

Ratios

UNIT RATES AND RATIONAL NUMBERS

DMTI Varied Practice Worksheets

This PowerPoint displays the worksheets that have varied situations (context, visual, equations, and other mathematical models) for children to work on. By completing these worksheets, children increase their foundational skills in the topic, which will help them with these standards and future mathematical topics.

1. If using a journal, have children present the worksheet and complete all the problems.
2. Or print the 'Varied Practice Worksheet Slide' for them to work on. Then, you can return to the PowerPoint to look at the keys to check their work.

Worksheet 1.1 – Ratios: Unit Rates

1. Use a bar model to determine the 2 unit rates for each situation: (1) miles per hour and (2) hours per mile
2. Use the unit rates to generate each equation.

Situation	Bar Model	Equations
Hiking 4 miles in 2 hours		
Hiking 12 miles in 3 hours		
Hiking 6 miles in 4 hours		

1. Use a bar model to determine the 2 unit rates for each situation: (1) miles per hour and (2) hours per mile
2. Use the unit rates to generate each equation.

Situation	Bar Model	Equations
Hiking 4 miles in 2 hours		$2M = H$ $\frac{1}{2}H = M$
Hiking 12 miles in 3 hours		$4M = H$ $\frac{1}{4}H = M$
Hiking 15 miles in 5 hours		$3M = H$ $\frac{1}{3}H = M$

Worksheet 1.2 – Ratios: Unit Rates

1. Use a bar model to determine the 2 unit rates for each situation: (1) miles per hour and (2) hours per mile
2. Use the unit rates to generate each equation.

Situation	Bar Model(s)	Equations
Hiking 8 miles in 6 hours		
Hiking 10 miles in 3 hours		
Hiking 6 miles in 4 hours		

1. Use a bar model to determine the 2 unit rates for each situation: (1) miles per hour and (2) hours per mile
2. Use the unit rates to generate each equation.


Situation	Bar Model(s)	Equations
Hiking 8 miles in 6 hours		$\frac{4}{3}M = H$ $\frac{3}{4}H = M$
Hiking 10 miles in 3 hours		$\frac{10}{3}M = H \text{ or } 3\frac{1}{3}M = H$ $\frac{3}{10}H = M$
Hiking 6 miles in 4 hours		$1\frac{1}{2}M = H$ $\frac{2}{3}H = M$

Worksheet 2.1 – Ratios: Rational Numbers

Context	Bar Model	Ratio Table												
<p>If I can hike 4 miles in 2 hours, how long would it take me to hike 9 miles?</p>														
		<table border="1"> <tr> <td data-bbox="1709 618 1849 743">Hours</td> <td data-bbox="1849 618 1974 743">4</td> <td data-bbox="1974 618 2099 743"></td> <td data-bbox="2099 618 2224 743"></td> <td data-bbox="2224 618 2349 743"></td> <td data-bbox="2349 618 2474 743">$3\frac{1}{2}$</td> </tr> <tr> <td data-bbox="1709 743 1849 826">Miles</td> <td data-bbox="1849 743 1974 826">12</td> <td data-bbox="1974 743 2099 826"></td> <td data-bbox="2099 743 2224 826"></td> <td data-bbox="2224 743 2349 826"></td> <td data-bbox="2349 743 2474 826">?</td> </tr> </table>	Hours	4				$3\frac{1}{2}$	Miles	12				?
Hours	4				$3\frac{1}{2}$									
Miles	12				?									
<p>If you can hike 9 miles in 3 hours, how long will it take to hike 10 miles?</p>														

Context	Bar Model	Ratio Table												
<p>If I can hike 4 miles in 2 hours, how long would it take me to hike 9 miles?</p>		<table border="1"> <tr> <td>Hours</td> <td>2</td> <td>4</td> <td>1</td> <td>$\frac{1}{2}$</td> <td>$4\frac{1}{2}$</td> </tr> <tr> <td>Miles</td> <td>4</td> <td>8</td> <td>2</td> <td>1</td> <td>9</td> </tr> </table>	Hours	2	4	1	$\frac{1}{2}$	$4\frac{1}{2}$	Miles	4	8	2	1	9
Hours	2	4	1	$\frac{1}{2}$	$4\frac{1}{2}$									
Miles	4	8	2	1	9									
<p>If you can hike 12 miles in 4 hours, how many miles can you hike in $3\frac{1}{2}$ hours?</p>		<table border="1"> <tr> <td>Hours</td> <td>4</td> <td>2</td> <td>1</td> <td>$\frac{1}{2}$</td> <td>$3\frac{1}{2}$</td> </tr> <tr> <td>Miles</td> <td>12</td> <td>6</td> <td>3</td> <td>$1\frac{1}{2}$</td> <td>$10\frac{1}{2}$</td> </tr> </table>	Hours	4	2	1	$\frac{1}{2}$	$3\frac{1}{2}$	Miles	12	6	3	$1\frac{1}{2}$	$10\frac{1}{2}$
Hours	4	2	1	$\frac{1}{2}$	$3\frac{1}{2}$									
Miles	12	6	3	$1\frac{1}{2}$	$10\frac{1}{2}$									
<p>If you can hike 9 miles in 3 hours, how long will it take to hike 10 miles?</p>		<table border="1"> <tr> <td>Hours</td> <td>3</td> <td>1</td> <td>$\frac{1}{3}$</td> <td>$3\frac{1}{3}$</td> </tr> <tr> <td>Miles</td> <td>9</td> <td>3</td> <td>1</td> <td>10</td> </tr> </table>	Hours	3	1	$\frac{1}{3}$	$3\frac{1}{3}$	Miles	9	3	1	10		
Hours	3	1	$\frac{1}{3}$	$3\frac{1}{3}$										
Miles	9	3	1	10										

