

Student Data Collection

Textbook

Student Data Collection



The Classroom Supply Count

Ms. Chen's class needed to order new supplies. "How do we know what to order?" she asked.

Marcus suggested, "We could count everything!"

"Good idea," said Ms. Chen. "Let's use our tablets to collect data about our classroom supplies."

The students opened a counting app. Emma clicked each time she found a pencil. Marcus typed numbers for erasers. Sofia sorted items into groups on her screen.

"Look!" Emma said. "The app shows we have 15 pencils but 30 erasers."

"That's a pattern," Ms. Chen explained. "We have twice as many erasers as pencils. This data tells us we need more pencils."

Marcus noticed something else. "The graph shows pencils as the shortest bar."

"Exactly," said Ms. Chen. "When we collect and organize data, we can see what we need. That's how computers help us make smart decisions."

What Is Data Collection?

Data collection means gathering information to learn about something. Computers help us collect data by:

- Counting how many times we click
- Recording what we type
- Keeping track of choices we make
- Sorting information into groups

Digital Data Collection Methods

When using computers, we collect data by:

- **Clicking buttons** to count items
- **Typing numbers** into data tables
- **Selecting categories** to sort information
- **Using tally tools** to track observations

Finding Patterns in Data

After collecting data, we look for patterns. A pattern is something that repeats or happens regularly.

Example data collection:

- Red blocks: 6
- Blue blocks: 3
- Yellow blocks: 9

Pattern found: Yellow blocks appear most often, blue blocks appear least often.

Sorting and Totaling Data

Computers help us organize data:

- **Sort by type:** Group similar items together
- **Sort by size:** Order from smallest to largest
- **Total amounts:** Add up all items in each group
- **Compare groups:** See which has more or less

Creating Data Visualizations

We can show our data different ways:

- **Tally marks:** |||| |||| (one line for each item)
- **Bar graphs:** Taller bars show larger amounts
- **Pictographs:** Pictures represent counted items
- **Data tables:** Numbers organized in rows and columns

Identifying Useful Data

Not all information helps answer our question. If we're counting classroom supplies:

- Useful data: Number of pencils, erasers, rulers
- Not useful: What we ate for lunch, favorite colors

Choose data that connects to your question.

Critical Thinking Questions

1. What are three ways computers help us collect data?
2. How does sorting data help us understand it better?
3. Why is some data useful and other data not useful for answering a question?

Sentence Stems

- "I collected data about (blank) using (blank)."
- "The pattern in my data shows (blank)."
- "This data helps answer my question because (blank)."

Questions (5)

1. What is data?

MULTIPLE CHOICE

Choose the correct answer:

- A. A game you play with friends
- B. A picture you draw
- C. Information you collect to learn about something
- D. A story you write

2. What does a bar graph help you do?

MULTIPLE CHOICE

Choose the correct answer:

- A. Draw pictures
- B. Compare different amounts of data
- C. Write stories
- D. Create games

3. What is a pattern in data?

MULTIPLE CHOICE

Choose the correct answer:

- A. Something that repeats
- B. Something that never happens again
- C. A chart full of random numbers
- D. A type of picture

4. How can we make predictions from data?

MULTIPLE CHOICE

Choose the correct answer:

- A. By guessing randomly
- B. By looking for patterns in the data
- C. By ignoring the data
- D. By closing our eyes

