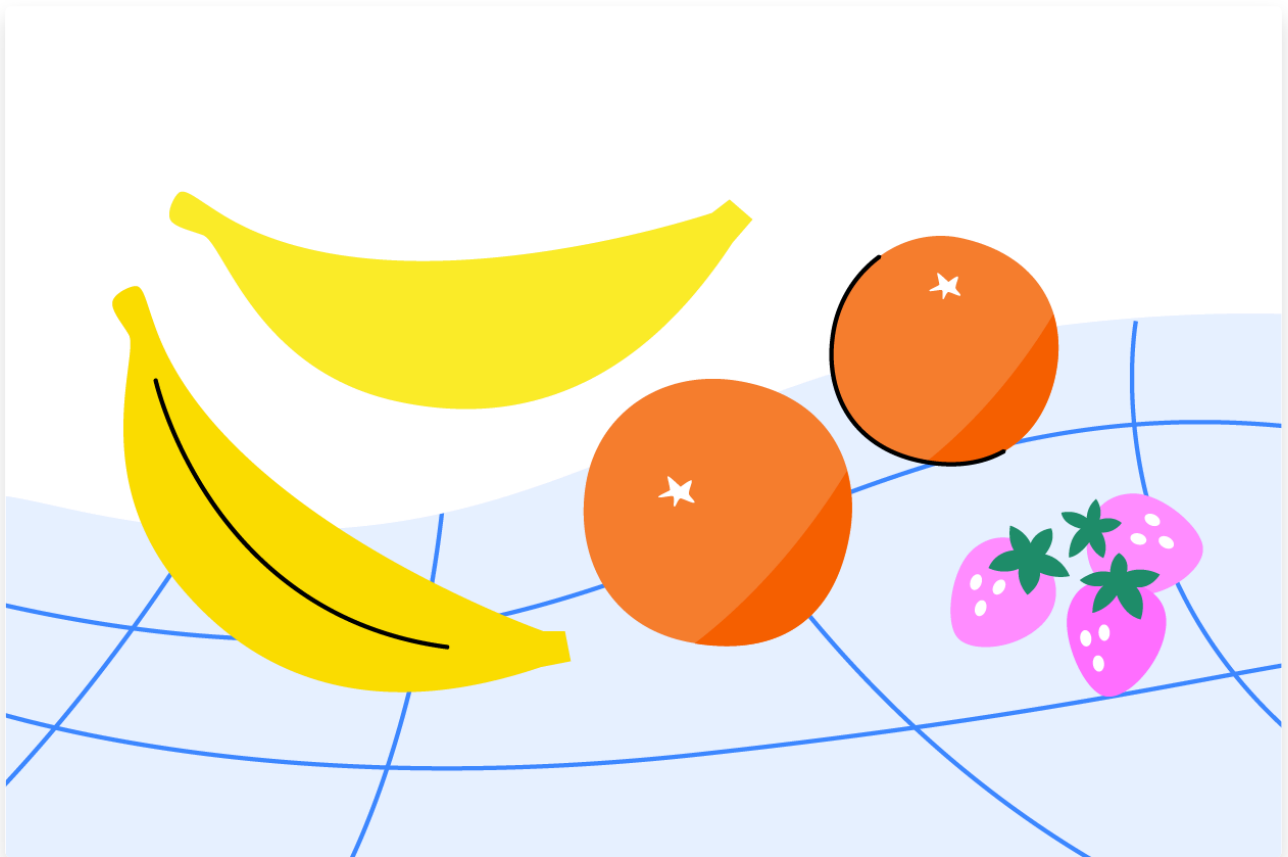


Data and Coding

Textbook

Data and Coding



Introduction

What if you could find out which food is the most chosen in your class? Would it be tacos, donuts, or maybe watermelon? In this activity, you'll ask your classmates about their favorite foods and use that information to see which snack is picked the most! You'll use real data to find out the answer. Ready to find out what your class really likes to eat? Let's begin!

Data

Data is like a collection of small pieces of information that help us learn things. For example, if 6 people said they like apples and 11 people said they like watermelon, that data tells us that more people like watermelon.

For this coding challenge, choose 3 foods from the following list:

Apple	Banana	Donut	Cake	Taco
Muffin	Eggs	Orange	Strawberry	Watermelon

Ask at least 12 students in your class which of the 3 food options is their favorite. Write down the data you collect since it will be used in the coding activity.

Usable Data vs. Miscellaneous Information

You are trying to find out which food is chosen most often in your class. You ask your friends, "What's your favorite food: apple, banana, or watermelon?"

- When a friend says, "I like apples!" – that's **useful data**! It directly helps you answer your question about favorite foods.
- But what if your friend also tells you, "I wore blue socks today!" or "My dog barked this morning!"? That's **other information**. It might be interesting, but it doesn't help you find out the favorite food for this project.

Useful data is the information that is important and directly helps you solve your problem or answer your question. It's like finding the exact puzzle piece you need to complete your picture.

Other information is everything else – it might be true, but it doesn't help with this specific task. When you're collecting data, you need to figure out what information is helpful and what isn't, so you can focus on the right clues to solve your question.

