

River Rafting Adventure (5.NF.1)

Summary

Students will apply their understanding of addition and subtraction of fractions and mixed numbers with unlike denominators to a real world problem involving a river rafting trip.

Main Core Tie

Mathematics Grade 5

[Strand: NUMBER AND OPERATIONS - FRACTIONS \(5.NF\) Standard 5.NF.1](#)

Time Frame

1 class periods of 60 minutes each

Group Size

Small Groups

Life Skills

Thinking & Reasoning, Communication, Social & Civic Responsibility

Materials

- Task sheet
- Fraction bars/strips
- Paper
- Pencils
- Pictures of river rafts
- Maps of Yampa River and/or other rivers

Background for Teachers

Teachers need an understanding of strategies for finding equivalent fractions for addition and subtraction. They need to be sure they understand regrouping as it applies to fraction addition and subtraction. For this task, they need to be sure they understand the mileage change at the confluence (see the Task Sheet).

Student Prior Knowledge

Students need to have strategies for adding and subtracting fractions and mixed numbers with unlike denominators.

Intended Learning Outcomes

Students will apply their understanding of addition and subtraction of fractions and mixed numbers to find the length of a river trip. CCSS.MATH.CONTENT.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. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)

Strategies for Diverse Learners

Supports for struggling students include:

- Practice using manipulatives to find equivalent fractions

Practice with addition fractions that total 1 or greater
Practice with estimation

Extensions

Additional activities include:

Extension activities found in lesson plan

Menu planning for trip

Research data on river flow throughout the summer and predict how this might affect the speed a raft is able to travel

Bibliography

Adapted from: Smith, Margaret Schwan, Victoria Bill, and Elizabeth K. Hughes. "Thinking Through a Lesson Protocol: Successfully Implementing High-Level Tasks." *Mathematics Teaching in the Middle School* 14 (October 2008): 132-138.

Authors

[David Smith](#)

[Patricia Stephens-French](#)