Problem Solving and Computing
Lesson 6
Processing

Teacher Resources

Lesson Overview

This lesson introduces the concept of processing within computational problem-solving. While this lesson focuses on four common types of processing - if/then (conditionals), finding a match (searching), counting, and comparing - students should understand that processing is whatever a computer does to turn inputs into outputs. Students are first introduced to the types of processing through several sample apps. They then investigate more apps to determine what sorts of processing each uses. They then think of their own app and decide what types of processing it would need to work. Finally, they brainstorm other types of processing that may be useful but were not included in the main lesson.

More guidance and resources for this lesson are available in the **Lesson Plan:**
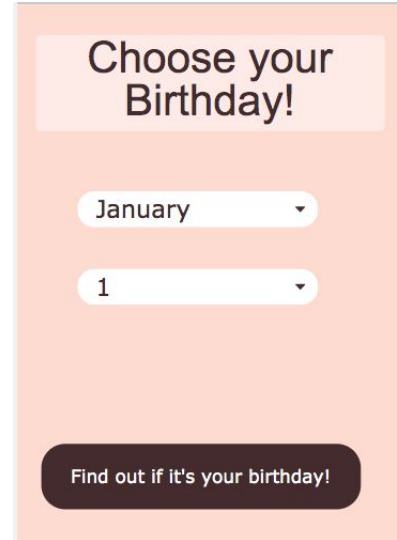
- https://studio.code.org/s/csd1-2023/lessons/6

Warm Up

Prompt:

Go on Code Studio to try out the birthday app.
It has three possible outputs. Try to find each one.

1. What is the input to the app?
2. What is the output?
3. How do you think the app decides which output to give to the user?

Choose your Birthday!

January

1

Find out if it's your birthday!

Key Vocabulary:

Processing - the thinking work computers do to turn input into output

Question of the Day

What are the different ways computers can process information?
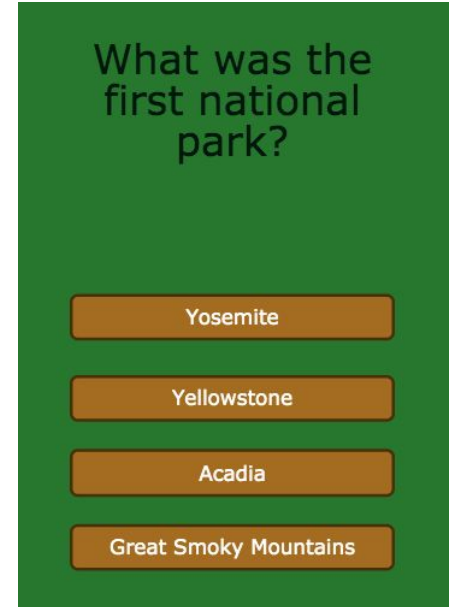
Activity

National Park Quiz

Try out this quiz about America's national parks.

How does this app use comparing and if/then to turn the input into output?

How Many Countries...

This app tells you some fun facts different countries.

What new kinds of processing might it use to turn input to output?

Four Kinds of Processing

- **If/Then** - If something is true, do something else.

- **Comparing** - Check whether things are the same, or one is bigger than the other.

- **Finding a Match** - Search a list or group of things for a match.

- **Counting** - Keep track of how many of something there are.

App and Processing

For each app, choose one type of processing it uses and explain how it is used.

You were born on a
Thursday
just like
Khaled Hosseini

Public Domain Image
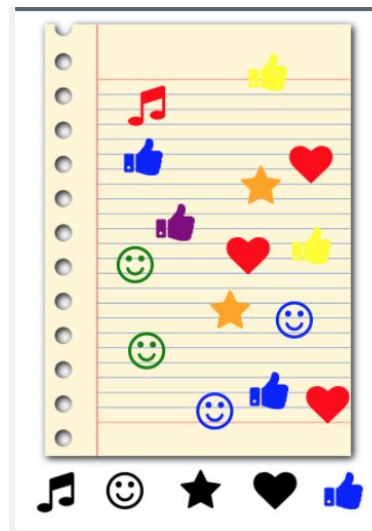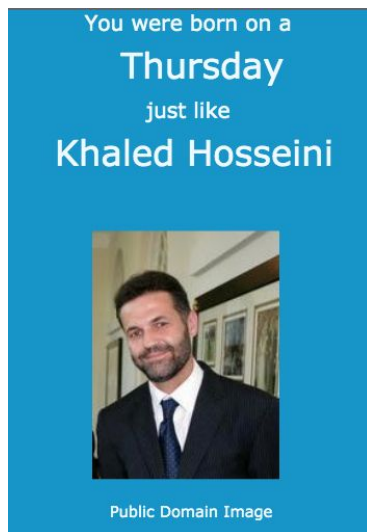
More Processing

For each app, choose **two** types of processing it uses and explain how they are used.

Which finger is the FASTEST?

Put one finger on the 's' key and the other on the 'k' key. Then click as fast as you can.

s   k

10   8

's' is winning!

I'm thinking of a number from 1 to 100.

Can you guess it?

Your guess: 17

Too low!

You have 5 more tries.

What do you like to do for fun?

☑ visit museums
☐ cookout with friends
☑ go to sports games
☐ go camping

Next Question

Your App Idea

With your partner, think of a new app idea.

- What inputs does it need?
- What outputs?
- What types of processing does it use to change the input to output?

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Wrap Up

Prompt:

We saw four different types of processing today, but there are many more

- What's another type of processing that you think would be useful?

- What kind of app might use it?

Key Vocabulary:

Processing - the thinking work computers do to turn input into output

Question of the Day

What are the different ways computers can process information?