

Instructional Learning Series

Grade 7—The Number System Playlist

The Digital Library Instructional Learning Series links Smarter Balanced Digital Library resources with content from Interim Assessment Blocks. The Digital Library resources on this list are intended to supplement a teacher’s core curriculum and may not address every standard assessed by the Grade 7—The Number System Interim Assessment Block. For each resource on this list, a brief description is provided along with the Common Core State Standards (CCSS) of focus and estimated instructional time. Many of the formative assessment practices featured in these resources can be used across grades and content areas.

Learning Goals

Students understand how:

- positive and negative rational numbers can be represented on a number line.
- values to the left of 0 on the number line are negative and values to the right of 0 on the number line are positive.
- properties of whole number operations apply to the addition, subtraction, multiplication, and division of rational numbers.
- rational numbers can be expressed as fractions or as terminating or repeating decimals.

Success Criteria

Students can:

- model addition and subtraction problems involving rational numbers on a number line.
- add, subtract, multiply, and divide rational numbers.
- represent rational numbers as terminating or repeating decimals.
- solve real-world and mathematical problems involving the four operations with rational numbers.

Title	Resource Overview
Using Positive and Negative Numbers in Context  CCSS of focus: 7.NS.A.1, 7.NS.A.3 Estimated Instructional Time: 90 min.	This resource includes presentation slides and a complete lesson from the Mathematics Assessment Resource Service at the University of Nottingham and University of California, Berkeley. Students move from individual work to interactive class-wide discussion, then engage in a series of collaborative exercises before revising their own work. Throughout the process, students use skills to compare, add, and subtract positive and negative numbers, and focus on using negative numbers on number lines.
Learning to Combine Integers 	This resource includes a detailed lesson plan allowing teachers to direct students through attributes of the formative assessment process to collect data and evaluate

<p>CCSS of focus: 7.NS.A.1a-d</p> <p>Estimated Instructional Time: 60 min.</p>	<p>rules for combining integers. Using color markers to represent positive and negative numbers, the activity allows students to randomly generate combinations. Throughout the process, students collaborate and interact allowing the educator to elicit and interpret evidence of understanding then adjust instruction in real time.</p>
<p>Video Games: Multiply and Divide Rational Numbers </p> <p>CCSS of focus: 7.NS.A.2a, 7.NS.A.2c, 7.NS.A.3</p> <p>Estimated Instructional Time: 60 min.</p>	<p>This resource includes materials that culminate in a performance task. A lesson containing detailed instructions, exemplar responses, and links to supportive resources allow students to work in small groups to solve problems related to financing the purchase of a video game console. The real-world problem solving engages students in internet research, data collection, and solving financial decisions using local sales tax rates and budgeting.</p>
<p>Distance Between Houses: Understanding and Applying Absolute Value </p> <p>CCSS of focus: 7.NS.A.1c, 7.NS.A.3</p> <p>Estimated Instructional Time: 60 min.</p>	<p>This resource includes a performance task, detailed instructions, exemplar responses, and links to external resources for students to develop understanding of operations with rational numbers. Students use rational numbers to represent locations of houses relative to school, plotting a number line in order to calculate distance and understand absolute value.</p>
<p>Rational Numbers </p> <p>CCSS of focus: 7.NS.A.1, 7.NS.A.2, 7.NS.A.3</p> <p>Estimated Instructional Time: 600 min. (ten 60-minute lessons)</p>	<p>This resource includes a detailed lesson plan, instructional supports for educators, and extension activities to teach students ways to understand rational numbers. Tasks include adding, subtracting, multiplying and dividing rational numbers in various forms, and lead students to complete a performance task to determine the profitability of two businesses. The culminating activity includes an evaluation rubric to measure learning objectives.</p>

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