5. What kind of data might you collect about playground games?

MULTIPLE CHOICE

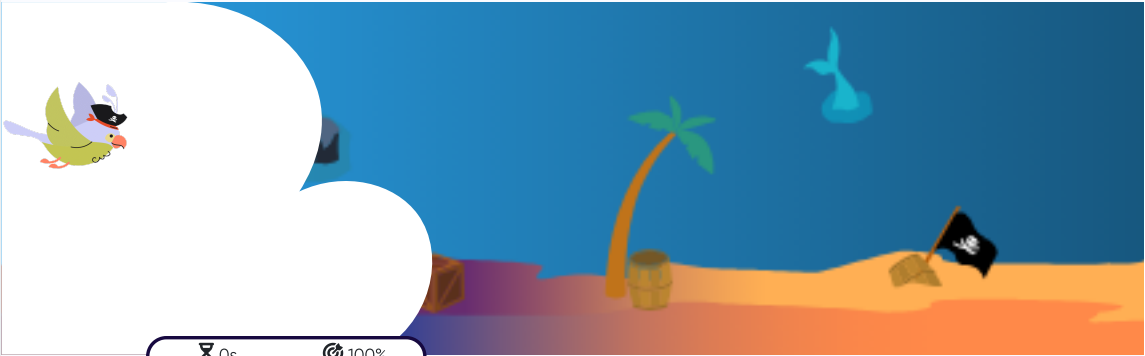
Choose the correct answer:

- A. The size of the playground
- B. The color of the swings
- C. The number of kids on the swings and playing basketball
- D. The height of the trees

Games (3)

1. Data Typing Race

Full Screen Audio Instructions Restart Pause



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2. Data Collection Matching

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All

Check Matches

Attempts: 0

Looking at patterns


Collecting data

Graph the data

Can guess what happens next

Make it easier to understand

Helps see things more clearly



3. Data Collection Ordering

Full Screen

Audio

Instructions

Answer Key

Pause

Clear All

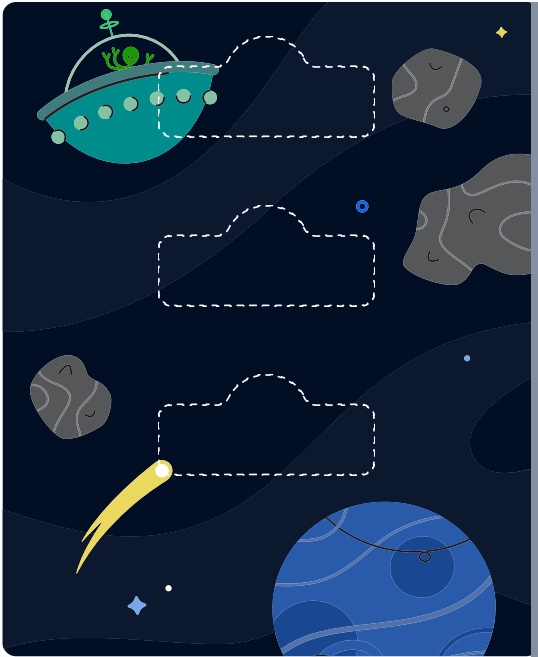
Check Matches


Attempts: 0

Predict what snack might be liked the most if you ask 3 more people.

Collect data on what people's favorite snack is to eat.

Take the data and make a bar graph or tally chart.





Blocks Challenges (5)

1. Favorite Foods



Favorite Foods

Ask 6 classmates their favorite dessert: cake or cookies.
Using the cake and cookie sprites, program each to say the data you collected.

2 2 2



Submit ↑



2. Collect that Data!



Collect that Data!

Program one sprite to walk around the school background
and ask at least 2 other sprites, "favorite class" and have the
other sprites answer.

3 10 4 3



Submit ↑



3. Favorite animal



Favorite animal

Your sprite collected the following data from classmates on their favorite animal.

Dog: 4

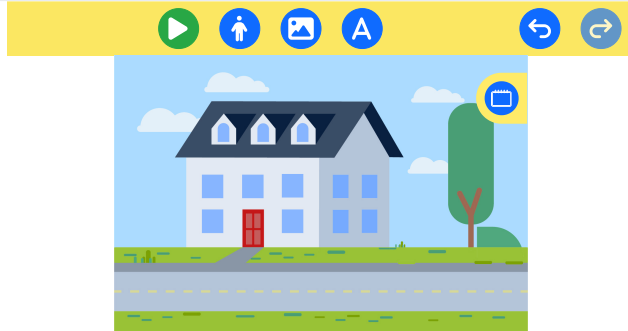
Cat: 2

Monkey: 3

Program each of those sprites to say their number when your person sprite moves by them. Use the on touch event block for the animals to start their code.

