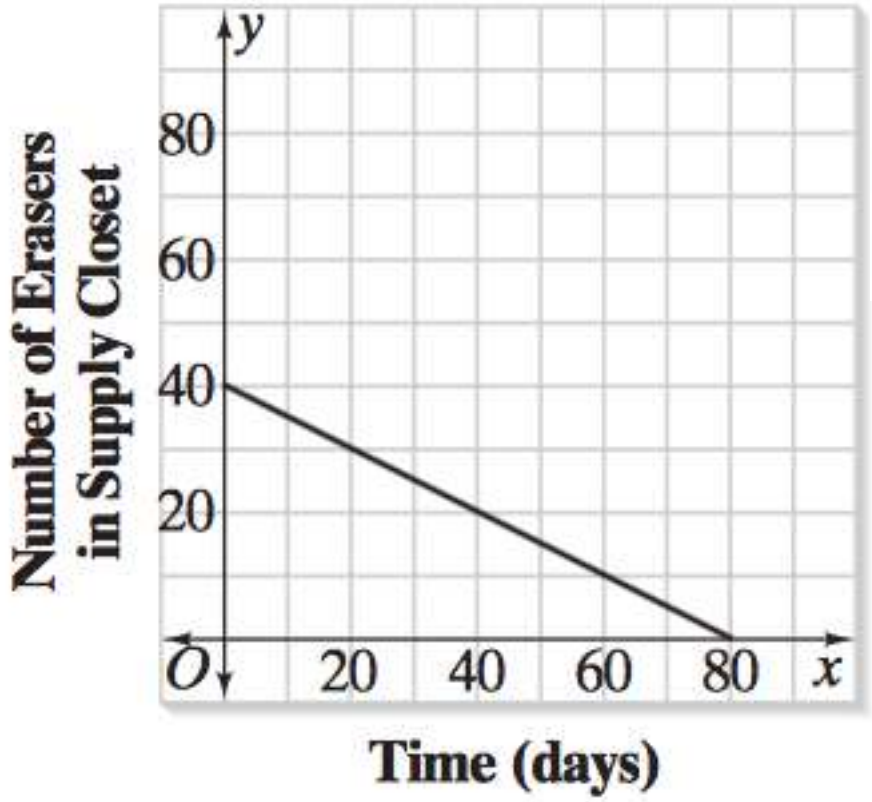
Two-Way Tables Introduction

Warm-Up

At the beginning of each school year, Principal Sao stocks the teachers' supply closet with new erasers. The graph below shows the change in number of erasers in the supply closet over time. The relationship can be represented by the equation $y = -\frac{1}{2}x + 40$.



Find the x- and y-intercepts of the graph. Explain what each intercept means in the context of the problem.

Opening

- Watch a video introduction to two-way tables accessed at the following link:

https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-data/two-way-tables/v/two-way-frequency-tables-and-venn-diagrams

Opening

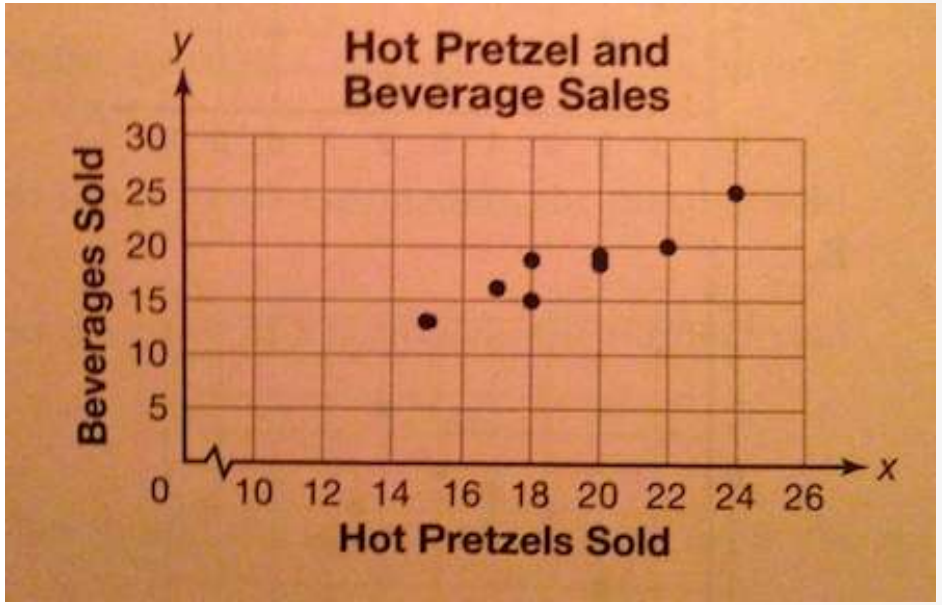
Play a Sport Don't play a musical instrument		
Don't play a sport, Do play a musical instrument		
Play a sport and a musical instrument		
Don't play a sport or a musical instrument		

