

Grade 6 Unit 6: Expressions and Equations

Lessons 1–5: Equations in One Variable

Explore, Play, and Discuss	• I can tell whether or not an equation could represent a tape diagram. • I can use a tape diagram to represent a situation. • I can match equations to real life situations they could represent. • I can replace a variable in an equation with a number that makes the equation true, and know that this number is called the solution to the equation.	
	Activity Suggestions: Students respond to questions in an online or paper journal, or talk them over with someone at home. ➤ Lesson 1: Consider recording 1.3 as a worked example for students. ➤ Lesson 2: Consider recording 2.3 as a worked example for students.	Assessment Suggestions: ➤ Lesson 1 cool-down ➤ Lesson 2 cool-down

Deep Dive	• I can explain why different equations can describe the same situation. • I can solve equations that have whole numbers, fractions, and decimals. • I understand the meaning of a fraction made up of fractions or decimals, like $\frac{2.1}{0.07}$ or $\frac{21}{7}$.	
	Activity Suggestions: ➤ Activity 4.1 and 4.3: Sync discussion. Consider drawing visuals that capture students' reasoning during the warm-up. ➤ Activity 5.2: Sync discussion	Assessment Suggestions: ➤ Lesson 4 cool-down ➤ Lesson 5 cool-down

Synthesize and Apply	• I can solve equations that have whole numbers, fractions, and decimals. • When I see an equation, I can make up a story that the equation might represent, explain what the variable represents in the story, and solve the equation.	
	Activity Suggestions: Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home. ➤ Activity 4.2: Modify instructions so that students can engage in a way that gets at key understandings even if working alone. ➤ Activity 5.3	Assessment Suggestions: ➤ Revisions to previous assessment prompt, consider using Math Language Routine 1: Stronger and Clearer Each Time ➤ Students use learning targets to decide what additional practice they need.

Ongoing Practice	• Assign one or more of the distributed practice problem sets from Lessons 1–5 to be completed over the time period that the section is being worked on. • These could also be lagging, so that students are working on practice problems from the previous section or unit during this section or unit. • Specify which problems students should submit, or let them choose by using learning targets to decide what additional practice they need. • Note: Several existing platforms already have IM’s practice problems loaded so that students can complete and submit them online. Some can be autoscored.
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Anytime Resources	• Lesson 3 • Teach and encourage students to study the lesson summaries (at the end of every lesson) and refer back to them. • Emphasize the Are You Ready for More opportunities to students who want to explore the topics in more depth. • The family support materials from this unit provide high-level guidance on the content of this unit and sample problems with answers.
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Lessons 6–11: Equal and Equivalent

Explore, Play, and Discuss	• I can use an expression that represents a situation to find an amount in a story. • I can write an expression with a variable to represent a calculation where I do not know one of the numbers.	
	Activity Suggestions: Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home. ➤ Lesson 6: Consider recording 6.2 as a worked example for students. ➤ Activity 7.2: Consider recording 7.2 as a worked example for students to watch and respond to some discussion questions in preparation for next class session.	Assessment Suggestions: ➤ Lesson 6 cool-down

Deep Dive	• I can solve percent problems by writing and solving an equation. • I can use a diagram of a rectangle split into two smaller rectangles to write different expressions representing its area. • I can use the distributive property to help do computations in my head.	
	Activity Suggestions: ➤ Activity 7.1 and 7.3: Sync discussion ➤ Activity 9.1 and 9.2: Sync discussion	Assessment Suggestions: ➤ Lesson 7 cool-down ➤ Lesson 9 cool-down

Synthesize and Apply	• I can explain what it means for two expressions to be equivalent. • I can use a tape diagram to figure out when two expressions are equal. • I can use what I know about operations to decide whether two expressions are equivalent. • I can use a diagram of a split rectangle to write different expressions with variables representing its area.	
	Activity Suggestions: Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home. ➤ Lesson 8: Consider recording 8.2 as a worked example for students to watch and respond to questions. ➤ Lesson 10: Consider recording 10.1 and 10.3 as a worked examples for students to watch and respond to questions.	Assessment Suggestions: ➤ Lesson 8 cool-down ➤ Lesson 10 cool-down

Ongoing Practice	• Assign one or more of the distributed practice problem sets from Lessons 6–11 to be completed over the time period that the section is being worked on. • These could also be lagging, so that students are working on practice problems from the previous section or unit during this section or unit. • Specify which problems students should submit, or let them choose by using learning targets to decide what additional practice they need. • Note: Several existing platforms already have IM’s practice problems loaded so that students can complete and submit them online. Some can be autoscored.
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Anytime Resources

- Teach and encourage students to study the lesson summaries ([at the end of every lesson](#)) and refer back to them.
- Emphasize the Are You Ready for More opportunities to students who want to explore the topics in more depth.
- Delve into one of the culminating lessons from earlier units.