Worksheet 2.2 – Ratios: Rational Numbers

Context	Bar Model	Ratio Table												
	<p data-bbox="708 245 1554 456">Hours 0 3 7  Miles 0 4 ?</p>													
		<table border="1" data-bbox="1717 616 2481 831"><tbody><tr><td data-bbox="1717 616 1849 742">Hours</td><td data-bbox="1849 616 1972 742">2</td><td data-bbox="1972 616 2094 742"></td><td data-bbox="2094 616 2216 742"></td><td data-bbox="2216 616 2339 742"></td><td data-bbox="2339 616 2481 742">$3\frac{1}{2}$</td></tr><tr><td data-bbox="1717 742 1849 831">Miles</td><td data-bbox="1849 742 1972 831">3</td><td data-bbox="1972 742 2094 831"></td><td data-bbox="2094 742 2216 831"></td><td data-bbox="2216 742 2339 831"></td><td data-bbox="2339 742 2481 831">?</td></tr></tbody></table>	Hours	2				$3\frac{1}{2}$	Miles	3				?
Hours	2				$3\frac{1}{2}$									
Miles	3				?									
If you can hike 6 miles in 5 hours, how long will it take to hike 9 miles?														

Context	Bar Model	Ratio Table												
<p>If I can hike 4 miles in 3 hours, how many miles can you hike in 7 hours?</p>	<p>Hours 0 1 2 3 6 7</p> <p>Miles 0 $\frac{4}{3}$ $\frac{8}{3}$ 4 8 $9\frac{1}{3}$</p>	<table border="1"> <tr> <td>Hours</td> <td>3</td> <td>1</td> <td>6</td> <td>7</td> </tr> <tr> <td>Miles</td> <td>4</td> <td>$\frac{4}{3} = 1\frac{1}{3}$</td> <td>8</td> <td>$9\frac{1}{3}$</td> </tr> </table>	Hours	3	1	6	7	Miles	4	$\frac{4}{3} = 1\frac{1}{3}$	8	$9\frac{1}{3}$		
Hours	3	1	6	7										
Miles	4	$\frac{4}{3} = 1\frac{1}{3}$	8	$9\frac{1}{3}$										
<p>If you can 3 miles in 2 hours how many miles can you hike in $3\frac{1}{2}$ hours?</p>	<p>Hours 0 $\frac{1}{2}$ 1 2 3 $3\frac{1}{2}$</p> <p>Miles 0 $\frac{3}{4}$ $1\frac{1}{2}$ 3 $4\frac{1}{2}$ $5\frac{1}{4}$</p>	<table border="1"> <tr> <td>Hours</td> <td>2</td> <td>1</td> <td>3</td> <td>$\frac{1}{2}$</td> <td>$3\frac{1}{2}$</td> </tr> <tr> <td>Miles</td> <td>3</td> <td>$1\frac{1}{2}$</td> <td>$4\frac{1}{2}$</td> <td>$\frac{3}{4}$</td> <td>$5\frac{1}{4}$</td> </tr> </table>	Hours	2	1	3	$\frac{1}{2}$	$3\frac{1}{2}$	Miles	3	$1\frac{1}{2}$	$4\frac{1}{2}$	$\frac{3}{4}$	$5\frac{1}{4}$
Hours	2	1	3	$\frac{1}{2}$	$3\frac{1}{2}$									
Miles	3	$1\frac{1}{2}$	$4\frac{1}{2}$	$\frac{3}{4}$	$5\frac{1}{4}$									
<p>If you can hike 6 miles in 5 hours, how long will it take to hike 9 miles?</p>	<p>Hours 0 $2\frac{1}{2}$ 5 $7\frac{1}{2}$</p> <p>Miles 0 3 6 9</p>	<table border="1"> <tr> <td>Hours</td> <td>5</td> <td>$2\frac{1}{2}$</td> <td>$7\frac{1}{2}$</td> </tr> <tr> <td>Miles</td> <td>6</td> <td>3</td> <td>9</td> </tr> </table>	Hours	5	$2\frac{1}{2}$	$7\frac{1}{2}$	Miles	6	3	9				
Hours	5	$2\frac{1}{2}$	$7\frac{1}{2}$											
Miles	6	3	9											