

Common Core Classroom Connections

Chapter One

Section 1.1

1. Go to the *Common Core State Standards* website (<http://www.corestandards.org/Math>). **This is** the main site for further questions about the *Common Core Standards for Mathematics*.
 - a. Look under the menu item “Introduction” to see how the standards are organized by **Standards, Clusters** and **Domains**.
 - b. Pick a grade level from the menu and select a **Domain** to see the **Standards** listed in that domain.
 - c. Go back to the menu and select *Standards for Mathematical Practice*. In your own words, how would you describe the difference between the “Standards for Mathematical Practice” and the “Grade-level Standards”?

Section 1.2

2. Common Core (website: <http://www.corestandards.org/Math> or app)

In the *Common Core State Standards* under the *Standards for Mathematical Practice*, read the paragraph under “CCSS.Math.Practice.MP1 Make Sense of Problems and Persevere in Solving Them”. Choose one problem from #44 to #52 in this section that you have solved and explain what parts of this practice you employed in your solution. Use examples from your solution in your explanation.

3. Common Core (website: <http://www.corestandards.org/Math> or app)

Read the *Common Core State Standards* Grade 4 *Operations & Algebraic Thinking* content standard 4.OA.5. Identify an example in this section, or in *Exercises and Problems 1.2*, that you believe satisfies this standard and explain how the example you picked satisfies this content standard.

Section 1.3

4. Common Core (website: <http://www.corestandards.org/Math> or app)

The *Common Core* Grade 6 content standards have a domain called *Expressions & Equations*. Read through the nine *Expressions & Equations* content objectives to determine which objectives you believe can be achieved using the balance-scale model from this section. Explain how these content objectives can be achieved.

Common Core Classroom Connections**Chapter Two****Section 2.1**

5. Common Core (website: <http://www.corestandards.org/Math> or app)

In the *Common Core State Standards* at the Kindergarten level, students are expected to start to classify objects and in Grades 3 and 4, students are expected to analyze two-dimensional shapes.

- a. Which mathematical content standards give these expectations?
- b. Describe how you might, as a teacher, use sorting and classifying attribute pieces, as done in this section, to address these standards.

Section 2.2

6. Common Core (website: <http://www.corestandards.org/Math> or app)

In the *Common Core State Standards*, at what grade level(s) are students expected to start working with linear equations; with functions?

- a. Which standards give these expectations?
- b. Pick one problem done in class or as homework that you believe employs one or more processes from the *CCSS Mathematical Practices* and addresses at least one of these standards. Describe the problem and explain how the problem addresses these standard(s) and the *Mathematical Practice* you have picked.

Section 2.3

7. Common Core (website: <http://www.corestandards.org/Math> or app)

Throughout the *Common Core State Standards*, the *Mathematical Practices* say that students should "Construct viable arguments and critique the reasoning of others". Describe how the ideas of deductive reasoning in this section address this mathematical practice using Example J as a basis for your argument.

Common Core Classroom Connections

Chapter Three

Section 3.1

8. Common Core (website: <http://www.corestandards.org/Math> or app)
In Grade 1 (1.NBT.2) and in Grade 2 (2.NBT.1), the *Number and Operations in Base Ten* content standard refers to the idea of “bundling” with respect to place value.
 - a. Read and then summarize these standards in your own words.
 - b. Pick one of the base ten numeration models in Section 3.1 and explain how you can use this model to specifically address the standards you describe in part a.

Section 3.2

9. Common Core (website: <http://www.corestandards.org/Math> or app)
 - a. According to the *Common Core State Standards*, at what grade level are students expected to have mastered whole number addition and subtraction “within 1000”? Which mathematical content standards give this expectation?
 - b. Pick one whole number addition or subtraction problem done in class or as homework that you believe employs one or more processes from the *CCSS Mathematical Practices*. Describe the problem and explain how the problem addresses the *Mathematical Practice* you have picked.

Section 3.3

10. Common Core (website: <http://www.corestandards.org/Math> or app)

Read the *Common Core State Standards Grade 4 Number and Operations in Base Ten* content standard 4.NBT.5. Refer to Table 3 in the Glossary of the *Common Core State Standards* for a list of the properties of operations.

Review Example C in this section and then explain how this example addresses the idea of multiplication “...using strategies based on place value and the properties of operations.”

Section 3.4

11. Common Core (website: <http://www.corestandards.org/Math> or app)

In the introduction to the Grade 3 Standards, the authors refer to “equal-sized group (division) situations”.

- a. Which Grade 3 standard expands on this idea?
- b. Give a specific division example and compare the Section 3.4 terminology “sharing / measurement” with the CCSS “number of objects / number of shares” terminology as it relates to your example.

Common Core Classroom Connections

Chapter Four

Section 4.1

12. Common Core (website: <http://www.corestandards.org/Math> or app)

Read the *Common Core State Standards Grade 4 Operations & Algebraic Thinking* content standard 4.OA.4. Describe how you can use rectangle array models (see page 224 of your text) to address each of the ideas in this mathematics content standard.

Section 4.2

13. Common Core (website: <http://www.corestandards.org/Math> or app)

- a. At what grade level in the *Common Core State Standards* are students expected to start finding greatest common factors and least common multiples? Give the standard that lists this expectation.
- b. Pick one problem done in class or as homework that you believe employs one or more processes from the *CCSS Mathematical Practices* and this standard. Describe the problem and explain how the problem addresses the standard and the *Mathematical Practice* you have picked.

