Grade Level	**6**	**Content Area**	**Mathematics**
Course Title (grades 9-12 only)			
Length of Unit	8 days	**Time of Year**	October
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	All previous, sequenced Common Core Standards lesson relative to these lessons: order of operations, standard form for a # in exponential form, writing word sentences as equations, solving for the unknown in an equation.		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	Diagnostic Pretest, Ability Grouping, whole group and pair groups, Direct and Mastery-Based Instruction At Risk & Physically Impaired use models and tools to aide in comprehension. Accelerated Learners – Explore real world use and application of concepts through graphing.		
Standard Number and Description *List the Number* and full description for the required Standard.*	Grade: 6 Domain: Expressions and Equations (EE) 6.EE.7 Cluster: Reason about and solve one-variable equations and inequalities Standard: #7 - Solve real-world and mathematical problems by writing and solving equations of the form X + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers		
Summative Assessment *Describe a cumulative and comprehensive activity, clearly separate from instruction and guided or independent practice, which allows each student to individually demonstrate mastery of the required Standard. A copy of the summative assessment must be attached to the curriculum sample*	Assessment attached –adapted from Chapter 4 test- Harcourt Math Program For students needing adaptive assessing: A student evaluation can be used through demonstration of concepts using index cards with symbols, numbers equations, and words with concept. Students match word symbol cards to number equation cards.		
Scoring Scale and Mastery Level	School grading scale as follows: 16 questions @ 5 points = 80 pts=100% 94% - 100% = A **64 points (80%) = Mastery of standard 6.EE.7** 87% - 93% = B 80% - 86% = C 70% – 79% = D 69% - 0% = Needs remediation		
Materials/Resources Needed	Math text book, worksheets, index cards, white board, math journals for Cornell Note Taking		

Lesson (add as needed)	Instruction	Student Activities
1 We Do	***Lesson 1 Objective: I can do order of operations in math.*** 1 - Teacher welcomes students to class and reads the lesson objective. 2 - Teacher using direct instruction reviews the order of operations rules. 3 - Teacher asks students to participate in an interactive discussion, question/answer period. 4 - Teacher provides students an opportunity to practice number and operations concepts and problems on worksheets and the white board. 5 - Teacher circulates to observe students applying order of operations rules and verifies students have mastered lesson 1 rules and concepts. – Formative Assessments 6 – Teacher asks students to re-read the objective and class is dismissed.	Students repeat the objective. Students participate in an interactive discussion answering and asking questions related to order of operations. Students practice applying these rules in pair groups on the whiteboard and practice worksheets from workbook. Students re-read the objective.
2 I Do We Do	***Lesson 2 Objective: I can translate expressions.*** 1 - Teacher welcomes students to class and reads the lesson objective. 2 - Using direct instruction, teacher introduces and explains how to translate expressions using examples on the whiteboard. 3 - Teacher asks students to participate in an interactive discussion, question/answer period. 4 - Teacher has students practice translating expressions of problems on student worksheets. 5 - Teacher goes to each student providing additional one on one support as needed. 6 - Teacher asks students to re-read the lesson objective and class is dismissed.	Students repeat the objective. Students participate in an interactive discussion answering and asking questions related to translating explanations. Students practice translating expressions by completing worksheets from math workbook. Students read the objective.
3 You Do I Do	***Lesson 3 Objective: I can evaluate algebraic expressions.*** 1 - Teacher welcomes students to class and reads the lesson objective 2 - Teacher reviews Lessons 1&2 and administers Formative assessment: Quiz on Lesson 1&2. 3 - Teacher introduces explains and demonstrates how to evaluate algebraic expressions. 4- Teacher leads students in an interactive discussion.	Students repeat the objective. Students complete a quiz on Lessons 1 & 2. Students participate in an interactive discussion, answering and asking questions relating to algebraic expressions.

