🧯 Student Troubleshooting & Common Mistakes

When Your Bot Doesn't Do What You Expected

Did something break?
No worries, that's normal.

This page is here to help you **fix problems calmly and quickly**, without guessing or panicking.

If your bot isn't working, you're probably **one small fix away**.

🧠 First: How to Use This Page

When something goes wrong:

1. **Read the error message** (don't skip it)
2. Find the matching section below
3. Fix **one thing**
4. Reload bots and try again

    Rule: Never change five things at once.
    That makes problems harder, not easier.

🚫 "My Bot Doesn't Appear in the Game"

Check these first

- Did you load the **folder**, not just a file?
- Does the folder contain **both**:
    - `myBotName.json`
    - `behavior.js`
- The .json file can have a custom name, identifying your bot, but…
- behavior.js should always have the same file name -- `behavior.js`

Why this happens

The game only loads folders that look like valid bots.
If one file is missing or misnamed, the bot is skipped.

❌ "My Bot Failed to Load" (Red or Yellow Warning)

Look at the **Bot Load Report**.
It will usually tell you *what* went wrong.

Here are the most common reasons.

🧾 Errors in `bot.json`

❌ Invalid JSON

Symptoms

- Error mentions "JSON" or "parse"
- Bot does not load at all

Common causes

- Missing comma
- Extra comma
- Missing { or }

Fix

- Check commas carefully
- Every { must have a }
- Every line except the last needs a comma

    Tip: JSON is very strict. One missing comma can break everything. Refer to the example files given, and make sure to follow the patterns you see there.

❌ Missing Required Fields

Symptoms

- Error mentions `name`, `build`, or required values

Fix

- Make sure `bot.json` includes:
    - `"name"`
    - `"build"` with all required tiers
- Compare your file to a working example

❌ Invalid `wallBehavior`

Symptoms

- Error mentions `wallBehavior`

Fix
 Use **one of these only**:

```
"wallBehavior": "stop"
"wallBehavior": "bounce"
"wallBehavior": "slide"
```

No capitals. No extra spaces.

🧠 Errors in `behavior.js`

❌ "tick is not defined" or similar

Cause

- Function name is wrong
- Missing `function` keyword

Fix

Your file must include **exactly** this shape:

```
function tick(api) {
  // your code
}
```

No extra functions. No renamed functions.

❌ JavaScript Syntax Error

Symptoms

- Error mentions "unexpected token"
- Bot crashes immediately

Common causes

- Missing `}`
- Missing `)`
- Misspelled keyword

Fix

- Check brackets carefully
- Line things up neatly
- Fix the **first** error shown

💥 "My Bot Crashed During the Match"

What this means

Your bot loaded correctly, but something went wrong **while it was running**.

The game:

- Stops your bot safely
- Keeps other bots running

This is **not punishment**.

Common causes

- Using a command that doesn't exist
  (eg. `api.move()` instead of `api.advance()`)
- Using a variable that doesn't exist
- Calling an API function incorrectly

Fix

- Check the **API Cheatsheet**
- Fix one line at a time
- Reload and try again

🧑‍🔧 "My Bot Does Nothing"

Check:

- Does it ever call `advance()`?
- Does it ever call `turn()`?
- Does it ever call `fire()`?

A bot with no actions is technically valid - but useless.

Fix
 Start with something simple:

```
api.advance(0.3);
```

Then add behavior slowly.

🔄 "My Bot Spins Forever"

Likely cause

Turning too much every tick.

Example problem:

```
api.turn(30);
```

Fix

Use smaller turns:

```
api.turn(4);
```

Small turns = more control.

🧱 "My Bot Freezes at Walls"

This is expected behavior (sometimes)

If your bot uses:

```
"wallBehavior": "stop"
```

Then:

- It will pause briefly at walls
- This can look like freezing

Fix options

- Turn more often
- Change wall behavior later
- Don't panic - this is a design choice
- Upgrade your bot - there are other choices than "stop", they cost configuration points, though :)
  - `"wallBehavior": "bounce"`
  - `"wallBehavior": "slide"`

🔫 "My Bot's Laser Never Hits Anything"

Common causes

- Firing without aiming
- Never checking alignment
- Turning too fast

Fix pattern

```
let target = api.scan();
if (api.aligned(target)) {
  api.fire();
}
```

Aim first. Then shoot.

🧠 "I Changed Something and Now Everything's Broken"

This happens to everyone.

Bummer…

- As you reach certain milestones, save your bot folder with a new name, as a backup.
  - Eg. MoverBot-v3
- In your file editor, try to "undo", generally "Ctrl-Z"

Best recovery move

- Undo your last change
- **Reload bots** with old working code
- Confirm it works
- Try again - smaller changes this time

📁 Learn From Broken Examples

Your teacher may provide example folders like:

sampleBots/failedBotExamples/

These show:

- Real mistakes
- What errors look like
- How small issues cause big problems

Broken bots are learning tools - not failures.

🧪 Final Debugging Rules

1. **Read the error**
2. **Fix one thing**
3. **Reload**
4. **Test**
5. **Repeat**

If you can explain:

"Why did my bot do that?"

…then you are learning exactly what BotBattles is meant to teach.

🆘 When to Ask for Help

Ask for help **after** you can say:

- What you changed
- What error you saw
- What you tried

That makes help fast and useful.