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| Date: | | | Duration of Lesson: 45 minutes | |
| Title of Unit: Ratios | | | Title of Lesson: Introduction to Ratio and Ratio Reasoning | |
| Lesson Objectives:   * Students will be to explain that a ratio is an ordered pair of numbers which are not zero. * Students will be able to explain that a ratio is often used instead of describing the first number as a multiple of the second. * Students will use the precise language and notation of ratios (e.g., 3: 2, 3 to 2). * Students can show and explain that the order of the pair of numbers in a ratio matters and that the description of the ratio relationship determines the correct order of the numbers. * Students create real-world contextual situations to match a given ratio. | | | | |
| Groupings (e.g., whole class, small groups, co-teaching): Whole class, some small groups | | | | |
| Skills & Standards: CCSS.MATH.CONTENT.6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. | | | | |
| **Progression of Learning & Teaching** | | | | |
| Opener: | Ask the students about the most recent game (basketball/football/soccer etc. ). Ask them for specifics about the score and/or about wins and losses. Talk to the students about the relationship between how many wins/losses/points that each team had. As the students are giving you feedback and discussing the information explain to them that these comparisons are called ratios.  (Optional) Textbook Warm-Up  Instructions: Write a fraction to represent each situation.   1. the number of boys in your math class compared to the number of students in the class 2. the number of girls in your math class compared to the number of students in the class 3. the number of students in your class that are absent today compared to the total number of students in the class 4. the number of students in your math class that are in attendance today compared to the total number of students in your class | | | **Points to Remember** |
| Activities & Tasks: | 1. Opener above. 2. Introduction to Ratios Video:   <https://www.youtube.com/watch?v=RQ2nYUBVvqI&list=PLbzagEi1JQaPdbbKRDCfl9ZSPvH_-OW-9>   1. Example 1: Show the students an example of ratios with a table and tape diagram. 2. Example 2: Class Ratio/ Interactive Exercise 1: Given examples of teacher provided statements students will stand to indicate if they identify with the statements. The students will record a ratio for each of the examples the teacher provides. Responses will be reviewed together. 3. Interactive Exercise 2: Have students look around the classroom to find quantities to compare. Have students create written ratio statements that represent their ratios in one of the summary forms. 4. Interactive Exercise 3: Students will use words to describe a context that could be represented by each ratio given. Encourage students to be precise about the order in which the quantities are stated (emphasizing that order matters) and about the quantities being compared. Examples will be provided. | | | Resources:  Key Vocabulary:  additive reasoning- uses prior knowledge of existing relationships between different numbers to make inferences about their sum  multiplicative reasoning  ratio- shows the relative sizes of two or more values  percent- a ratio whose second term is 100  Monitoring/Scaffolding: |
| Level of Cognitive Complexity: | ☐ Creating  ☐ Evaluating  ☐ Analyzing | ☐ Applying  ☐ Understanding  ☐ Remembering | |
| Key questions: | Are there different ways to write comparisons between two quantities?  What is the difference between a part-part and a part-whole ratio?  Are fractions ratios? | | |
| Closure: | Provide students with this description:  A ratio is an ordered pair of nonnegative numbers, which are not both zero. The ratio is denoted 𝐴: 𝐵 or 𝐴 to 𝐵 to indicate the order of the numbers. In this specific case, the number 𝐴 is first, and the number 𝐵 is second.  What is a ratio? Can you verbally describe a ratio in your own words using this description?  Answers will vary but should include the description that a ratio is an ordered pair of numbers, which are both not zero. How do we write ratios? 𝐴 colon 𝐵 (𝐴: 𝐵) or 𝐴 to 𝐵. What are two quantities you would love to have in a ratio of 5: 2 but hate to have in a ratio of 2: 5? Answers will vary. For example, I would love to have a ratio of the number of hours of play time to the number of hours of chores be 5: 2, but I would hate to have a ratio of the number of hours of television time to the number of hours of studying be 2: 5. | | |
| Next Steps: | Create and reason about tables of equivalent ratios.  Use known values in a table to determine equivalent ratios.  Solve problems by reasoning about graphs, diagrams, and tables of equivalent ratios. | | | **Formative Assessment/ Criteria for Success:**  Exit Slip and Discussion responses  1. Write a ratio for the following description: Kaleel made three times as many baskets as John during basketball practice. A ratio of 𝟑: 𝟏 or 𝟑 to 𝟏 can be used.  2. Describe a situation that could be modeled with the ratio 𝟒: 𝟏. Answers will vary but could include the following: For every four teaspoons of cream in a cup of tea, there is one teaspoon of honey.  3. Write a ratio for the following description: For every 𝟔 cups of flour in a bread recipe, there are 𝟐 cups of milk. |