	5 - Teacher has students practice translating expressions of problems on student worksheets. 6 - Teacher goes to each student providing additional one on one support as needed. 7 - Teacher reads lesson objective and class is dismissed.	Students practice using worksheets from math workbook. Students repeat the objective.
4 I Do We Do You Do	***Lesson 4 Objective: I can solve equations and equalities.*** 1 - Teacher welcomes students to class and reads the lesson objective with the class. 2 - Using direct instruction, teacher introduces and explains how to solve equations and equalities using examples on the whiteboard. 3 - Teacher presents sample problems on whiteboard and leads an interactive discussion, question/answer period. 4 - Teacher has students practice solving equations and equalities on student worksheets. 5 - Teacher goes to each student providing additional one on one support as needed. – Formative Assessment 6 - Teacher and class read lesson objective and class is dismissed.	 Students read objective in unison. Students take Cornell Notes and participate in an interactive discussion, answer and ask questions solving sample equations and equalities. Students complete worksheets. Students re-read objective.
5 I Do We Do You Do	***Lesson 5 Objective: I can improve my abilities to solve addition and subtraction equations***. 1 - Teacher welcomes students to class and reads the lesson objective. 2 - Teacher reviews how to solve addition and subtraction equations using examples on the whiteboard. 3 - Teacher presents sample addition/subtraction problems on the class whiteboard and leads an interactive discussion, question/answer period. 4 - Teacher has students practice solving addition and subtraction equations on student worksheets. 5 - Teacher goes to each student providing additional one on one support as needed. - Formative Assessment 6 - Teacher asks the class to read the lesson objective and class is dismissed.	 Students repeat the day's objective. Students take Cornell Notes and participate in an interactive discussion, answer and ask questions to solve sample equations on the whiteboard together. Students complete practice worksheets. Students re-read the objective.
6 You Do I Do	***Lesson 6 Objective: I can improve my abilities to solve multiplication and division equations***. 1 - Teacher welcomes students to class and has them read the lesson objective. 2 - Teacher administers a quiz on lesson 5. - Formative Assessment 3 - Using direct instruction, teacher reviews how to solve multiplication	 Students read the objective. Students complete a quiz. Students take Cornell Notes participate in an

We Do You Do	and division equations using examples on the whiteboard. 4 - Teacher has students participate in an interactive discussion, question/answer period to solve more problems. 5 - Teacher has students practice solving subtraction equations on student worksheets. 6 - Teacher goes to each student providing additional support as needed. 7 - Teacher reads lesson objective and class is dismissed.	interactive discussion, answer and ask questions and practice solving equations on the whiteboard. Students complete worksheets. Students repeat the objective.
7 I Do We Do You Do	***Lesson 7 Objective: I can use algebraic rules to solve problems.*** 1 - Teacher welcomes students to class and reads the lesson objective with them. 2 – Teacher administers a quiz on lessons 5 and 6. - Formative Assessment 3 – Teacher reviews order of operations. 4 - Using direct instruction, teacher introduces and explains how to use algebraic rules to solve problems using examples on the whiteboard. 5 - Teacher asks students to participate in an interactive discussion, question/answer period solving additional equations. 6 - Teacher has students practice use algebraic rules to solve problems on student worksheets. 7 - Teacher goes to each student providing additional support as needed. 8 - Teacher reads lesson objective and class is dismissed.	Students read objective in unison. Students complete a quiz. Students take Cornell Notes and participate in an interactive discussion, answer and ask questions and practice solving equations on the whiteboard. Students complete worksheets. Students repeat the objective.
8 We Do You Do	***Lesson 8 Objective: I can demonstrate my ability to solve real world and mathematical problems by writing and solving equations.*** 1 - Teacher welcomes students to class and reads the lesson objective with them. 2 - Teacher distributes index cards to groups of students requiring them to match components of equations to examples as a review activity. 3 - Teacher circulates to observe mastery of concepts and readiness for a summative assessment. – Formative Assessment (Extra days of practice may be added if needed.) 4 – Teacher administers Summative Assessment. 8 - Teacher reads lesson objective asking students to rate their understanding on a “Fist to Five” scale and class is dismissed.	Students read objective in unison. Student drill/practice matching index cards in groups to show comprehension of equation components. Students complete a Summative Assessment. Students rate their understanding of the objective.

Chapter 4 Test

Evaluate each expression. Watch for the order of operations. Use a calculator to check your work.

1. $(d + e \div 8)^2 - 10f$, when $d = 18$, $e = 56$, and $f = 2$
2. $(2 + 4)^3 \times 66 \div 33$
3. $\frac{98 - w^2}{mt}$, when $w = 2$, $m = 10$, and $t = 2$
4. $35 + 4^2 \times 25 + 7^2 - 9 \times 7$

Write as an expression, equation, or inequality. Use a variable when necessary.

5. 7 multiplied by the sum of a number and 3
6. A number decreased by the product of 5 and 7 is not equal to 10.
7. Three times a number is greater than 30.
8. Half of a number increased by 10

Solve for the missing dimension in each formula.

9. $A = bh$, when $A = 105$ ft^2 and $h = 15$ ft
10. $P = 2(\ell + w)$, when $\ell = 14$ ft and $w = 9$ ft
11. $P = 4s$, when $P = 22$ in.
12. $d = rt$, when $d = 210$ mi and $t = 7$ h

[redacted]

Use a strategy you have learned.

13. Ty works at a nursery. He plants lilies in 12 rows of 8 and ivy in 15 rows of 14. How many does he plant in all?

[redacted]

14. Evaluate the expressions $5x + 2$ and $5(x + 2)$, when $x = 2$. Are the values of the expressions the same or different? Explain your answer.