Lessons 12–15: Expressions with Exponents

Explore, Play, and Discuss	• I can evaluate expressions with exponents and write expressions with exponents that are equal to a given number. • I understand the meaning of an expression with an exponent like 3^5. • I can decide if expressions with exponents are equal by evaluating the expression or by understanding what exponents mean.
	Activity Suggestions: Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home. ➤ Lesson 12: Consider recording 12.3 as a worked example for students to watch and respond to Question 2. ➤ Activity 13.2: Consider recording 13.2 as a worked example for students to watch and respond to some of the prompts. Assessment Suggestions: ➤ Lesson 12 cool-down
Deep Dive	• I can decide if expressions with exponents are equal by evaluating the expression or by understanding what exponents mean. • I know how to evaluate expressions that have both an exponent and addition or subtraction. • I know how to evaluate expressions that have both an exponent and multiplication or division.
	Activity Suggestions: ➤ Activity 13.1 and 13.3: Sync discussion ➤ Activity 14.1 and 14.2: Sync discussion Assessment Suggestions: ➤ Lesson 13 cool-down ➤ Lesson 14 cool-down

Synthesize and Apply	• I know how to evaluate expressions that have both an exponent and addition or subtraction. • I know how to evaluate expressions that have both an exponent and multiplication or division. • I can find solutions to equations with exponents in a list of numbers. • I can replace a variable with a number in an expression with exponents and operations and use the correct order to evaluate the expression.	
	Activity Suggestions: Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home. ➤ Activity 14.3 ➤ Lesson 15	Assessment Suggestions: ➤ Lesson 15 cool-down

Ongoing Practice	• Assign one or more of the distributed practice problem sets from Lessons 12–15 to be completed over the time period that the section is being worked on. • These could also be lagging, so that students are working on practice problems from the previous section or unit during this section or unit. • Specify which problems students should submit, or let them choose by using learning targets to decide what additional practice they need. • Note: Several existing platforms already have IM’s practice problems loaded so that students can complete and submit them online. Some can be autoscored.
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Anytime Resources	• Lesson 11 • Teach and encourage students to study the lesson summaries (at the end of every lesson) and refer back to them. • Emphasize the Are You Ready for More opportunities to students who want to explore the topics in more depth. • Delve into one of the culminating lessons from earlier units. • Select some student work from the week and use one of these routines: ○ Math Language Routine 3: Clarify, Critique, Correct ○ Math Language Routine 7: Compare and Connect
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Lessons 16–18: Relationships between Quantities

Explore, Play, and Discuss	• I can create tables and graphs that show the relationship between two amounts in a given ratio. • I can write an equation with variables that show the relationship between two amounts in a given ratio.	
	Activity Suggestions: Students respond to questions in an online or paper journal, use a tool that allows for asynchronous discussion if possible, or talk them over with someone at home. ➤ Activity 16.2: Consider recording components of this as a worked example for students to watch and then respond to components not captured on recording. ➤ Activity 17.1: Select student responses to build from in the next session.	Assessment Suggestions: ➤ Lesson 16 practice problem question 1 ➤ Lesson 17 practice problem question 1

Deep Dive	• I can create tables and graphs that show the relationship between two amounts in a given ratio. • I can write an equation with variables that show the relationship between two amounts in a given ratio. • I can create tables and graphs to represent the relationship between distance and time for something moving at a constant speed. • I can write an equation with variables to represent the relationship between distance and time for something moving at a constant speed.	
	Activity Suggestions: ➤ Activity 16.1: Sync discussion ➤ Activity 17.2: Sync discussion	Assessment Suggestions: ➤ Lesson 16 cool-down ➤ Lesson 17 cool-down

Synthesize and Apply	I can create tables and graphs that show different kinds of relationships between amounts.	
	Activity Suggestions: ➤ Students use learning targets to decide what additional practice they need.	Assessment Suggestions: ➤ Lesson 18 cool-down ➤ revisions to previous assessment prompts

Ongoing Practice	- Assign one or more of the distributed practice problem sets from Lessons 16–18 to be completed over the time period that the section is being worked on. - These could also be lagging, so that students are working on practice problems from the previous section or unit during this section or unit. - Specify which problems students should submit, or let them choose by using learning targets to decide what additional practice they need. - Note: Several existing platforms already have IM's practice problems loaded so that students can complete and submit them online. Some can be autoscored.
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Anytime Resources	- Teach and encourage students to study the lesson summaries (at the end of every lesson) and refer back to them. - Emphasize the Are You Ready for More opportunities to students who want to explore the topics in more depth. - Delve into one of the culminating lessons from earlier units. - Select some student work from the week and use one of the following routines: ○ Math Language Routine 3: Clarify, Critique, Correct ○ Math Language Routine 7: Compare and Connect
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