Proportional relationships have the same **equivalent ratios** and **unit rate**.

Non-proportional relationships have different ratios.

Proportional Relationship

Distance Time Table		Ratios	
Time (hrs)	Distance Walked (miles)	Equivalent Ratios mi/hr	Same Unit Rate
1	4	$\frac{4 \text{ mi}}{1 \text{ hr}}$	4 mph
2	8	$\frac{8 \text{ mi}}{2 \text{ hr}}$	4 mph
4	16	$\frac{16 \text{ mi}}{4 \text{ hr}}$	4 mph
6	24	$\frac{24 \text{ mi}}{6 \text{ hr}}$	4 mph

Non-Proportional Relationship

Distance Time Table		Ratios	
Time (hrs)	Distance Walked (miles)	Non-Equivalent Ratios	Different Unit Rates
1	4	$\frac{4 \text{ mi}}{1 \text{ hr}}$	4 mph
2	12	$\frac{12 \text{ mi}}{2 \text{ hr}}$	6 mph
4	20	$\frac{20 \text{ mi}}{4 \text{ hr}}$	5 mph
6	28	$\frac{28 \text{ mi}}{6 \text{ hr}}$	4.2 mph

💬 CFU

Determine if the **cost** of **coffee** is **proportional** to the number of **pounds** bought. Explain.

Coffee (lbs.)	Cost ($)	Unit Rate
1	3	3/1 = $3 per pound
2	6	6/2 = $3 per pound
3	9	9/3 = $3 per pound
4	12	12/4 = $3 per pound

Determine if the **cost** for renting a boat is proportional to the **rental time**. Explain.

Rental Time (h)	Cost ($)	Unit Rate
1	27	27/1 = $27 per hour
2	42	42/2 = $21 per hour
3	57	57/3 = $19 per hour

1. Calculate the equivalent ratio in each row. (write)
2. Calculate unit rates in each row. (write)
3. Determine if the table shows a proportional relationship. (write)

1. Does the table show a proportional relationship between profits and days worked? Explain.

Time (day)	Profit (dollar)	Equivalent Ratio	Unit Rate
1	5		
2	10		
3	15		
4	20		

"The table (does/does not) _____ show a proportional relationship because..."

2. Does the table show a proportional relationship between profits and days worked? Explain.

Time (day)	Profit (dollar)	Equivalent Ratio	Unit Rate
1	5		
2	12		
3	24		
4	28		

"The table (does/does not) _____ show a proportional relationship because..."

1. Calculate the equivalent ratio in each row. (write)
2. Calculate unit rates in each row. (write)
3. Determine if the table shows a proportional relationship. (write)

3. For how many days do profits show a proportional relationship to number of days worked? Explain.

Time (day)	Profit (dollar)	Equivalent Ratio	Unit Rate
1	50		
2	100		
3	150		
4	240		

"Profits per day were proportional for _____ days because…"

4. For how many days do profits show a proportional relationship to number of days worked? Explain.

Time (day)	Profit (dollar)	Equivalent Ratio	Unit Rate
1	12		
2	24		
3	39		
4	44		

"Profits per day were proportional for _____ days because…"

Skill Closure

1. Calculate the equivalent ratio in each row. (write)
2. Calculate unit rates in each row. (write)
3. Determine if the table shows a proportional relationship. (write)

1. Is distance proportional to time?

Time (sec)	Distance (ft)	Ratio	Unit Rate
1	8		
3	21		
5	30		
7	35		

"Distance traveled (is/is not) _____ proportional to time because…"

2. Is distance proportional to time?

Time (sec)	Distance (ft)	Ratio	Unit Rate
1	5		
4	20		
8	40		
12	60		

"Distance traveled (is/is not) _____ proportional to time because…"

Concept Closure

Read the problem and write your explanation.

Daniel believes the missing y-value should be 3 for the table to show a proportional relationship. Is he correct? Explain.

x	y	Unit Rate (k)
1	5	5
4	20	5
15	?	5
20	100	5

_____

_____

_____

Summary Closure

What did you learn today about identifying proportional relationships in tables?

_____

_____

_____

Word Bank

proportional relationship

non-proportional relationship

equivalent ratios

unit rate

1. Identify the ratio in each row. (write)
2. Determine the unit rate in each row. (write)
3. Verify if the unit rates are equal. (check)
4. Determine if the table shows a proportional relationship. (write)

1. Is cost proportional to pounds bought?

Weight (lbs)	Cost (dollar)	Ratio	Unit Rate
1	9		
2	18		
5	45		
8	72		

"Pounds bought (is/is not) _____ proportional to weight because…"

2. Is cost proportional to pounds bought?

Weight (lbs)	Cost (dollar)	Ratio	Unit Rate
2	14		
3	21		
4	28		
5	35		

"Pounds bought (is/is not) _____ proportional to weight because…"

3. Does the table show a proportional relationship between the distance insect "A" moved and time? Explain.

Time (min)	Distance (ft)	Ratio	Unit Rate
1	8		
2	10		
3	12		

"The table (does/does not) _____ show a proportional relationship because..."

4. Does the table show a proportional relationship between the distance insect "B" moved and time? Explain.

Time (min)	Distance (ft)	Ratio	Unit Rate
3	6		
5	10		
9	18		

"The table (does/does not) _____ show a proportional relationship because..."

Determine if the relationship is proportional.

1. Silver chain is sold by the inch. Is the cost proportional to the length purchased?

Length (in)	Cost (dollar)	Ratio	Unit Rate
2	8		
4	16		
6	24		
8	32		

"The cost (is/is not) _____ proportional to the length purchased because…"

2. Gold chain is sold by the inch. Is the cost proportional to the length purchased?

Length (in)	Cost (dollar)	Ratio	Unit Rate
1	6		
5	30		
9	54		
10	50		

"The cost (is/is not) _____ proportional to the length purchased because…"

Read the problem and write your explanation.
Winston believes that the table does not show a proportional relationship. Is he correct? Explain.

Time (years)	Height (inches)
5	60
15	180
35	420
50	600

Determine if the relationship is proportional.

1. Costs of water pipe "A."

Length (ft)	Cost (dollar)	Ratio	Unit Rate
4	12		
7	21		
10	30		
13	39		

"The cost (is/is not) _____ proportional to the length purchased because…"

2. Costs of water pipe "B."

Length (ft)	Cost (dollar)	Ratio	Unit Rate
1	9		
2	18		
3	24		
5	35		

"The cost (is/is not) _____ proportional to the length purchased because…"

Read and solve the problem. Fill in the missing values to make the tables show proportional relationships.

Boxes	Apples
7	56
8	
	80
11	

Apples per box = _____

Volume (gallons)	Time (minutes)
1	
2	400
3	
	1000

Gallons per minute = _____

Create your own proportional relationships.
Be ready to explain to the class.

1.

Length (ft)	Cost (dollar)	Ratio	Unit Rate

"**This is a proportional relationship because…**"

2.

Length (ft)	Cost (dollar)	Ratio	Unit Rate

"**This is a proportional relationship because…**"