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

UNIT 5 LESSON 2

|  |  |
| --- | --- |
| AIM: | SWBAT apply unit rates |

**THINK ABOUT IT!**

Alex can walk 6 miles every 2 hours. How far can he walk in 11 hours? Use a model to show your thinking and solution. Explain how you found your solution.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Test the Conjecture**

*Test the Conjecture #1)* The ratios 3:12 and 17:x are equivalent. What is the value of x?

*Test the Conjecture #2)* A grocery store sign indicates that oranges are on sale for 10 oranges for $2.00.  How many oranges can you buy with $9?

Conjecture

|  |
| --- |
| A \_\_\_\_\_\_\_\_\_\_\_\_\_ can be used to create any equivalent ratio. |

**PARTNER PRACTICE**

* **CFS for top quality work**
  + Problem is annotated with *numbers* circled and *terms* underlined
  + ***Ratio table*** or ***double number line*** is drawn accurately and is clearly labeled
  + Unit rate and equivalent ratios are identified
  + Answer statement is written

|  |
| --- |
| *Bachelor Level* |

1. Shanika can run 5 miles for every 30 minutes she runs. How many minutes will it take her to run 13 miles? Explain how you solved the problem.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

1. Select all the ratios that are equivalent to 4:16
   1. 3:12
   2. 20:5
   3. 8:32
   4. 1:8
   5. 10:4
2. Caroline can crawl 6 feet every 3 seconds. She is trying to be the faster crawler in her day care by traveling the most distance in 13 seconds. The current record is 30 feet in 13 seconds. Will she be able to break the record? If so, by how many feet?

**INDEPENDENT PRACTICE**

* **CFS for top quality work**
  + Problem is annotated with *numbers* circled and *terms* underlined
  + ***Ratio table*** or ***double number line*** is drawn accurately and is clearly labeled
  + Unit rate and equivalent ratios are identified
  + Answer statement is written

|  |
| --- |
| *Bachelor Level* |

1. Dave can clean pools at a constant rate of 3 pools in 12 hours.
   1. How many hours does it take for Dave to clean 10 pools?
   2. How many hours does it take for Dave to clean 26 pools?
2. The corner store sells apples at a rate of $4 for 2 apples. Read each statement below and decide if it is “True” or “False.”

|  |  |  |
| --- | --- | --- |
| Statement | True | False |
| It would be most efficient to use the unit rate of “1/2 apple for every $1” to solve |  |  |
| It would be most efficient to use the unit rate of “$2 for every 1 apple” to solve |  |  |
| 5 apples will cost $10 |  |  |
| If you spend $12, you have purchased 3 apples |  |  |
|  |  |  |
| *Master Level* | | | | |

1. Monica wants to buy soup. Store A has a special – 5 cans for $10. Store B sells 3 cans for $9. If she wants to buy 16 cans of soup, which store will give her the better deal? By how much money? **Show your work.**

Store \_\_\_\_\_\_\_\_ is a better deal by $ \_\_\_\_\_\_\_\_\_



**Show your work.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ more miles

1. Nathan is a professional bicyclist. He is able to ride 5 miles in 20 minutes. He wants to break the record for riding 93 miles. The current record is 7 hours. He thinks he will be able to break the record. Do you agree or disagree with his claim? Explain.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A local pool company can fill a 10’ by 10’ by 10’ pool in 5 hours. At the same rate, how many cubic feet can the pool company fill in 7 hours?

|  |
| --- |
| *PhD Level* |

1. Sara can run 49 yards in 7 seconds. At that rate, how many feet can she run in 3 minutes?
2. Mallory is on a budget and wants to determine which cereal is a better buy. A 10-ounce box of cereal costs $2.50 and a 13-ounce box of the same cereal costs $3.99. The store is selling each cereal in 15 ounce boxes. Which 15 ounce box is a better buy and by how much?

* **CFS for top quality work**
  + Problem is annotated with *numbers* circled and *terms* underlined
  + ***Ratio table*** or ***double number line*** is drawn accurately and is clearly labeled
  + Unit rate and equivalent ratios are identified
  + Answer statement is written

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

**EXIT TICKET**

|  |  |  |  |
| --- | --- | --- | --- |
| 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 5 pounds of pasta served, 15 people can be fed. How many people can be fed with 4 pounds of pasta?

**Show your work.**

1. Xavier can swim at a constant speed of 9 meters in 3 seconds. He is trying to qualify for the National Swim Meet. To qualify, he must complete a 60 meter race in 23 seconds. Will Xavier be able to qualify? Why or why not?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_