**Chapter 2 Contents and Suggested Pacing**

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| **Contents** | **Pacing (Days)** |
| **Unit 2:** Expressions and Equations Chapter 2 - 3 |  |
| **Lesson 1**Solve Equations with Rational Coefficients | 1.5 |
| **Inquiry Lab** Solve Two-Step Equations | 1 |
| **Lesson 2**Solve Two-Step Equations | 1 |
| **Lesson 3**Write Two-Step Equations | 1 |
| **Problem-Solving Investigation:**Work Backward | 1 |
| Mid-Chapter Check | 0.5 |
| **Lesson 4**Solve Equations with Variables on Each Side | 1 |
| **Lesson 5** Solve Multi-Step Equations | 1 |
| Chapter Review | 1 |
| Chapter Test | 1 |
| **Total Days for Chapter 2** | 13 |

**Common Core State Standards**
This chapter focuses on content from the **Expressions and Equations** (EE) domain and addresses the following grade 8 standards: 8.EE.7, 8.EE.7a, 8.EE.7b.

The Mathematical Practices are embedded throughout *Glencoe Math*, especially present in the inquiry labs, strong problem-solving emphasis in all lessons, and higher-order thinking exercises. This chapter emphasizes the following Mathematical Practices:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
7. Look for and make use of structure.
2. **Essential Question**

Each chapter has an Essential Question that keeps students focused on the big idea of the chapter. For chapter 2, the Essential Question is "What is equivalence?"

Within each lesson, students will answer a question that will help them develop an answer for the chapter Essential Question. For this chapter, these questions are as follows:

1. How is the multiplicative inverse used to solve an equation that has a rational coefficient? To solve an equation with a coefficient that is a fraction, multiply each side of the equation by the multiplicative inverse of the fraction.
2. How can you use the work backward problem-solving strategy to solve a two-step equation? Sample answer: You identify the order in which operations would be performed on the variable, then you undo each operation using its inverse operation in reverse order.
3. Why is it important to define a variable before writing an equation? Sample answer: Assigning a variable to the unknown helps you when translating the verbal model into an algebraic equation.
4. How is solving an equation with the variable on each side similar to solving a two-step equation? Sample answer: Solving any equation uses the properties of equality. Solving an equation with the variable on each side usually adds an additional step to solving a two-step equation.
5. How many possible solutions are there to a linear equation in one variable? Sample answer: There are 3 possible solutions to a linear equation in one variable: The null set where there are no solutions, one solution, or infinitely many solutions.

 **Focus on Mathematical Content**

**Lessons 1 through 3**

The numerical factor of a term that contains a variable is called the coefficient of the variable. When the coefficient is a fraction, multiply each side by the multiplicative inverse of the fraction.

A two-step equation is an equation that contains two operations. To solve two-step equations, use inverse operations to undo each operation in reverse order of the order of operations. For example,

**Lessons 4 through 5**

Solving equations sometimes requires several steps.

**Skills Trace: Vertical Alignment**

**Previous Grade
In the previous grade, students learned to:**

* write and solve one- and two-step linear equations.
* solve and- and two-step inequalities.

**This Grade
During this chapter, students learn to:**

* solve equations with rational coefficients.
* solve multi-step equations.

**After this chapter, student learn to:**

* use words, tables, graphs, and equations to represent functions.

**Next Grade
In the next grade, students learn to:**

* symbolically represent and solve multi-step problems that involve nonlinear equations and inequalities.