



# Data Detective: Lesson 1

What Makes a Good Question?

Name: \_\_\_\_\_

Date: \_\_\_\_\_



## Activity 1: Survey Detective Challenge

These survey questions have problems! Can you spot what's wrong and fix them?

1

*"Do you like pizza or hate vegetables?"*

**What's wrong?**

\_\_\_\_\_

**Better question:**

\_\_\_\_\_

2

*"How many times do you eat?"*

**What's wrong?**

\_\_\_\_\_

**Better question:**

\_\_\_\_\_

3

*"Rate food 1-10"*

**What's wrong?**

---

**Better question:**

---



## Activity 2: Match the Question Type

Draw lines to match each question with its type and best graph!

Question Example	Question Type	Best Graph
"Do you have a pet?"	_____	_____
"What's your favorite subject?"	_____	_____
"Which sports do you play?" (pick all)	_____	_____
"Rate your love of math 1-5"	_____	_____
"Hours of sleep per night?"	_____	_____

**Word Bank:** Yes/No • Multiple Choice • Check All • Likert Scale • Numeric • Pie Chart • Bar Chart • Line Graph • Histogram • Multiple Bar Charts

## Did You Know?

The U.S. Census is the largest survey in America, asking questions to over 330 million people!

### Activity 3: Design Your First Survey

**Topic:** Classroom Preferences - Let's find out what makes the perfect learning environment!

#### 1. Write a Yes/No Question:

---

Example: "Do you prefer working in groups?"

#### 2. Write a Multiple Choice Question (include 4 options):

---

A) \_\_\_\_\_ B) \_\_\_\_\_  
C) \_\_\_\_\_ D) \_\_\_\_\_

#### 3. Write a "Check All That Apply" Question:

---

List at least 5 options below:

---

---

#### 4. Write a Likert Scale (1-5) Question:

---

Define your scale: 1 = \_\_\_\_\_ 5 = \_\_\_\_\_

#### 5. Write a Numeric Question:

---

What range of numbers do you expect? Min: \_\_\_\_ Max: \_\_\_\_



## Activity 4: Pattern Prediction

Before collecting data, what patterns do you think you'll find?

**My Hypothesis:** I think students who \_\_\_\_\_ will be more likely to

\_\_\_\_\_

**Why I think this:**

**How many people should I survey to test this?**

\_\_\_\_\_



## Reflection Corner

1. Why is it important to ask clear questions in a survey?

2. What surprised you most about survey design today?

3. What topic would YOU like to investigate with a survey?



### Lesson 1 XP Checklist



Fixed bad  
questions (+5  
XP)



Matched question  
types (+5 XP)



Designed  
survey (+10  
XP)



Completed  
reflection (+5 XP)

Total XP Earned: \_\_\_\_\_ / 25

## **Bonus Challenge: Survey Science**

For +10 BONUS XP, answer these critical thinking questions:

**1. Sample Size Mystery:** If you only survey your 5 best friends about favorite pizza toppings, why might your results not represent all 5th graders?

**2. Bias Buster:** How could the question "Don't you think homework is boring?" influence someone's answer?

**3. Hidden Variables:** If you find that kids who play sports get better grades, what other factors might explain this pattern?