Common Core Classroom Connections

Chapter Five

Section 5.1

14. Common Core (website: <http://www.corestandards.org/Math> or app)
 - a. According to the *Common Core State Standards*, at what grade level are students expected to have mastered integer operations?
 - b. Pick one integer operation problem done in class or as homework that you believe employs one or more processes from the *CCSS Mathematical Practices*. Describe the problem and explain how the problem addresses the *Mathematical Practice* you have picked.

Section 5.2

15. Common Core (website: <http://www.corestandards.org/Math> or app)
Read through Example R on page 300 in your text.
 - a. What Grade 4 standard from the *Common Core State Standards* is addressed in this example? Summarize this standard in your own words.
 - b. List each of the *CCSS Mathematical Practices* you believe are illustrated in Example R. Explain how they apply.

Section 5.3

16. Common Core (website: <http://www.corestandards.org/Math> or app)
Read the *Common Core* content standard 5.NF.5b.
 - a. Summarize the meaning of this standard in your own words.
 - b. Use detailed diagrams of Fraction Bars with explanation to show step-by-step how you can illustrate this standard.

Common Core Classroom Connections**Chapter Six****Section 6.1**

17. Common Core (website: <http://www.corestandards.org/Math> or app)
- The grade-five standard in 5.NBT.3 says, “Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons”. Use the Decimal Square models for .229 and .230 to illustrate the meaning of this standard.
 - Content standard 5.NBT.4 says, “Use place value understanding to round decimals to any place.” Use the Decimal Square model to illustrate this standard by explaining how to round .249 to the nearest hundredth, then how to round .249 to the nearest tenth.

Section 6.2

18. Common Core (website: <http://www.corestandards.org/Math> or app)

By the end of grade 5 students are expected to attain content standard 5.NBT.7. Show how the Decimal Square diagram for $.80 \div 4$ on page 372 of your text can be adapted to illustrate how to use a concrete model to show that $.80 \div .4$ is equivalent to $8 \div 4$. In what way does this address 5.NBT.7?

Section 6.3

19. Common Core (website: <http://www.corestandards.org/Math> or app)

Read the Grade 6 standard 6.RP.3. This standard refers to two of the three types of percent problems. Refer to examples H, I, and J on pages 395 and 396 in your text to identify, by name, the two types of percent problems that are mentioned in the standard and the type of percent problem illustrated in your text which is not mentioned in this standard.

Section 6.4

20. Common Core (website: <http://www.corestandards.org/Math> or app)
- It is in eighth grade that irrational numbers are introduced. Read standard 8.NS.2. Follow the example in this standard and explain what they mean when they say to “truncate the decimal expansion of $\sqrt{2}$... to show that $\sqrt{2}$ is between 1.4 and 1.5. “
 - Use a number line model (see Section 6.1 in your text) to illustrate how you would continue the truncation of $\sqrt{2}$ to three and four decimal places to get even better approximations.

Common Core Classroom Connections

Chapter Seven

Section 7.1

21. Common Core (website: <http://www.corestandards.org/Math> or app)
- When are students first expected to work with picture and bar graphs? Give the grade level, the domain and summarize the standard that expresses this expectation.
 - At the next grade level, students are expected to expand their understanding of bar graph to a scaled bar graph. Give the grade level, the domain and summarize the standard that expresses this expectation.
 - Sketch examples of a "single-unit scale bar graph" and a "scaled bar graph" using the techniques from this section to illustrate the standards in parts a. and b. Explain your thinking.

Section 7.2

22. Common Core (website: <http://www.corestandards.org/Math> or app)

The CCSS refer to the concepts of mean, median and interquartile range in a four part standard; 6.SP.5.

Analyze the two data sets in Example E (page 478 in your text) using each of the steps in this standard.

Section 7.3

23. Common Core (website: <http://www.corestandards.org/Math> or app)

The Statistics and Probability standard 7.SP.1 discusses the need for samples to represent a population.

Pick one problem done in class or as homework that you believe demonstrates a method to pick a valid population from which to draw conclusions. Explain how you can use this method in your own classroom to address this standard.

Common Core Classroom Connections

Chapter Eight

Section 8.1

24. Common Core (website: <http://www.corestandards.org/Math> or app)
 - a. Summarize the content standard 7.SP.5 in your own words.
 - b. Describe how the spinner activities in Example E on page 524 of your text can be used to address each of the ideas in 7.SP.5.

Section 8.2

25. Common Core (website: <http://www.corestandards.org/Math> or app)
 - a. Summarize the content standard 7.SP.8 in your own words.
 - b. Read the paragraph under “CCSS.Math.Practice.MP5 Use appropriate tools strategically”. Explain how a problem such as the one explored in Example C on page 544 of your text can be used to address both the content standard 7.SP.8 and this mathematical practice.

Common Core Classroom Connections

Chapter Nine

Section 9.1

26. Common Core (website: <http://www.corestandards.org/Math> or app)

Section 9.2

27. Common Core (website: <http://www.corestandards.org/Math> or app)

Section 9.3

28. Common Core (website: <http://www.corestandards.org/Math> or app)

Section 9.4

29. Common Core (website: <http://www.corestandards.org/Math> or app)

Common Core Classroom Connections

Chapter Ten

Section 10.1

30. Common Core (website: <http://www.corestandards.org/Math> or app)

Section 10.2

31. Common Core (website: <http://www.corestandards.org/Math> or app)

Section 10.3

32. Common Core (website: <http://www.corestandards.org/Math> or app)

Common Core Classroom Connections

Chapter Eleven

Section 11.1

33. Common Core (website: <http://www.corestandards.org/Math> or app)

Section 11.2

34. Common Core (website: <http://www.corestandards.org/Math> or app)

Section 11.3

35. Common Core (website: <http://www.corestandards.org/Math> or app)