

Lesson 4: Adding and Subtracting Fractions- Grade 5

Source: <http://www.edugains.ca/newsite/DigitalPapers/FractionsLearningPathway/OperationsWithFractions-C-traingame.html>

Learning Goal: Students will... • represent proper, improper and mixed numbers; • solve problems involving fractions using a variety of computational strategies. Success Criteria: • I added fractional quantities using a number sentence to arrive at a sum • The sum is expressed as an improper fraction and as a mixed fraction.	Expectations: B2.5 add and subtract fractions with like denominators, in various contexts Key concepts • When working with fractions as parts of a whole, the fractions are compared to the same whole. • Fractions can be compared spatially by using models to represent the fractions. If an area model is chosen, then the areas that the fractions represent are compared. If a linear model is chosen, then the lengths that the fractions represent are compared. • If two fractions have the same denominator then the numerators can be compared. In this case the numerator with the greater value is the greater fraction because the number of parts considered is greater (e.g., 23 >13) • If two fractions have the same numerators, then the denominators can be compared. In this case the denominator with the greater value is the smaller fraction because the size of each partition of the whole is smaller (e.g., 56 <53) • Fractions can be compared by using the benchmark of "half"and considering each fraction relative to it. For example, 56 is greater than 38 because 56 is greater than one half and 38 is less than one half. • Fractions can be ordered in ascending order- least to greatest- or in descending order- greatest to least. • <i>Note:</i> The choice of model used to compare fractions may be influenced by the context of the problem. For example: a linear model may be chosen when the problem is dealing with comparing things involving length, like lengths of a ribbon or distances. An area model may be chosen when the problem is dealing with comparing the area of two-dimensional shapes, like a garden or a flag.
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Mind’s On: Train Game 1. Place many relational rods (cuisenaire rods) of different lengths in paper bags, and distribute these to pairs of students, along with a recording chart (BLM 1). 2. Before beginning the task, ask students to select an orange rod and 5 red rods. Prompt them to discuss with an elbow partner how they can express a single red rod.	Action! Paper Folding: Fraction Strips Have students grab a handful of rods from the bag to build a train (join the rods end-to-end) and record each rod length as a fraction on their chart. Students add their fractional quantities using a number sentence to arrive at a sum. The sum should be expressed as an improper fraction and as a mixed fraction. Repeat to complete the recording chart. (BLM 1)
Teacher Notes: Students may: • notice that writing the addition sentence lends itself directly to recording the sum as an improper fraction; • struggle with recording both the mixed fraction notation and the improper fraction notation as this requires thinking about the number of wholes and how much more; • benefit from laying down orange ‘wholes’ to track each whole; • use flexible addition strategies to determine the length of their train which is evidenced in their number sentences (eg. grouping like denominators, grouping numerators to reach friendly amounts, etc.); • find writing out same fractions in addition statements tedious and quickly resort to multiplication strategies to more efficiently record their number sentences.	
Manipulatives and Tools: Relational rods in paper bags • BLM 1 (one recording sheet for each pair of students)	
Consolidation Ideas - Key questions (a) What did you use first –improper fraction notation or mixed fraction notation? (b) Which was easier and why? (c) If you start with an improper fraction, what could you do to change it to a mixed fraction? (d) Most of your number sentences involved repeated addition. Is there another way those number sentences could be written?	
Independent Task / Assessment Opportunities: BLM 1 (one copy per pair)	

Knowledgehook Assignment for subtracting fractions with like denominators

<https://app.knowledgehook.com/app/Teacher/bc0d8927-600a-eb11-974c-0050568c42b6/Content/aed0c714-32f2-ea11-974c-0050568c42b6//View?BranchId=07af6a07-4bcc-ea11-974a-0050568c42b6>