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| **Synopsis of high-quality task:**  Students use what they know about adding and subtracting fractions to determine how much of a bag of Takis each friend ate. Students also develop a poster to model their strategy and or thinking.  **Anticipated student time spent on task:** 60 min  **Student task structure(s):** Partner work |
| [**Math Content Standards and Practices:**](http://www.doe.mass.edu/frameworks/math/2017-06.pdf)  **5.NF.A.2** Solve word problems involving addition and subtraction of fractions referring to the same whole (the whole can be a set of objects), including cases of unlike denominators.  **SMP 2** Reason abstractly and quantitatively.  **SMP 3** Construct viable arguments and critique the reasoning of others.  **SMP 4** Model with mathematics. |
| **Prior Knowledge:**  **4.NF.A.2** Compare two fractions with different numerators and different denominators. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions.  **5.NF.A.1** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. |
| **Connections to the real-world:**  Students know how to share and determine portion sizes, and many of them enjoy Takis. |
| **Mastery Goals:**  Learning Objective:  Formulate fractional parts from a real-world situation to compare, add, and subtract fractions with unlike denominators.  Language Objective:  Use fraction vocabulary words when speaking in discussions in order to collaborate with peers and in written explanation. For example: numerator, denominator, portion, whole, pieces/parts. |
| **Teacher instructions**  **Instructional Tips/Strategies/Suggestions:**  Get students excited about the project by asking “How many of you have ever had Takis?” and then “How many of you have ever shared a bag of Takis with your friends?”  Introduce the assignment by projecting the task on the overhead and then read aloud to students (see below). Emphasize that the students must show 2-3 strategies on their poster.  Remind students that there are manipulatives in the classroom that they might access.  Students will then partner up and complete the task.  Best poster wins a full bag of Takis! Everyone else must share a second bag! |
| **Instructional Materials/Resources/Tools:**  Include:   * Student directions for completing the task * A materials list and/or materials management * Safety information if applicable * Any handouts, links, books, videos, materials, etc. that is needed for the student to complete the task * Scoring rubric – Focus on including the standards-content and practices for performance criteria. Less focus should be on presentation style, design, etc. unless it is tied directly to an ELA standard.   Handout is attached.  Materials: Unifix cubes, large paper, markers, graph paper |
| **Accessibility and Supports:**  **Potential sentence starters:**  This fraction represents…  \_\_\_\_\_ of the bag is left over.  We used \_\_\_\_\_\_\_\_\_\_\_\_ to solve this task because...  (Name) ate \_\_\_\_\_\_\_\_\_\_ pieces/fraction  **Key academic vocabulary:** numerator, denominator, portion, whole, pieces/parts |

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| NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Part 1  Xzavien, Yalyany, and Angelica were eating a bag of Hot Chili Pepper Lime flavored Takis. There are 60 pieces of Takis in each bag. Xzavien ate of the bag and Yalyany ate of the bag. Angelica ate the rest of the bag. She estimates that she ate of the bag for a snack. Is Angelica’s estimate reasonable?  Part 2  What fraction of the bag did Angelica actually eat? How many Taki’s is that equivalent to? Show or explain your work.  On your poster:  Show how to solve using at least 2-3 strategies. **One must be a picture.** Use vocabulary words such as part, pieces, whole, numerator, denominator.  **Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **5th Grade Math**  **“Helpful Hints” – Takis Project**   * THINK or brainstorm *before* you begin your poster * Use cubes * Use graph paper * “This fraction represents …” * “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the bag is left over.” * “We used \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to solve this task because …” * “\_\_\_\_(Name)\_\_\_\_\_ ate \_\_\_\_\_\_\_\_\_\_ pieces/fraction.” * Use words like numerator, denominator, portion, whole, pieces/parts * refer to the rubric as you make your poster and think about your presentation   **Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **5th Grade Math**  **“Helpful Hints” – Takis Project**   * THINK or brainstorm *before* you begin your poster * Use cubes * Use graph paper * “This fraction represents …” * “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the bag is left over.” * “We used \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to solve this task because …” * “\_\_\_\_(Name)\_\_\_\_\_ ate \_\_\_\_\_\_\_\_\_\_ pieces/fraction.” * Use words like numerator, denominator, portion, whole, pieces/parts * refer to the rubric as you make your poster and think about your presentation   **TAKIS PROJECT RUBRIC**  **Poster**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Points** | **Strategies** | **Accuracy/**  **Math Vocabulary** | **Effort/Design** | **Presentation** | | **0** | **No strategies shown or poster not completed** | **No strategies correct, no vocabulary, or poster not completed** | **Little to no effort or poster not completed** | **No understanding of the assignment** | | **1** | **Strategies are incomplete and/or contain more than 2 errors** | **Poster is not organized and hard to understand little to no vocabulary** | **Effort shown but illegible and messy, no details** | **Explained some parts of the poster and strategies but unable to answer questions** | | **2** | **2-3 strategies are listed but 2 are incorrect** | **1 strategy is correct and some vocabulary used** | **Effort shown, not neat, colorful, some details, but not easy to understand** | **Explained poster but did not understand the strategies and unable to answer questions** | | **3** | **2-3 strategies are listed but 1 is incorrect** | **2 strategies are correct and some vocabulary used** | **Effort shown, neat, colorful, some details but not easy to understand** | **Explained poster and strategies but unable to answer all questions** | | **4** | **3 strategies are listed** | **3 strategies and vocabulary are used and are correct** | **Effort shown, neat, colorful, details, and easy to understand** | **Explained poster and strategies and answers questions** |   **Sample Student Work:**  **Student work**  **student work**  **student work**  **student work** |