Unit: Data and Society Lesson-Interpreting Data
Computer Science Discoveries
Grade 7

How can patterns in data help us make decisions?

- What's your favorite cake flavor?
- What's your favorite cake frosting/icing flavor?

	Cake Flavor	Icing Flavor
1	Chocolate Cake	Chocolate Icing
2	Red Velvet Cake	Cream Cheese Icing
3	Chocolate Cake	Chocolate Icing
4	Carrot Cake	Cream Cheese Icing
5	Carrot Cake	Vanilla Icing
6	Chocolate Cake	Chocolate Icing
7	Chocolate Cake	Cream Cheese Icing
8	Carrot Cake	Cream Cheese Icing

- Here are some survey results from 8 people about their favorite cake and icing/frosting flavors.
- What do you notice?

	Cake Flavor	Icing Flavor
1	Chocolate Cake	Chocolate Icing
2	Red Velvet Cake	Cream Cheese Icing
3	Chocolate Cake	Chocolate Icing
4	Carrot Cake	Cream Cheese Icing
5	Carrot Cake	Vanilla Icing
6	Chocolate Cake	Chocolate Icing
7	Chocolate Cake	Cream Cheese Icing
8	Carrot Cake	Cream Cheese Icing

If people had to **agree on one cake and frosting/icing** combination for a party, what should it be based on the data? Why?

	Cake Flavor	Icing Flavor
1	Chocolate Cake	Chocolate Icing
2	Red Velvet Cake	Cream Cheese Icing
3	Chocolate Cake	Chocolate Icing
4	Carrot Cake	Cream Cheese Icing
5	Carrot Cake	Vanilla Icing
6	Chocolate Cake	Chocolate Icing
7	Chocolate Cake	Cream Cheese Icing
8	Carrot Cake	Cream Cheese Icing

- Although chocolate was the most popular cake flavor and cream cheese was the most popular icing flavor, only one person chose it
- It's not enough to look at the two answers in isolation.
- For example, if two cakes are chosen, chocolate cake with chocolate icing and carrot cake with cream cheese icing is much better than chocolate with cream cheese and carrot with chocolate.
- Looking at the relationships between answers helps to see which choices go well together.

1. How do you define data?
2. What are examples of data you use?
3. Why should we care about data?

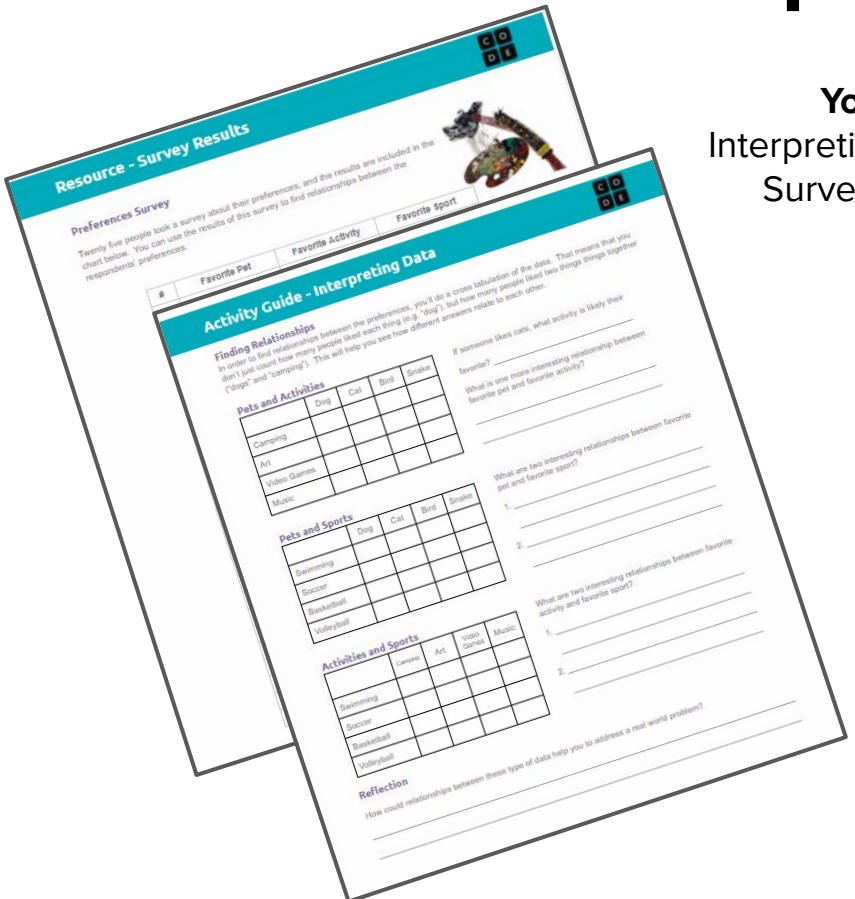
- Data: Information.
    - Often, quantities, characters, or symbols that are the inputs and outputs of computer programs.

