Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

UNIT 4 LESSON 11

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| AIM: | SWBAT apply unit rates |

**THINK ABOUT IT!**

Jamal is able to roller blade at a rate of 6 feet per second.

Write three equivalent ratios to Jamal’s speed

Explain how you know that the ratios you wrote are equivalent to Jamal’s speed

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**Test the Conjecture**

*Test the Conjecture #1)* Are the ratios 20:5 and 28:7 equivalent? How do you know?

**Test the Conjecture**

*Test the Conjecture #2)* Leo runs 6 miles in 33 minutes at a constant speed. Jeremy runs 8 miles in 42 minutes at a constant speed. Monday morning, they run the same distance. Will they finish at the same time?

Conjecture

|  |
| --- |
| All \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with the same unit rate are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

**PARTNER PRACTICE**

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| *Bachelor Level* |

1. Dan can ride his bike at a constant rate of 25 miles per hour.
   1. How many miles can Dan ride his bike in 12 hours?

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed
  1. How many hours would it take Dan to ride his bike 200 miles?
* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed
  1. How far can Dan write his bike in one day?
* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

Explain how you applied a unit rate and ratios to solve part c

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| *Master Level* |

1. Are the ratios 35:40 and 21:24 equivalent? Explain how you know.

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

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1. Emeline can type at a constant rate of 10 pages every 4 minutes and Merle can type at a constant rate of 15 pages every 5 minutes. Is the ratio of number of pages to time that Emeline can type equivalent to the ratio of number of pages to time that Merle can type? Explain how you know.

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

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**INDEPENDENT PRACTICE**

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| *Bachelor Level* |

1. The average person drives the speed limit of 65 mph. How far can the average person drive in 11 hours?

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

1. Luis can swim 1 ½ meters per second. How meters can he swim in a minute?

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

|  |
| --- |
| *Master Level* |

1. Aubrey has to type a 5-page article but only has 18 minutes until she reaches the deadline. If Aubrey is able to type at a constant rate of 0.25 page every 1 minute, will she meet her deadline? Show your work to defend your answer.

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

1. Which ratios in the list below are equivalent. Select all that apply.

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed
  1. 24:12
  2. 14:28
  3. 10:5
  4. 18:2
  5. 9:4.5

1. Are the ratios 30:4 and 35:5 equivalent? Explain how you know.

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

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1. At Fun Burger, the burger master can make 25 hamburgers every 5 minutes. The master’s apprentice can make 35 burgers every 7 minutes. The master says that the apprentice still has much to learn because it takes the apprentice more time to make burgers. The apprentice says that they make the same number of burgers in the same amount of time. With whom do you agree? Explain why.

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

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1. Elise wants to buy apples. At the corner store, they sell 20 apples for $2.50. At Costco, they sell 64 apples for $8. Is the cost of the apples the same or different? Show your work to prove your answer.

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

1. In Denver, Colorado, they experience a lot of snow in the winter. During the last snow storm, it snowed for 3 straight days and the snow consistently accumulated at a rate of inch per hour. How much snow did Denver get over three days?

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

1. The pumps at the corner gas station pump gas very slowly. They pump the case at a rate of gallon per minute. Determine whether each ratio below is equivalent to the unit rate provided. Select “Yes” or “No.”

|  |  |  |
| --- | --- | --- |
|  | **Yes** | **No** |
| 3:2 |  |  |
| 2:3 |  |  |
| 8:12 |  |  |
| 9:12 |  |  |

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| --- |
| *PhD Level* |





**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* CFS for top quality work
  + Annotations: box starting ratio
  + Ratio table/model is drawn and labeled
  + Equivalent ratios are identified
  + Answer statement is boxed

**Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**EXIT TICKET**

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| Self-assessment | I mastered the learning objective today. | I am almost there. | Need more practice and feedback. |
| Teacher feedback | You mastered the learning objective today. | You are almost there. | You need more practice and feedback. |

1) For every 1 quart, there are 2 pints. Read each statement below and decide which is true and which is false.

|  |  |  |
| --- | --- | --- |
|  | True? | False? |
| For every 10 pints, there are 20 quarts |  |  |
| For every 20 quarts, there are 40 pints |  |  |
| For every pint there is ½ of a quart |  |  |
| If you have 5 pints, you have 2.5 quarts |  |  |

2) Tiffany is filling her pool at a rate of 12 gallons every 4 minutes. George is filling his pool at a rate of 18 gallons every 6 minutes. Tiffany says that they are filling their pools at the same rate. George thinks he filling his pool faster. Who is right? Explain.

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