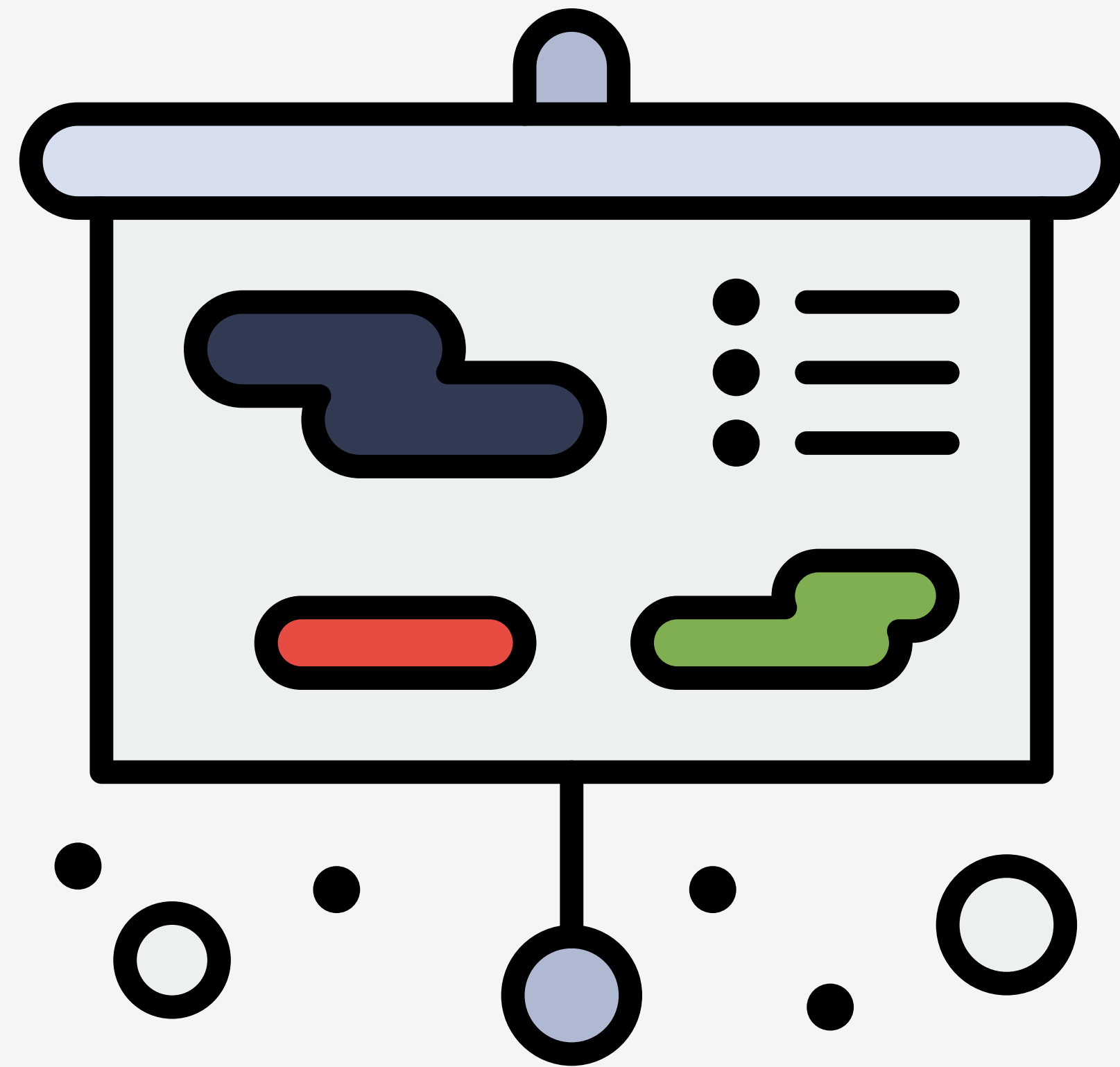# INTRODUCTION TO JAVASCRIPT

Lecture 9

TODAY'S TOPICS

- JavaScript Debugging

- **Hands-on:** Trouble with Seuss