- “If you can’t measure it, you can’t improve it” -Peter Drucker

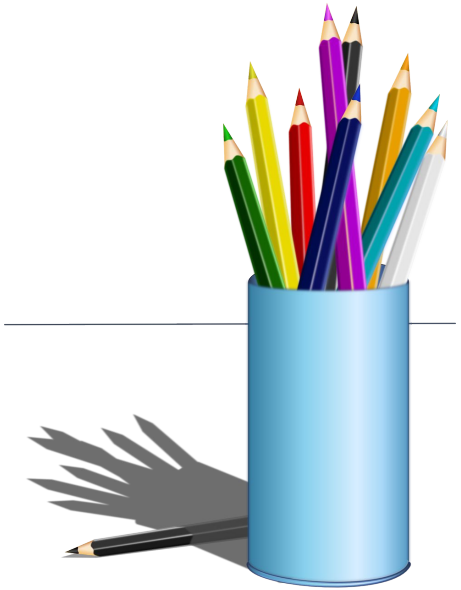
How can patterns in data help us make decisions?

Activity

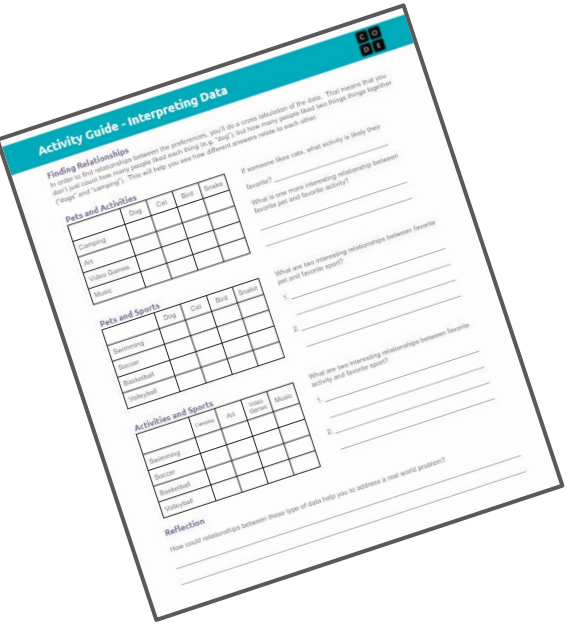
Interpreting Data



You should have:
Interpreting Data Activity Guide
Survey Results Resource
Pen/Pencil



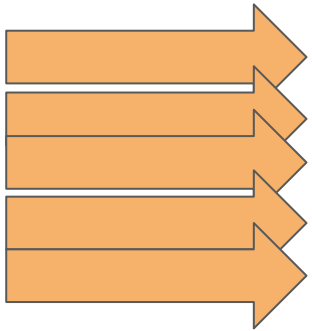
Finding Relationships



In order to find relationships between the preferences, you'll do a cross tabulation of the data.

That means that you don't just count how many people liked each thing, but how many people liked two things together ("dogs" and "camping"). This will help you see how different answers relate to each other.

