

Chapter 6 Planning Chart: Addition and Subtraction of Integers

Cross-Curricular Focus: Adopt effective work methods. The lessons in this chapter show several methods for adding and subtracting integers. Students should learn each method and then make choices about which methods work best in various situations and use the appropriate methods to simplify their work.

Broad Area of Learning: Environmental Awareness. This chapter provides several opportunities to discuss environmental issues related to temperature, including the introduction to Lessons 1 and 7.

| Content | QEP Concepts | QEP Processes | Addressing Concepts and Processes |
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| Getting Started: Interpreting Data, pp. 184–185 | | | Assessment Opportunity |
| Lesson 1: Comparing Positive and Negative Numbers, pp. 186–189 | <i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> Reading, writing, various representations, patterns, properties Fractional, decimal and exponential (integral exponent) notation; percentage, square root | <i>Arithmetic: Different Ways of Writing and Representing Numbers</i> <ul style="list-style-type: none"> Comparing Using a variety of representations (e.g. numerical, graphic) Locating numbers on a number line, abscissa (x-coordinate) of a point | |
| Mental Math: Quick Subtraction, p. 189 | <i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> Reading, writing, various representations, patterns, properties | <i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i> <ul style="list-style-type: none"> Looking for equivalent expressions | |
| Lesson 2: An Integer Experiment, pp. 190–191 | <i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> Reading, writing, various representations, patterns, properties Fractional, decimal and exponential (integral exponent) notation; percentage, square root <i>Probability: Random Experiment</i> <ul style="list-style-type: none"> Random experiments involving one or more steps (with or without replacement, with or without order) | <i>Arithmetic: Different Ways of Writing and Representing Numbers</i> <ul style="list-style-type: none"> Using a variety of representations (e.g. numerical, graphic) Locating numbers on a number line, abscissa (x-coordinate) of a point | In prompt B replace “scatter plot” with “graph.” |
| Lesson 3: Adding Integers Using the Zero Principle, pp. 192–195 | <i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> Reading, writing, various representations, patterns, properties Fractional, decimal and exponential (integral exponent) notation; percentage, square root Properties of operations: <ul style="list-style-type: none"> Commutative and associative properties | <i>Arithmetic: Different Ways of Writing and Representing Numbers</i> <ul style="list-style-type: none"> Using a variety of representations (e.g. numerical, graphic) Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> Decomposition of numbers (e.g. additive, multiplicative) Simplification and reduction <i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i> <ul style="list-style-type: none"> Looking for equivalent expressions Simplifying the terms of an operation Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations | |

| Content | QEP Concepts | QEP Processes | Addressing Concepts and Processes |
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| <p>Lesson 4: Adding Integers That Are Far from Zero, pp. 196–199</p> | <p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root • Properties of operations: <ul style="list-style-type: none"> • Commutative and associative properties | <p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Decomposition of numbers (e.g. additive, multiplicative) • Simplification and reduction • Locating numbers on a number line, abscissa (x-coordinate) of a point <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Looking for equivalent expressions • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations | |
| <p>Lesson 5: Integer Addition Strategies, pp. 200–203</p> | <p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root • Properties of operations: <ul style="list-style-type: none"> • Commutative and associative properties | <p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Decomposition of numbers (e.g. additive, multiplicative) • Simplification and reduction <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Looking for equivalent expressions • Simplifying the terms of an operation • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations • Use of a calculator: operations and sequences of operations performed in the proper order | |
| <p>Mid-Chapter Review: pp. 204–205</p> | | | Assessment Opportunity |
| <p>Math Game: Integro, p. 206</p> | <p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties | <p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Mental computation: the four operations, especially with numbers written in decimal notation, using equivalent ways of writing numbers and the properties of operations | Optional |

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| Curious Math: Time Zones, p. 207 | <p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties | <p>Arithmetic: Different Ways of Writing and Representing Numbers</p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Mental computation: the four operations, especially with numbers written in decimal notation, using equivalent ways of writing numbers and the properties of operations • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations | Optional |
| Lesson 6: Using Counters to Subtract Integers, pp. 208–211 | <p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root • Properties of operations: <ul style="list-style-type: none"> • Commutative and associative properties | <p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Decomposition of numbers (e.g. additive, multiplicative) • Simplification and reduction <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Looking for equivalent expressions • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations | |
| Lesson 7: Using Numbers Lines to Subtract Integers, pp. 212–215 | <p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root | <p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Locating numbers on a number line, abscissa (x-coordinate) of a point <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations | The student book uses the word “brackets” to refer to parentheses. Remind students that “brackets” is another name for “parentheses”. |

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|---|---|---|-----------------------------------|
| Lesson 8: Solve Problems by Working Backwards, pp. 216–218 | <p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root | <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations | |
| Chapter Self-Test: p. 219 | | | Self-Assessment Opportunity |
| Chapter Review: pp. 220–221 | | | Assessment Opportunity |
| Chapter Task: Mystery Integer, p. 222 | <p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root • Order of operations and the use of no more than two levels of parentheses in different contexts | <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations | Assessment Opportunity |
| Chapters 4–6 Cumulative Review: pp. 223–224 | | | Assessment Opportunity |