- **Participation:** Comedy of Errors

ANNOUNCEMENTS

- Sign-in Sheet
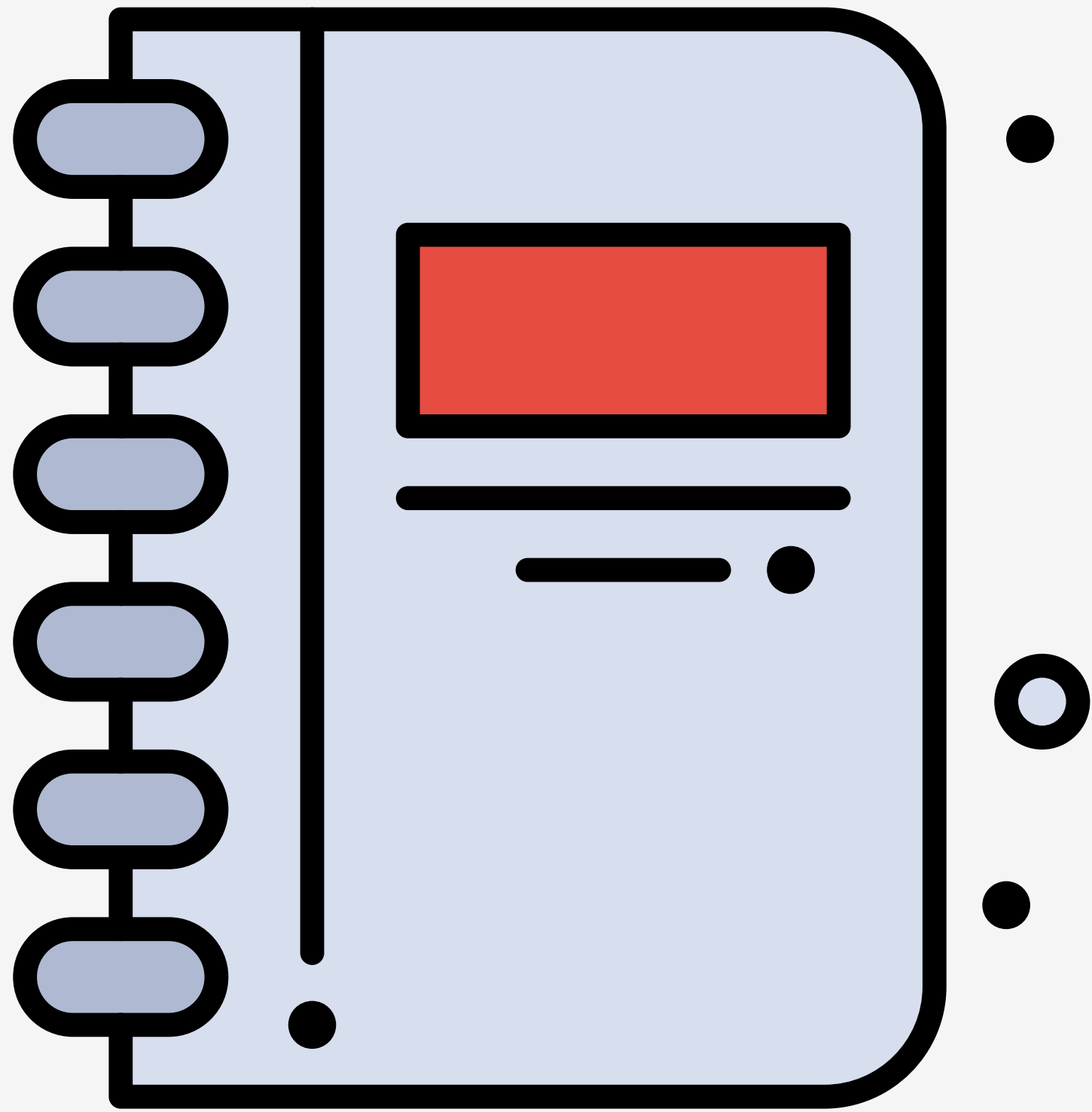
- Recording

- Bonus Assignments

JAVASCRIPT DEBUGGING

JAVASCRIPT DEBUGGING