Your Coding Challenge

For this coding activity, you will ask your classmates about their favorite foods. Follow these steps:

1. **Ask a Question:** Think of a question you want to answer by collecting data. Example: Which of these 3 foods is chosen the most in our class?
2. **Ask Your Classmates:** Go around and ask at least 12 students in your class which of the 3 foods they like the most.
3. **Write Down the Answers:** Keep track of how many students choose each food. You can record this using paper and pencil or you can use computer tools! To use a computer tool to record data, you can do the following:
 - **Open a Simple Table:** Ask your teacher to help you open a program like Google Sheets, Microsoft Excel, or even a simple table in a word document.
 - **Make Columns for Your Foods:** At the top of your digital paper, you can type the names of your three foods. Like this: | Food 1 | Food 2 | Food 3 | |---|---|---|
 - **Type in Marks or Numbers:** As each classmate tells you their favorite food, you can type a checkmark, an 'X', or even just the number '1' in the column for their choice. Or, you can just type the numbers as you go:
 - If someone likes Pizza, you'd type '1' in the Pizza column.
 - Then for the next person, if they like Tacos, you'd type '1' in the Tacos column on the next row.
 - When you are done, you can count how many '1's are in each column to find the total!
4. **Share Your Findings:** Once you have your data, make note of any patterns you see to share with others.

Example

Let's say you pick Apple, Banana, and Watermelon. Here's how you might collect and write down the data:

- **Apple:** 4 students
- **Banana:** 3 students
- **Watermelon:** 5 students

Analyze the Data

[Analyzing](#) data means to look at the data and make conclusions.

Let's practice analyzing the data from the above example. It looks like the most students like watermelon. This means more students like Watermelon, but fewer like Banana and Apple.

Why Do This?

Collecting data helps us see which choices are the most popular and makes it easier to understand what people like best. It's like creating a simple chart to see how everyone feels about the foods you chose!

Critical Thinking Questions

1. If you asked your friends which food they like best, how would you decide which food to bring to a party based on the data you collect?
2. How does data help us understand what people prefer?

Questions (5)

1. What is data?

MULTIPLE CHOICE

Choose the correct answer:

- A. Information
- B. Decisions
- C. Deliveries
- D. Sculptures

2. 5 people like swimming, 6 people like hiking, and 3 people like dancing. Which activity do people like the most?

MULTIPLE CHOICE

Choose the correct answer:

- A. Swimming
- B. Hiking
- C. Dancing

3. Which activity involves collecting data about the weather?**Choose the correct answer:**

- A. Planting flowers in a garden
- B. Recording daily temperatures for a week
- C. Reading a storybook

4. You take a survey, asking your friends their favorite sports. 3 say basketball, 5 say baseball, and 8 say swimming. Which sport do your friends enjoy the most?

MULTIPLE CHOICE

Choose the correct answer:

- A. Swimming
- B. Baseball
- C. Basketball

5. 7 people like cake, 4 people like cookies, and 3 people like pies. Which dessert do people like the least

MULTIPLE CHOICE

Choose the correct answer:

- A. Cake
- B. Cookie
- C. Pie

Games (2)

1. Data Typing Game

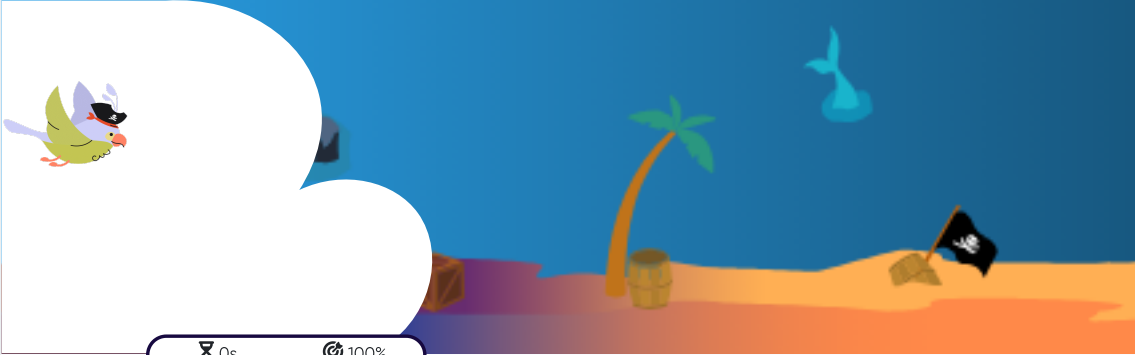
Full Screen

Audio

Instructions

Restart

Pause



0s 100%

Data is like a collection c

2. Data Matching Game

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All


Check Matches

Attempts: 0


Data

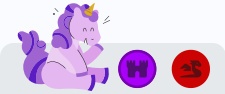
Analyze

A collection of little pieces of information that help us understand things better.



To look at the data and make conclusions.





Blocks Pro Challenges (1)

1. Favorite Food

Favorite Food

Select each food sprite you polled (i.e. donut, cake, muffin).

Code each food sprite so when the sprite is clicked it will jump as many times as it was said to be someone's favorite. Then, code that sprite to say how many people chose it to be their favorite.