4 8 3 3

Submit ↑



4. Zoo Visit



Zoo Visit

The class is going to the zoo! Before going, the class took a poll on where to visit first.

The giraffes: 13

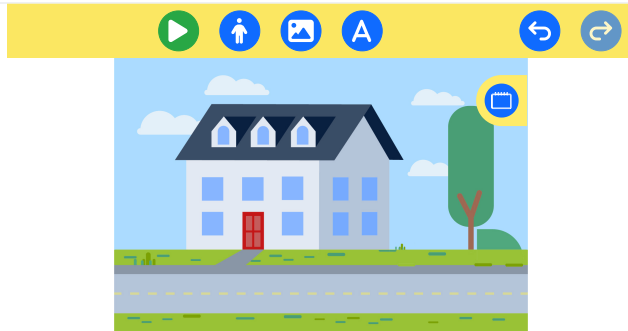
The monkeys: 8

The reptiles (snakes): 2

Using a person sprite, a giraffe, a monkey, and snake, have your sprite visit each animal in the order of the poll. Use the motion blocks to have each animal move when you reach them.

4 20 4

Submit ↑



5. Patterns



Patterns

Using the different shape sprites, create a pattern on your scene. Then have another sprite move along the pattern saying what patterns are and how they are a part of data.

○ 1 ➔ 10 ○ 3 ● 1



Submit ↑



Answer Keys & Solutions

Questions

1. What is data?

MULTIPLE CHOICE

Correct Answer:

- A. A game you play with friends ✗ Incorrect
- B. A picture you draw ✗ Incorrect
- C. Information you collect to learn about something ✓ Correct
- D. A story you write ✗ Incorrect

Explanation:

Data is the information you gather to learn more about something.

2. What does a bar graph help you do?

MULTIPLE CHOICE

Correct Answer:

- A. Draw pictures ✗ Incorrect
- B. Compare different amounts of data ✓ Correct
- C. Write stories ✗ Incorrect
- D. Create games ✗ Incorrect

Explanation:

A bar graph uses bars to show amounts of things.

3. What is a pattern in data?

MULTIPLE CHOICE

Correct Answer:

- A. Something that repeats ✓ Correct

B. Something that never happens again

✗ Incorrect

C. A chart full of random numbers

✗ Incorrect

D. A type of picture

✗ Incorrect

Explanation:

A pattern is something you see happening over and over.

4. How can we make predictions from data?

MULTIPLE CHOICE

Correct Answer:

A. By guessing randomly

✗ Incorrect

B. By looking for patterns in the data

✓ Correct

C. By ignoring the data

✗ Incorrect

D. By closing our eyes

✗ Incorrect

Explanation:

Patterns help us predict what might happen next!

5. What kind of data might you collect about playground games?

MULTIPLE CHOICE

Correct Answer:

A. The size of the playground

✓ Correct

B. The color of the swings

✗ Incorrect

C. The number of kids on the swings and playing basketball

✗ Incorrect

D. The height of the trees

✗ Incorrect

Explanation:

You can collect data by counting how many kids are playing different games.

1. Data Typing Race

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

2. Data Collection Matching

Matching Game Solutions:

1. →
2. →
3. →

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

3. Data Collection Ordering

Correct Order:

1. Collect data on what people's favorite snack is to eat.
2. Take the data and make a bar graph or tally chart.
3. Predict what snack might be liked the most if you ask 3 more people.

Scoring:

- Gold: 1 attempts or fewer
- Silver: 2 attempts or fewer
- Bronze: 3 attempts or fewer

Students must arrange items in the correct sequence.