- Mistakes and Errors are natural part of programming

- Errors and bugs should be expected

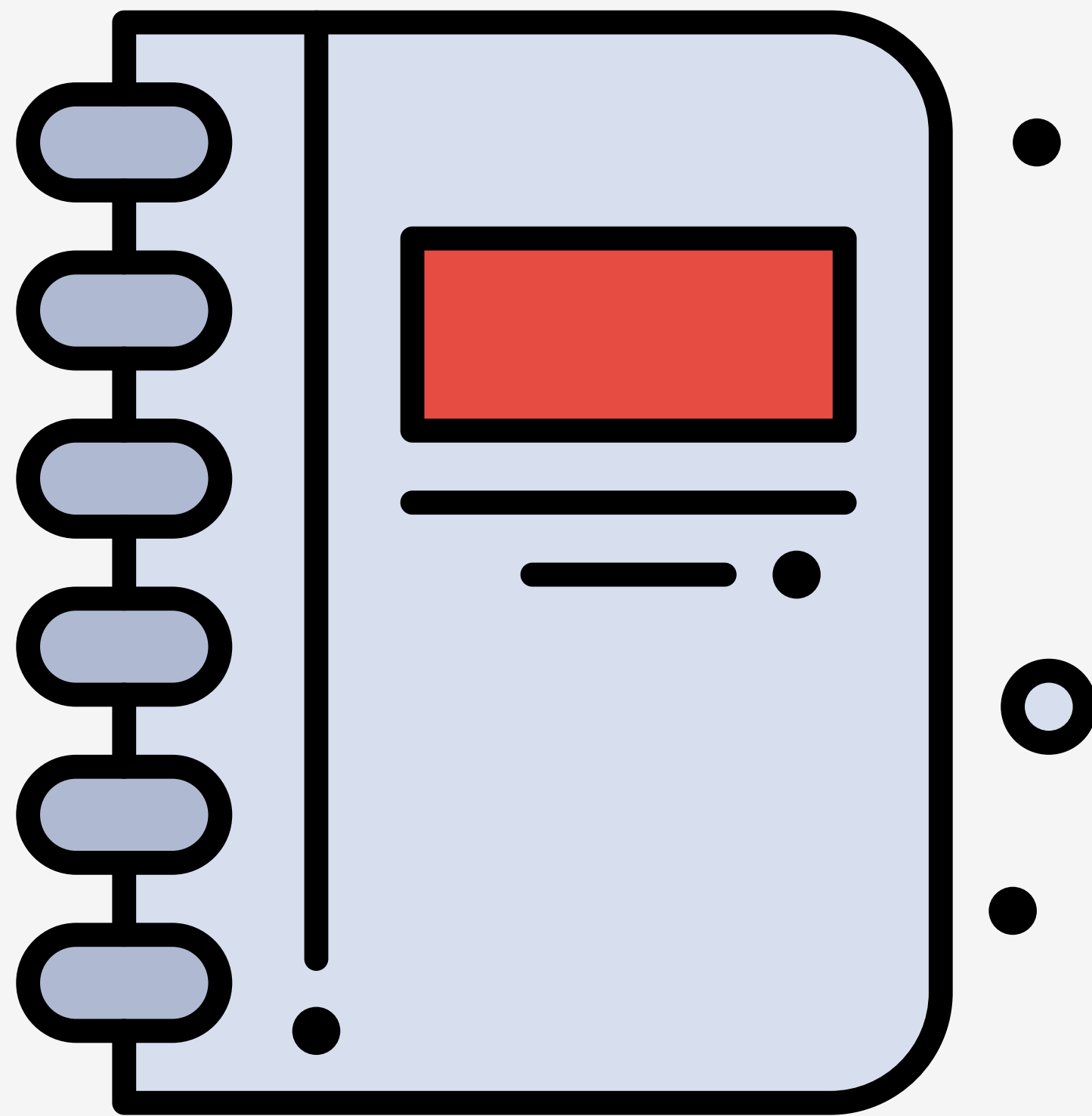- Debugging is part of the programming process