Instrument/Sport	YES	NO	Total
YES			
NO			
Total			

Two-Way Tables and Relative Frequencies

Warm-Up

The scatter plot below compares the number of hot pretzels sold at a concession stand to the number of beverages sold.



1. Draw a line a best fit.
2. Identify the type of correlation and explain what that means in the context of the problem.
3. Write the equation of the line of best fit.

Opening

Ten students in a class were asked two questions. They were asked if they do chores at home or not. They were then asked if they receive an allowance or not. The results are shown below.

Student Survey

Student	Abby	Bella	Chris	Deb	Erin	Frank	Gus	Hal	Isadore	John
Chores	Yes	Yes	No	No	No	Yes	Yes	Yes	No	Yes
Allowance	Yes	Yes	No	No	No	Yes	Yes	No	Yes	No

	Allowance	No Allowance	TOTAL
Chores			
No Chores			
TOTAL			

Opening

Relative frequency:

How often something happens divided by all outcomes.

- **Can be calculated by row or columns to determine information.**
- **Must add up to 1.00 or 100%**

Example: 3 out of 4 students prefer dogs to cats

- **proportion is ¾**
- **relative frequency is 3 divided by 4 or ≈ 0.75 or percent of 75%**

Opening

Look back at the two-way table in Example 3. Can you conclude that students who get an allowance are more likely to do chores than students who do not? Find the relative frequency and see.

	Allowance	No Allowance	TOTAL
Chores	4	2	6
No Chores	1	3	4
TOTAL	5	5	10

	Allowance	No Allowance	TOTAL
Chores			
No Chores			
TOTAL			

Two-Way Tables/Unit 6 Review

Warm-Up

Create a two-way table and a relative frequency table by rows for the following information:

The director had 205 dancers with mixed skills. 72 dancers were trained in both folk and classical dance. 43 trained in classical dance, but not folk. 62 dancers were not trained in either discipline.

Warm-Up/Opening

The director had 205 dancers with mixed skills. 72 dancers were trained in both folk and classical dance. 43 trained in classical dance, but not folk. 62 dancers were not trained in either discipline.

	YES FOLK	NO FOLK	TOTAL
YES CLASSICAL	72	43	115
NO CLASSICAL	28	62	90
TOTAL	100	105	205

	YES FOLK	NO FOLK	TOTAL
YES CLASSICAL	72	43	115
NO CLASSICAL	28	62	90
TOTAL	100	105	205

.48 .373 0.626 by row

	YES FOLK	NO FOLK	TOTAL
YES CLASSICAL	$\frac{72}{115}=0.63=63\%$	$\frac{43}{115}=0.37=37\%$	100% ✓
NO CLASSICAL	$\frac{28}{90}=0.31=31\%$	$\frac{62}{90}=0.69=69\%$	1.00 ✓
TOTAL	$\frac{100}{205}=0.49=49\%$	$\frac{105}{205}=.51=51\%$	100% ✓