useful when a child forgets their password. New passwords must be at least **8 characters** long and contain an uppercase letter, a lowercase letter, and a digit.
- **Delete an account** — removes the user. Their submitted scores will also be tidied up.

*Self-service signups are off by default.* If a child tries to register themselves they will see “New player signups are currently disabled”. This is intentional — it stops anyone with the link from creating an account. To turn signups on, set `ALLOW_NEW_SIGNUPS=true` in the server’s `.env` file (see *Configuring the Server* below).

## Managing Games

The **Games** tab lists every minigame the server knows about. Each game has:

- a **slug** — a short, lowercase identifier used by the Unity client (for example `conveyor-belt`). Slugs must match the regex `^[a-z0-9-]+$`.
- a **name** — the friendly name shown to players (for example “Recycle Rush”).

You can add a new game, rename one, or remove one. **Be careful when deleting games** — any scores tied to that game will be removed too.

The slug must match what the Unity client uses; otherwise scores submitted from the game will not appear on the leaderboard. The slugs that ship with the project are:

- `endless-jump` — Carbon Climber
- `conveyor-belt` — Recycle Rush
- `ocean-cleanup` — Shelly’s Ocean Cleanup
- `solar-surge` — Solar Surge
- `farming` — Connie’s Crisis Farm
- `bossfight` — Water Waster Showdown

## Reviewing Scores

The **Scores** tab shows every score that has been submitted, with the player’s user-name, the game name, the score and the time it was submitted. You can:

- Filter by game or by user.
- Delete an individual score (for example if it was submitted by accident or looks suspicious).

## Reading the Activity Log

The **Activity** tab is the audit trail. Every important action — logins, account creation, role changes, password resets, score deletions — is recorded here with the **who**, **what**, **when**, and whether it succeeded.

Use this if you ever need to check who changed something. The newest events are shown first, and you can load up to 500 entries at a time.

## Configuring the Server

The API server is a Node.js application that lives in the `CS3028-Group-10-Server` folder. To install and run it on a new machine:

```
cd CS3028-Group-10-Server
npm install
npm run db:generate # build the initial database
migration
npm run migrate # apply it
cp .env.example .env # create your environment file
npm start # start the server on port 3000
```

The most useful settings inside `.env` are:

- `PORT` — which port the server listens on (default `3000`).
- `JWT_SECRET` — the secret used to sign login tokens. **Always change this on a real deployment.**
- `ALLOW_NEW_SIGNUPS` — `true` to let players register themselves; `false` (default) to require an admin to create accounts.

The server uses a single SQLite database file, so backups are simple — the server also takes automatic snapshots on a schedule.

## Backups and Restoring

Automatic backups are written by the server's backup job into the configured backup directory. Each file is a complete copy of the SQLite database. To restore:

1. **Stop** the server.
2. Replace the live database file with the backup you want to restore.

3. **Start** the server again.

Always keep a copy of the most recent backup somewhere off the server (for example on a school file share) before doing major work.

## Troubleshooting

*A child says “New player signups are currently disabled”.* Expected — only an admin can create their account. Use the **Users** tab.

*Scores from the game are not appearing on the leaderboard.* Check that the **slug** in the Games tab matches the slug the Unity client is using. Mismatched slugs are the most common cause.

*A teacher cannot see admin tabs after logging in.* Their account role is probably `user`. Promote them to `admin` from the Users tab.

*The dashboard shows “Session expired”.* Their login token has expired or been cleared. They just need to log in again.

*The dashboard shows “Access denied”.* Their account does not have permission for that action. Check the role on the Users tab.

## Where to Find More Detail

For deeper technical reference (API endpoints, database schema, change-impact notes), see the README files in each subproject:

- `CS3028-Group-10/README.md` — the Unity game.
- `CS3028-Group-10-Server/README.md` — the API server.
- `CS3028-Group-10-Dashboard/README.md` — the admin dashboard.