

Neon Drift

Kids Coding Guide (White Background)

No Node.js ■

Only 1 file to edit: **game.js**



Find & Fix TODOs ■

What you will build

A neon dodge game. You move the player, collect coins, and avoid enemies. You will add cool features by completing small TODO missions inside **game.js**.

Step 1 - Open the project

- 1) Unzip the project folder **neon-drift**.
- 2) Double-click **index.html** to run the game in your browser.

Controls: **WASD / Arrow keys** to move • **Shift** dash • **P** pause • **R** restart

Only edit: **game.js** (do not edit the other files today).

Step 2 - Find the TODO missions

Open **game.js** in your editor and search:

TODO

You will complete Missions 1-5. After each mission, save the file and refresh the browser to test.

Mission 1 - Change 3 numbers (easy)

Find this block in **game.js**:

```
const SETTINGS = {  
  playerSpeed: 240,      // TODO: Mission 1 (kids) change to 280  
  dashCooldown: 1.25,   // TODO: Mission 1 (kids) change to 1.0  
  coinScore: 30,        // TODO: Mission 1 (kids) change to 40  
  maxCombo: 4.0,  
  enemySpawnRate: 0.95, // lower = more enemies  
  coinSpawnRate: 0.70,  
  powerSpawnRate: 7.0,  // seconds per powerup  
};
```

Do this:

- Change **playerSpeed** to **280**
- Change **dashCooldown** to **1.0**
- Change **coinScore** to **40**

Test: Refresh the browser. You should move faster and earn more points per coin.

Mission 2 - Smarter coin points (2-3 lines)

Find this function:

```
function getCoinGain() {  
  // TODO 4 (kids code, 2-3 lines):  
  // Make coin value increase when danger is high.  
  // Example: return SETTINGS.coinScore + state.danger * 2;  
  return SETTINGS.coinScore;  
}
```

Replace the last line with:

```
return SETTINGS.coinScore + state.danger * 2;
```

Test: Play longer. When **Danger** is higher, each coin is worth more.

Mission 3 - Enemies bounce off walls (6-8 lines)

Find this TODO inside the enemy loop (search: **TODO 1**):

```
e.x += e.vx * dt;
e.y += e.vy * dt;

// TODO 1 (kids code, 6-8 lines):
// Make enemies bounce off the walls.
// (Paste the bounce code from the PDF.)
```

Paste this code directly under the TODO 1 comment:

```
// Bounce on walls
if (e.x < e.r) { e.x = e.r; e.vx *= -1; }
if (e.x > W - e.r) { e.x = W - e.r; e.vx *= -1; }
if (e.y < e.r) { e.y = e.r; e.vy *= -1; }
if (e.y > H - e.r) { e.y = H - e.r; e.vy *= -1; }
```

Test: Now enemies bounce inside the arena instead of flying away.

Mission 4 - Coin magnet when Boost is active (~10 lines)

Find this TODO inside the coin loop (search: **TODO 2**):

```
// TODO 2 (kids code, ~10-12 lines):
// If boost is active, coins fly to the player.
// (Paste the magnet code from the PDF.)
```

Paste this code under the TODO 2 comment:

```
if (state.boost > 0) {
  const dx = player.x - coin.x;
  const dy = player.y - coin.y;
  const dist = Math.hypot(dx, dy);

  const range = 160;
  if (dist < range && dist > 1) {
    const pull = 260; // speed
    coin.x += (dx / dist) * pull * dt;
    coin.y += (dy / dist) * pull * dt;
  }
}
```

Test: Pick up a **B** powerup. Coins should fly toward you.

Mission 5 - Freeze powerup (3 small TODOs)

Freeze is a powerup with letter F. It should stop enemies for a few seconds.

5A - Reduce the freeze timer (1 line)

```
// Power timers
state.boost = Math.max(0, state.boost - dt);
// TODO: Mission 5 (kids) reduce freeze timer:
// state.freeze = Math.max(0, state.freeze - dt);
```

Uncomment and keep this line:

```
state.freeze = Math.max(0, state.freeze - dt);
```

5B - Stop enemies when freeze is active (3 lines)

```
// Enemies
for (const e of state.enemies) {

    // TODO: Mission 5 (kids) if freeze is active, skip enemy movement:
    // if (state.freeze > 0) {
    //     continue;
    // }

    e.x += e.vx * dt;
    e.y += e.vy * dt;
```

Uncomment the if block:

```
if (state.freeze > 0) {
    continue;
}
```

5C - Give freeze effect when you pick up F (2 lines)

```
} else if (pu.kind === "freeze") {
    // TODO: Mission 5 (kids) give freeze effect:
    // state.freeze = 3.0;
    // state.score += 70;
}
```

Uncomment those lines:

```
state.freeze = 3.0;
state.score += 70;
```

Test: Pick up **F**. The FREEZE badge should appear and enemies should stop moving.

Bonus Mission - Save Best Score (localStorage)

This is optional. If you do it, the best score stays even after refresh.

Find these BONUS TODO comments in **restart()** and **gameOver()** and uncomment them.

```
// state.highScore = Number(localStorage.getItem("neon_highscore") || 0);  
  
// if (s > state.highScore) {  
//   state.highScore = s;  
//   localStorage.setItem("neon_highscore", String(s));  
// }
```

Debug tips

- If the game breaks: press **Ctrl+Z** to undo, then try again.
- Check the browser console: Right click → Inspect → Console.
- Make sure every **{** has a matching **}**.