

STUDENT MATERIALS

PART 1 – CREATE A TWO-WAY TABLE

Michaela made a claim that middle school helps students decide what they want to be when they grow up. She decided to test her claim by surveying random students at her school.

Here are the questions she asked them:

- What grade are you in?
- Do you know what you want to be when you grow up?

Use the facts below to complete Michaela's two-way table.

- Michaela surveyed a total of 35 Grade 6 students.
- Of all of the students Michaela surveyed, 90 knew what they wanted to be when they grew up.
- Of the Grade 7 students Michaela surveyed, 30 knew what they wanted to be when they grew up and 15 did not.
- Of the Grade 8 students Michaela surveyed, 40 knew what they wanted to be when they grew up.
- In all, Michaela surveyed 130 students

$$\begin{array}{r} 35 \\ + 45 \\ \hline 80 \end{array} \quad \begin{array}{r} 130 \\ - 80 \\ \hline 50 \end{array}$$

	Know what they want to be	Do NOT know what they want to be	TOTAL
Grade 6 Students	20	15	35
Grade 7 Students	30	15	45
Grade 8 Students	40	10	50
TOTAL	90	40	130

$$\begin{array}{r} 40 \\ + 30 \\ \hline 70 \\ + 20 \\ \hline 90 \end{array}$$

PART 2 – ANALYZE A TWO-WAY TABLE

Mable was at a football party when the University of Michigan was playing Michigan State. Before the game, each fan completed a survey and answered these questions:

- Are you a Michigan State fan or a University of Michigan fan?
- Do you like the color green or blue better?

Mable created a two-way table of the results.

	Prefers BLUE	Prefers GREEN	
University of Michigan Fan	120	15	135
Michigan State University Fan	12	80	92
	132	95	TOTAL 227

Answer the following questions based on Mable's data. **Provide clear mathematical evidence to support your claims in your responses.**

- Each fan will receive a cookie with the school's mascot. What percent of the cookies that are ordered should be Michigan State University cookies? Remember to support your claim.

$$92 / 227 = 0.405 \times 100 = 40.5$$

$$\begin{array}{r} 40.5 \\ + 59.5 \\ \hline 100 \end{array}$$

40.5 % of the cookies
should be MSU

$$135 / 227 = 0.5947 \times 100 = 59.5$$

2. If Mable chose a person at random, which person is Mable more likely to find at the party?

- A University of Michigan fan who prefers green
- or
- A Michigan State University fan who prefers blue

Mable is more likely to find

- ☐ A University of Michigan fan who prefers green
- ☒ A Michigan State University fan who prefers blue

Support for your claim:

There are $\frac{15}{135}$ UoFM fans who prefer green,
but $\frac{12}{92}$ who prefer blue that are MSU fans

UoFM	120 = 88.9%	15 = 11.1%	135
MSU	12 = 13%	80 = 87%	92

$$13\% > 11.1\%$$

3. Ten (10) more University of Michigan fans (who prefer blue) showed up late to the party.
How many total people were at the football party after the late fans arrived?

237

	130	15	145
	12	80	92
	142	95	237

PART 3 – REFLECTION

Respond to each of the following reflection questions:

1. What strategies did you use, if any, to check that the two-way table you completed in Part 1 was correct?

I divided the number given by the total. To find the answer to the question about the cookies I divided 92 by 229 which is the total MSU fans by the total amount of people surveyed. I got 40.5%, to check my answer I did the same process for UofM, I then added the two to make sure it equaled 100%

2. What did you find challenging or difficult about the assessment items? How did you overcome those challenges?

At first I found what I had to multiply a little difficult but then I payed attention to the wording and eventually figured it out.