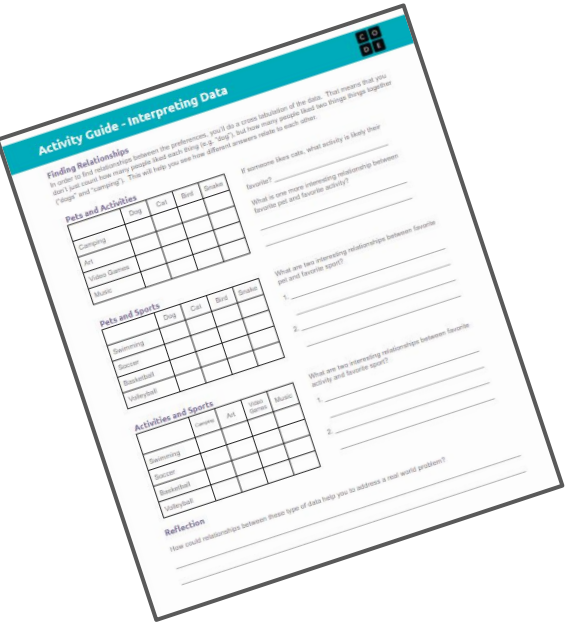
Finding Relationships Example



#	Favorite Pet	Favorite Activity	Favorite Sport
1	Cat	Art	Soccer
2	Cat	Art	Basketball
3	Dog	Video Games	Soccer
4	Cat	Art	Soccer
5	Dog	Video Games	Soccer

Pets and Activities

	Dog	Cat	Bird	Snake
Camping				
Art		III		
Video Games	II			
Music				


Activity Guide - Interpreting Data

Finding Relationships

Pets and Activities

	Dog	Cat	Bird	Snake
Gaming				
Art				
Video Games				
Music				

If someone likes cats, what activity is likely their favorite? _____

What is one more interesting relationship between favorite pet and favorite activity?

Pets and Sports

	Dog	Cat	Bird	Snake
Swimming				
Soccer				
Basketball				
Volleyball				

What are two interesting relationships between favorite pet and favorite sport?

1. _____
2. _____

Activities and Sports

	Gaming	Art	Video Games	Music
Swimming				
Soccer				
Basketball				
Volleyball				

What are two interesting relationships between favorite activity and favorite sport?

1. _____
2. _____

Reflection

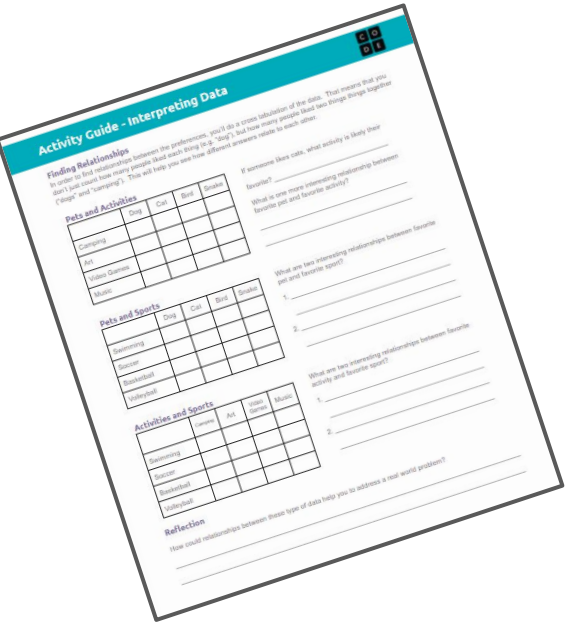
How could relationships between these type of data help you to address a real world problem?

Prompt

If someone likes cats, what activity is probably their favorite?

What is one more interesting relationship between favorite pet and favorite activity?

Do This


Activity Guide - Interpreting Data

Finding Relationships

Pets and Activities

	Dog	Cat	Bird	Snake
Camping				
Art				
Video Games				
Music				

If someone likes cats, what activity is likely their favorite? _____

What is one more interesting relationship between favorite pet and favorite activity?

Pets and Sports

	Dog	Cat	Bird	Snake
Swimming				
Soccer				
Basketball				
Volleyball				

What are two interesting relationships between favorite pet and favorite sport?

1. _____
2. _____

Activities and Sports

	Concert	Art	Video Games	Movies
Swimming				
Soccer				
Basketball				
Volleyball				

What are two interesting relationships between favorite activity and favorite sport?

