We will identify proportional relationships in tables.

Concept Development

Proportional relationships have a **constant unit rate.**
Non-proportional relationships do not have a constant unit rate.

Unit Rates	
$\frac{1}{\text{amount}}$	$\frac{\text{amount}}{1}$

Proportional Relationship

Distance Traveled (miles)	4	8	16	24
Time (hour)	1	2	4	6
Unit Rate	4 mph	4 mph	4 mph	4 mph

Non-Proportional Relationship

Distance Traveled (miles)	3	8	20	36
Time (hour)	1	2	4	6
Unit Rate	3 mph	4 mph	5 mph	6 mph

CFU

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

Cost (dollar)	3	6	9	12
Coffee (pound)	1	2	3	4
Unit Rate	\$3/lb	\$3/lb	\$3/lb	\$3/lb

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

Cost (dollar)	27	42	57	64
Rental Time (hour)	1	2	3	4
Unit Rate	\$27/hr	\$21/hr	\$19/hr	\$16/hr

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

1. Calculate the unit rates. Is profit proportional to days worked? Explain.

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

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

2. Calculate the unit rates. Is profit proportional to days worked? Explain.

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

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

Unit Rates	
$\frac{1}{\text{amount}}$	$\frac{\text{amount}}{1}$

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

3. A tutor claims to earn a constant hourly wage of $25 per hour. Does the table support the claim? Explain.

Earnings (dollar)	25	50	75	100
Time (hr)	1	2	3	4
Unit Rate				

"The tutor's claim (is/is not) _____ correct because…"

4. A custom print shop advertises: "Stickers are $3 each!" A customer looks at the price board for bulk orders. Does the table show a proportional relationship? Explain.

Cost (dollars)	15	30	50	80
Stickers	5	10	25	40
Unit Rate				

"The table _____ show a proportional relationship because"

Unit Rates	
$\frac{1}{\text{amount}}$	$\frac{\text{amount}}{1}$

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We will identify proportional relationships in tables.	Closure

Skill Closure

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

1. Calculate the unit rates. Is the runner's distance proportional to time? Explain.

Distance (foot)	8	21	30	35
Time (second)	1	3	5	7
Unit Rate				

"The relationship _____ proportional because…"

2. A runner claims to maintain a constant speed. Does the table support the claim?

Distance (foot)	5	20	40	60
Time (second)	1	4	8	12
Unit Rate				

"The claim _____ correct because…"

Concept Closure

Read the problem and write your explanation.
Daniel says the table shows a proportional relationship because the number of pens increases as the number of boxes increases. Is Daniel correct? Explain.

Boxes	Pens	Unit Rate
1	5	5
4	20	5
15	60	4
20	100	5

Unit Rates	
$\frac{1}{\text{amount}}$	$\frac{\text{amount}}{1}$

Summary Closure

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

Word Bank
proportional relationship
non-proportional relationship
equivalent ratios
unit rate

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

1. Is cost proportional to pounds bought? Explain.

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

"Cost (is/is not) _____ proportional to pounds bought because…"

2. Is cost proportional to pounds bought? Explain.

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

"Cost (is/is not) _____ proportional to pounds bought because…"

Unit Rates	
$\frac{1}{\text{amount}}$	$\frac{\text{amount}}{1}$

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

3. A researcher claims insect A moves at a constant speed. Does the table support the claim?

Researcher Notes – Insect "A"

Distance (foot)	8	14	15	16
Time (minute)	1	2	3	4
Unit Rate				

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

4. A researcher claims insect B moves at a constant speed. Does the table support the claim?

Researcher Notes – Insect "B"

Distance (foot)	6	10	18	30
Time (minute)	3	5	9	15
Unit Rate				

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

Unit Rates	
$\frac{1}{\text{amount}}$	$\frac{\text{amount}}{1}$

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Determine if the relationship is proportional.

1. A jeweler claims silver-colored chains cost $4 per inch. Does the table support the claim?

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

"The cost of silver-colored chains (is/is not) _____ proportional to their length purchased because…"

2. A jeweler claims gold-colored chains cost $6 per inch. Does the table support the claim?

Cost (dollar)	6	30	54	60
Length (inch)	1	5	9	12
Unit Rate				

"The cost of gold-colored chains (is/is not) _____ proportional to their length purchased because…"

Read the problem and write your explanation.

Winston says a cyclist's distance traveled is not proportional to time. Is he correct? Explain.

Time (hours)	Distance (miles)
1	12
2	24
3	36
4	48

Unit Rates	
$\frac{1}{\text{amount}}$	$\frac{\text{amount}}{1}$

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Determine if the relationship is proportional.

1. A supplier claims Type A pipe costs $3 per foot. Does the table support the claim?

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

"The cost of a "Type A" water pipe (is/is not) _____ proportional to its length purchased because…"

2. A supplier claims Type B pipe costs $9 per foot. Does the table support the claim?

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

"The cost of a "Type B" water pipe (is/is not) _____ proportional to its length purchased because…"

Unit Rates	
$\frac{1}{\text{amount}}$	$\frac{\text{amount}}{1}$

Read and solve the problem.

Complete both tables to make proportional relationships. Explain what each unit rate means.

Boxes	Apples
7	56
8	
	80
11	

8 Apples per box

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

200 Gallons per minute

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Create a real-life proportional table. Explain what its constant unit rate means.

1.

Unit Rate				

Create a real-life table that is NOT proportional. Explain which unit rates differ.

2.

Unit Rate				

Unit Rates	
$\frac{1}{\text{amount}}$	$\frac{\text{amount}}{1}$

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