For example, if 7 people said donuts were their favorite, the donut sprite would jump 7 times and then say "7 people said I was their favorite food."

Use the 'glide [#] secs to x: [#] y: [#]' blocks to make your sprite jump. You will need a 'wait' block in between the two glide blocks.

Requirements

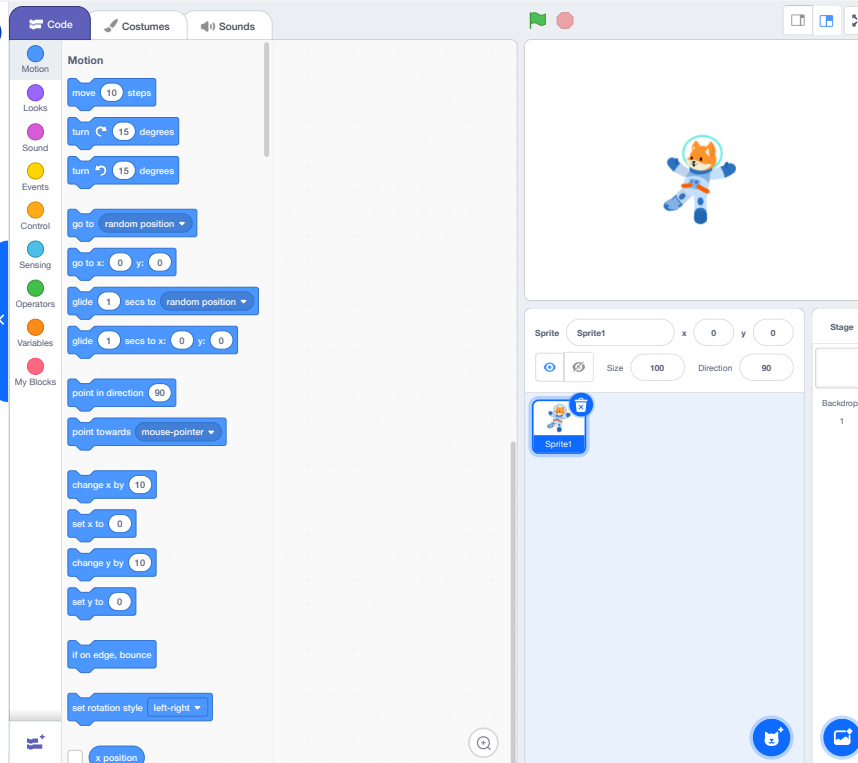
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6 Motion

3 Looks

3 Event

9 Control



The code editor shows the following sequence of blocks:

- Motion**
 - move 10 steps
 - turn 15 degrees
 - turn 15 degrees
 - go to random position
 - go to x: 0 y: 0
 - glide 1 secs to random position
 - glide 1 secs to x: 0 y: 0
 - point in direction 90
 - point towards mouse-pointer
 - change x by 10
 - set x to 0
 - change y by 10
 - set y to 0
 - if on edge, bounce
 - set rotation style left-right
- Variables**
 - x position

The right panel shows the stage with a cat sprite (Sprite1) at the center. The sprite's properties are: x: 0, y: 0, size: 100, direction: 90. The stage has a single backdrop (Backdrops 1).

Answer Keys & Solutions

Questions

1. What is data?

MULTIPLE CHOICE

Correct Answer:

- | | |
|----------------|-------------|
| A. Information | ✓ Correct |
| B. Decisions | ✗ Incorrect |
| C. Deliveries | ✗ Incorrect |
| D. Sculptures | ✗ Incorrect |

Explanation:

Data tells us things.

2. 5 people like swimming, 6 people like hiking, and 3 people like dancing. Which activity do people like the most?

MULTIPLE CHOICE

Correct Answer:

- | | |
|-------------|-------------|
| A. Swimming | ✗ Incorrect |
| B. Hiking | ✓ Correct |
| C. Dancing | ✗ Incorrect |

Explanation:

Which activity did the greatest number of people say they enjoyed?

3. Which activity involves collecting data about the weather?

MULTIPLE CHOICE

Correct Answer:

- | | |
|---------------------------------|-------------|
| A. Planting flowers in a garden | ✗ Incorrect |
|---------------------------------|-------------|

B. Recording daily temperatures for a week

✓ Correct

C. Reading a storybook

✗ Incorrect

4. You take a survey, asking your friends their favorite sports. 3 say basketball, 5 say baseball, and 8 say swimming. Which sport do your friends enjoy the most?

MULTIPLE CHOICE

Correct Answer:

A. Swimming

✓ Correct

B. Baseball

✗ Incorrect

C. Basketball

✗ Incorrect

5. 7 people like cake, 4 people like cookies, and 3 people like pies. Which dessert do people like the least

MULTIPLE CHOICE

Correct Answer:

A. Cake

✗ Incorrect

B. Cookie

✗ Incorrect

C. Pie

✓ Correct

Games

1. Data Typing Game

Typing game - no answer key needed. Students practice typing the provided content.

2. Data Matching Game

Matching Game Solutions:

1. →

2. →

Students must drag items from the left to match with corresponding items on the right.