[redacted]

Match each sentence to an equation and each equation to its solution.

15. A number added to 2 is 64.
    A number doubled is 64.
    A number squared is 64.
    2 subtracted from a number is 64.
    64 subtracted from a number is 0.

$n - 2 = 64$	8
$n^2 = 64$	32
$2n = 64$	62
$n - 64 = 0$	64
$2 + n = 64$	66

16. Explain how you solved each equation in exercise 15.

ive

is students' mastery of the
ves of this chapter.

ground See *Assessment*
ow, pages T24–T25.

ring for Assessment

in that Chapter 4 covered expres-
d equations. Point out that the
of this test is to make sure stu-
derstand what they have
You may wish to review some
r 4 lessons before administering
t.

s for Test Taking

ng prompt, specific feedback
tudents a sense of achieve-
nd suggests ways they can
e in future testing situations.

g the Assessment

re administering the test, it is
ant to tell students how they are
o be assessed, what criteria will
lied in judging their performance,
e goals and consequences of
ment.

owing Assessment

s chart correlates the *Chapter 4*
ems with the lessons in which the
or concepts are taught.

Item Analysis	
st Items	**Lessons**
1–4	4-1, 4-3, 4-9
5–8	4-2–4-7
9–12	4-8
13	4-10
14	4-3
15–16	4-2–4-7

Performance Assessment

■ Items 15 and 16 test students' ability to integrate the following skills:

- translating sentences into equations.
- solving equations by guess and test or by inverse operations.
- using variables.

■ Some students may translate the given sentence rather than match the sentences one by one. Encourage students to show their solution process. Some students may use the answers at the right and reasoning to find the correct solution rather than solve the sentences algebraically.

Reteach/Reassess

■ Refer to the *Diagnostic Reteaching* and/or *Related Activities* sections of the appropriate lesson(s) and to *Alternative Teaching Models* for Chapter 4 available online at www.sadlier-oxford.com.

Then use the *Chapter 4 Post Test* on page 121L to reassess. (See page 121D for answers.) A multiple-choice test can be found in the *Student Test Booklet* for Grade 6.

Additional test items are available on **Practice/Test Generator CD-ROM**.

This page can be placed in students' *Math Portfolios*.

Chapter 4 Test

Evaluate each expression. Watch for the order of operations. Use a calculator to check your work. *Check students' calculations.*

1. $(d + e \div 8)^2 - 10f$, when $d = 18$, $e = 56$, and $f = 2$
   605
2. $(2 + 4)^3 \times 66 \div 33$
   432
3. $\frac{98 - w^2}{mt}$, when $w = 2$, $m = 10$, and $t = 2$
   4.7
4. $35 + 4^2 \times 25 + 7^2 - 9 \times 7$
   421

Write as an expression, equation, or inequality. Use a variable when necessary.

5. 7 multiplied by the sum of a number and 3 $7(n + 3)$
6. A number decreased by the product of 5 and 7 is not equal to 10.
   $n - (5 \cdot 7) \neq 10$
7. Three times a number is greater than 30.
   $3n > 30$
8. Half of a number increased by 10
   $\frac{1}{2}n + 10$

Solve for the missing dimension in each formula.

9. $A = bh$, when $A = 105$ ft^2 and $h = 15$ ft
   $b = 7$ ft
10. $P = 2(\ell + w)$, when $\ell = 14$ ft and $w = 9$ ft
    $P = 46$ ft
11. $P = 4s$, when $P = 22$ in.
    $s = 5.5$ in.
12. $d = rt$, when $d = 210$ mi and $t = 7$ h
    $r = 30$ mph

Problem Solving

Use a strategy you have learned.

13. Ty works at a nursery. He plants lilies in 12 rows of 8 and ivy in 15 rows of 14. How many does he plant in all?
    $12 \times 8 = 96$; $15 \times 14 = 210$; $96 + 210 = 306$; 306 plants

Tell About It Check students' explanations.

14. Evaluate the expressions $5x + 2$ and $5(x + 2)$, when $x = 2$. Are the values of the expressions the same or different? Explain your answer. $5x + 2 = 5 \cdot 2 + 2 = 12$; $5(x + 2) = 5(2 + 2) = 20$; different, because of the order of operations.

Performance Assessment

Match each sentence to an equation and each equation to its solution.

15. A number added to 2 is 64. — $n - 2 = 64$
    A number doubled is 64. — $n^2 = 64$
    A number squared is 64. — $2n = 64$
    2 subtracted from a number is 64. — $n - 64 = 0$
    64 subtracted from a number is 0. — $2 + n = 64$

    8
    32
    62
    64
    66

16. Explain how you solved each equation in exercise 15. Check students' explanations.