CATEGORIES OF ERRORS

- **Syntax Errors** occur when the code has not be properly formatted.

- **Syntax Errors** are often fatal.

- **Syntax Errors** relatively easy to fix.

- **Syntax Errors** occur less often through experience.

CATEGORIES OF ERRORS

- **Logic Errors** occur when the code does not perform the way the developer intended.

- **Logic Errors** can be caused by looping to few times or performing tasks in the wrong order

- **Logic Errors** are often the main problem facing a developer

- **Logic Errors** can be difficult to find and fix

BE THE COMPUTER

```
S.TN;DP

TK;NSTP{FW}RD

T[RNLL]T.HWY;RN,D

TK/NS\T"PBC"K

ST$D<W>
```

TURN ALL THE WAY AROUND

TAKE ONE STEP BACK

SIT DOWN

TAKE ONE STEP FOWARD

STAND UP

STAND UP

TAKE ONE STEP FOWARD

TURN ALL THE WAY AROUND

TAKE ONE STEP BACK

SIT DOWN

CODE TRACING

CODE **TRACING**

- **Code tracing** is act of "tracing" the path through a program

- **Code tracing** is accomplished by leaving messages through the code

- **Code tracing** requires no special tools and has a low learning curve

```javascript
function add (a, b) {
  return a + b
}


function multiply (a, b) {
  return a + b
}


function increment (a) {
  return a++
}


// (3 * 3) + 4 = 13
console.log(add(multiply(3, increment(2)), increment(3))) // 7
```

```javascript
function add (a, b) {
  console.log(a, b) // 5 3, Expected: 9 4
  return a + b
}


function multiply (a, b) {
  console.log(a, b) // 3 2, Expected: 3 3
  return a + b
}


function increment (a) {
  return a++
}


// (3 * 3) + 4 = 13
console.log(add(multiply(3, increment(2)), increment(3))) // 8
```
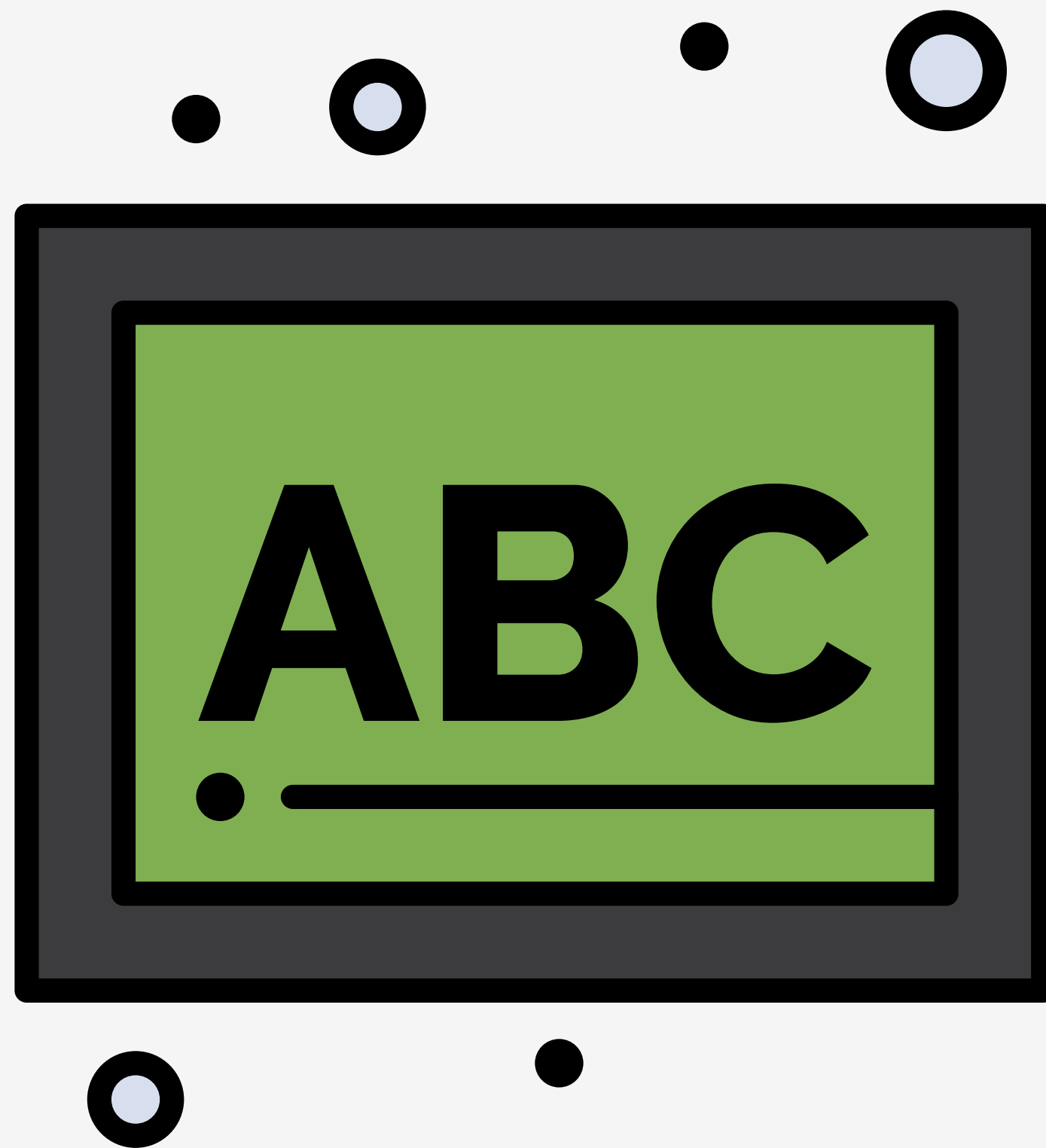
ERROR MESSAGES

ERROR MESSAGES

- Errors messages are often displayed in the JavaScript console

- These messages will display the type of error, the filename and line number the error occurred