1. _____
2. _____

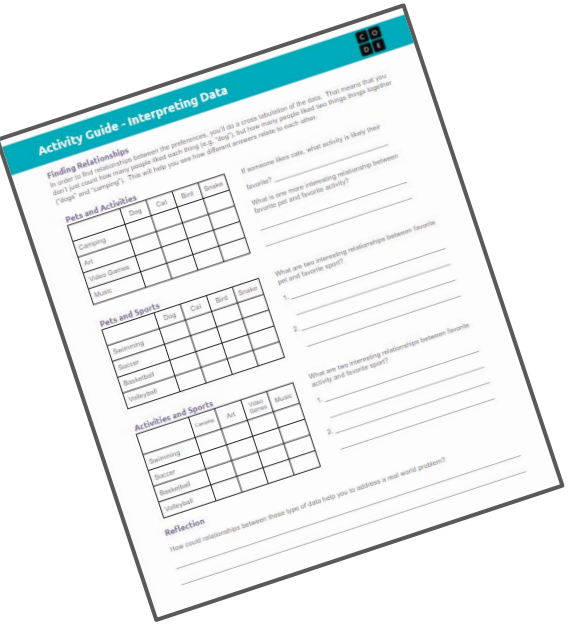
Reflection

How could relationships between these type of data help you to address a real world problem?

Continue working through this activity guide and complete one of the remaining two tables.

Be sure to answer the questions for your table.

Share Out


Activity Guide - Interpreting Data

Finding Relationships

Pets and Activities

	Dog	Cat	Bird	Snake
Gaming				
Art				
Video Games				
Music				

Pets and Sports

	Dog	Cat	Bird	Snake
Swimming				
Soccer				
Basketball				
Volleyball				

Activities and Sports

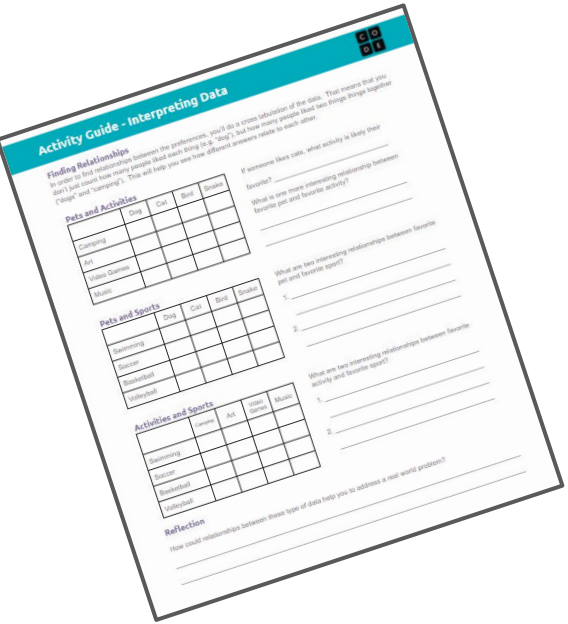
	Gaming	Art	Video Games	Music
Swimming				
Soccer				
Basketball				
Volleyball				

Reflection

How could relationships between these type of data help you to address a real world problem?

What interesting patterns have you noticed when creating these cross-tab tables?

Summary


Activity Guide - Interpreting Data

Finding Relationships

Pets and Activities

	Dog	Cat	Bird	Snake
Camping				
Art				
Video Games				
Music				

Pets and Sports

	Dog	Cat	Bird	Snake
Swimming				
Soccer				
Basketball				
Volleyball				

Activities and Sports

	Camp	Art	Video Games	Music
Swimming				
Soccer				
Basketball				
Volleyball				

If someone likes cats, what activity is likely their favorite?

What is one more interesting relationship between favorite pet and favorite activity?

What are two interesting relationships between favorite pet and favorite sport?

1.

2.

What are two interesting relationships between favorite activity and favorite sport?

1.

2.

Reflection

How could relationships between these type of data help you to address a real world problem?

How could knowing relationships between these types of preferences help you to address a real world problem?

Homework

- What's another data problem you could think of that you could use this method to help solve?
- What questions would you ask?
- What relationships would you look for?