- The line number of the error is not always the same line number of the mistake

```
const color = red

// ReferenceError: "red" is not defined

// red is a not a defined variable
```

```
const colors = ['red', 'green'
const numbers = [1, 2, 3]

// SyntaxError: Unexpected token const

// a closing bracket is missing
```
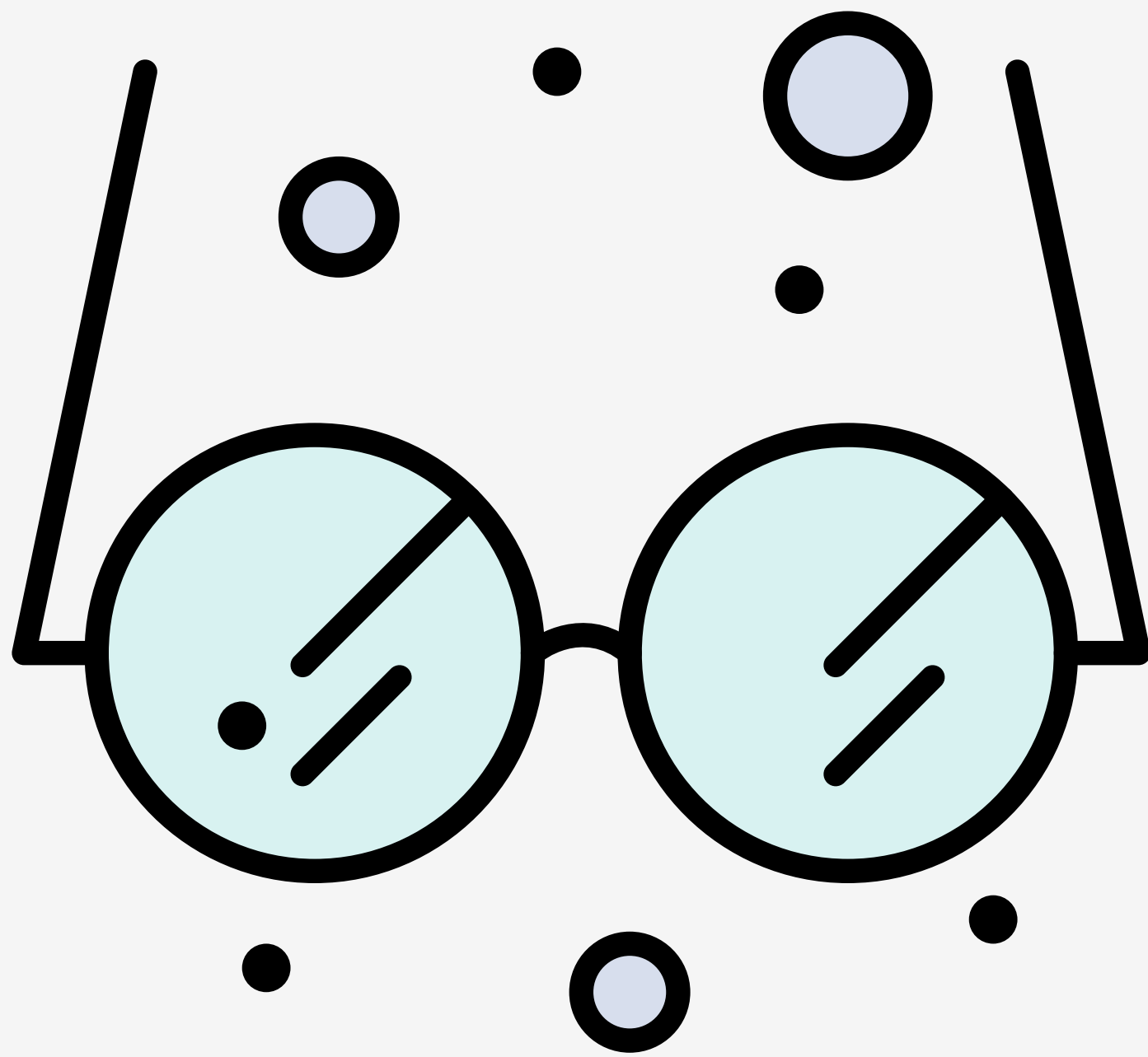
THE CONSOLE

THE CONSOLE

- The console can be used to display custom messages

- Methods beyond `console.log()`:

  - `console.error()`

  - `console.warn()`

  - `console.group()`

  - `console.table()`

  - `console.assertion()`
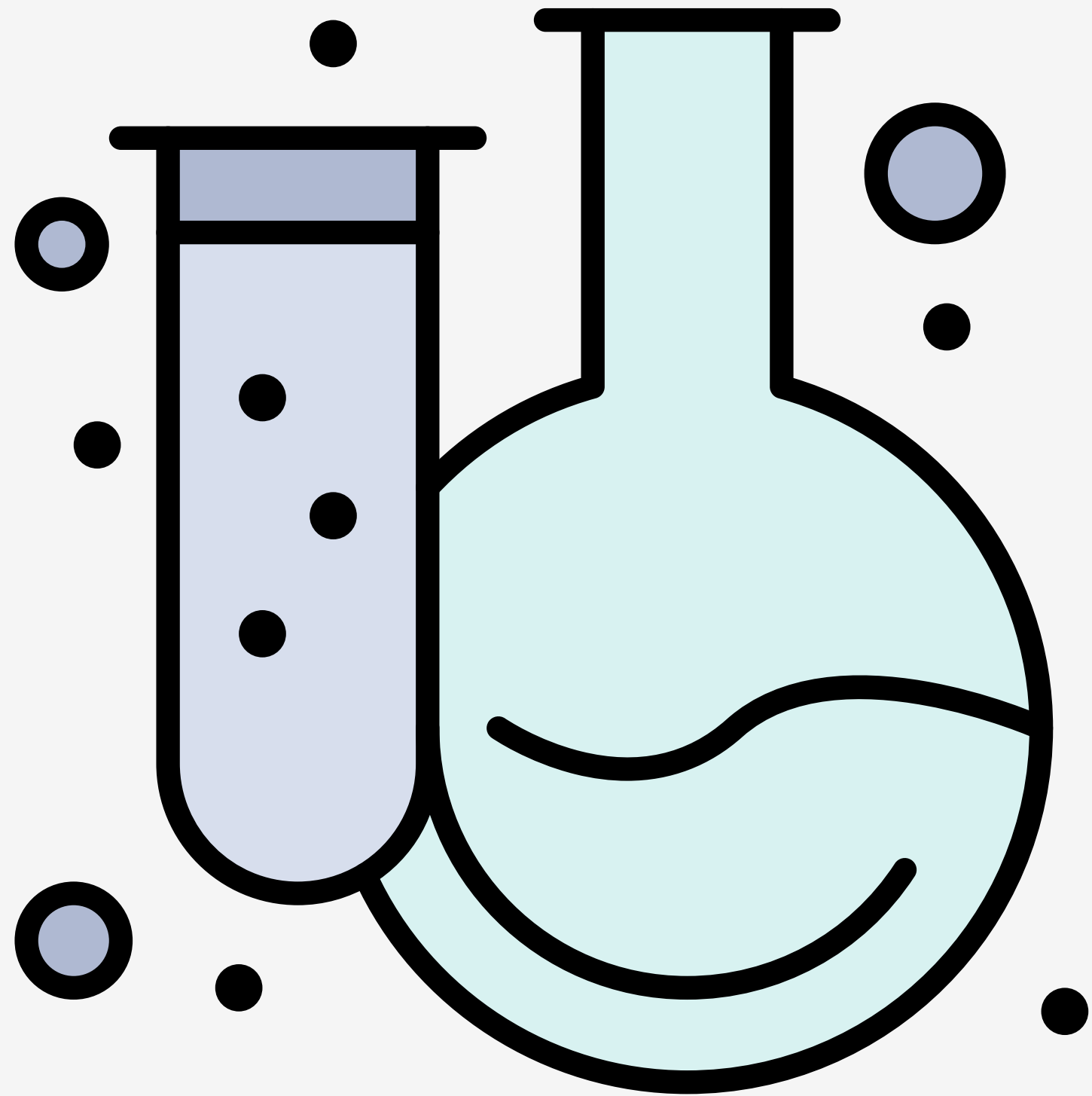
HANDS-ON: CHALLENGES

HANDS-ON CHALLENGES

- Clone Trouble with Seuss
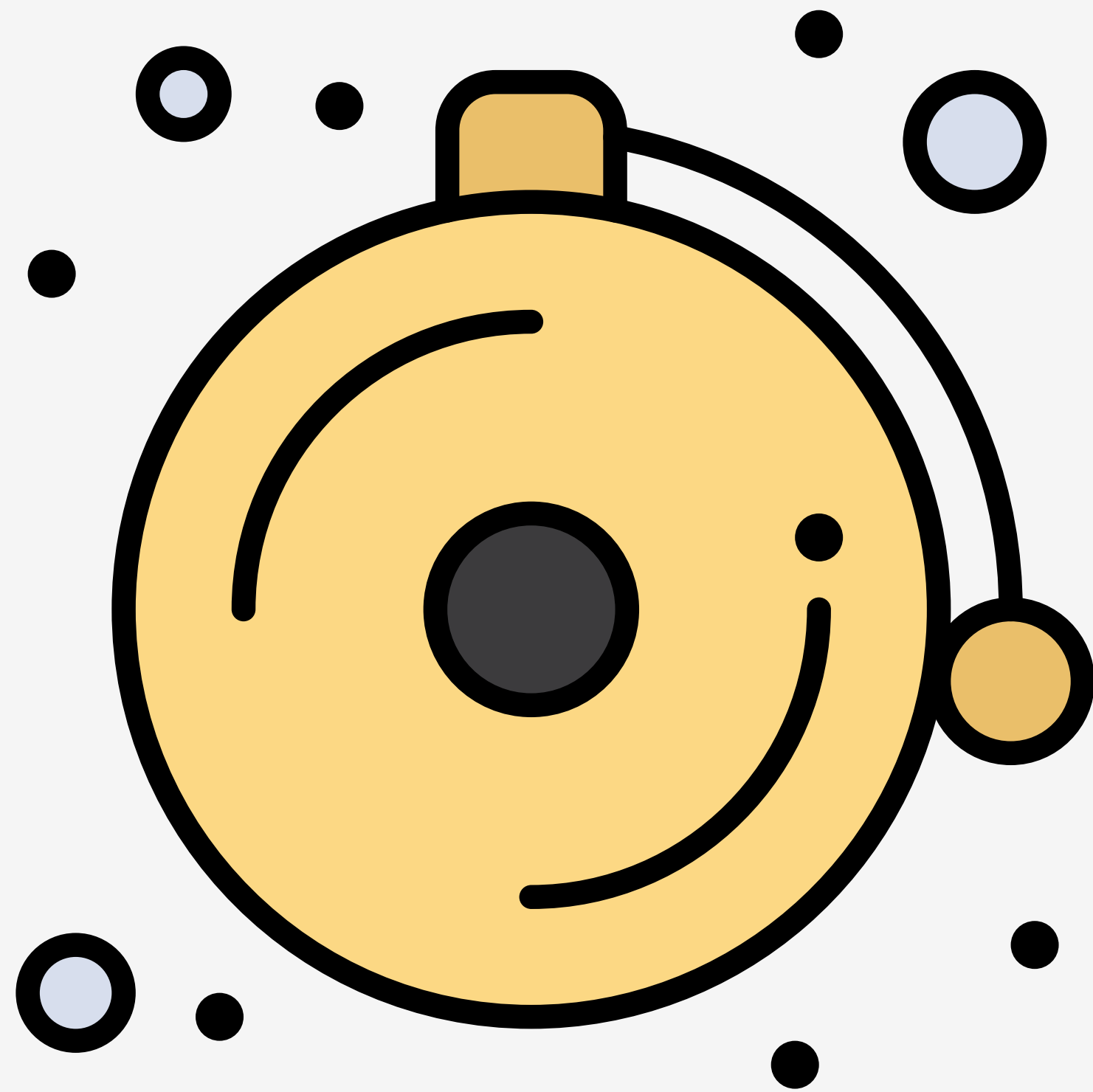- Fix all syntax and logic errors

PRACTICE

COMEDY OF ERRORS

- *GITHUB CLASSROOM ASSIGNMENT*

- Fix all the syntax and logic errors

- Submit the URL to your repository

- *DUE:* Fri. Oct. 11 @ 11:59 PM

NEXT TIME...

- Branching and Merging

- **Exercise:** Scramble Pseudocode