

**Englewood Public School District**  
**Mathematics**  
**Grade 5**  
**Fourth Marking Period**

**Unit – Real World Problem Solving**

**Overview:** During this unit, students will graph points on the coordinate plane to solve real-world and mathematical problems, and ratio.

**Time Frame:** Chapter 13 – 14 days, Chapter 7 or Review Standards from Grade 5 – 14 days  
(Pacing includes 1 day for Chapter Opener pages if needed.)

**Enduring Understandings:**

*Properties of geometric figures state relationships among angles or sides of the figures.*

*Two numbers can be compared by subtraction.*

*Two or more numbers or quantities can also be compared by division and the comparison expressed as a ratio.*

**Essential Questions:**

*How are properties used to classify geometric figures?*

*What are some relationships between angles and sides of polygons?*

*What is a ratio?*

Standards	Topics and Objectives	Activities	Resources	Assessments
<b>Chapter 13</b>				
<b>5.G.B.3.</b> Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i>	<b>Topics</b>  Understanding that triangles and four-sided figures have their own special properties.  Twenty-First Century Themes and Skills include: <ul style="list-style-type: none"> <li>• <u>Creativity and Innovation</u></li> <li>• <u>Critical Thinking and Problem Solving</u></li> <li>• <u>Communication and</u></li> </ul>	<b>Math Playground</b> <a href="http://www.mathplayground.com/">http://www.mathplayground.com/</a>  <b>Math Coach – Fact Fluency</b> <a href="http://schoolwires.henry.k12.ga.us/Page/21865">http://schoolwires.henry.k12.ga.us/Page/21865</a>  <b>Math Wire – Basic Facts Link</b> <a href="http://mathwire.com/nu">http://mathwire.com/nu</a>	<b>SE -5B:</b> 186-223 <b>Workbook 5B:</b> 121-144  <b>Common Core Focus Lesson Appendix</b>  <b>Think Central:</b> Online access to all Math in Focus materials listed above and Virtual Manipulatives  <b>Professional Resources:</b>	<b>Unit 4 Benchmark Assessment:</b> <ul style="list-style-type: none"> <li>• Exact Path</li> </ul> <b>Formative Assessments:</b> <ul style="list-style-type: none"> <li>• Do Now</li> <li>• Exit Ticket</li> <li>• Math Journal Entries (CRP4)</li> <li>• Math notebook (NJSLSA.W2.)</li> <li>• Calendar skills</li> </ul>

<p>dimensional figures in a hierarchy based on properties.</p> <p><i>Mathematical Practices</i> MP.1, MP.2, MP.3, MP.4, MP.6</p>	<p><u>Collaboration</u></p> <p><b>Objectives</b></p> <p>The students will be able to:</p> <ul style="list-style-type: none"> <li>Classify triangles by the lengths of their lengths, and angle measurements.</li> <li>Understand and apply the property that the sum of the angle measures of a triangle is <math>180^\circ</math>.</li> <li>Understand and apply the properties of right, isosceles and equilateral triangles.</li> <li>Understand that the sum of the length of any two sides a triangle is greater than the length of the third side.</li> <li>Understand and apply the properties of parallelogram, rhombus, and trapezoid.</li> </ul>	<p><a href="http://mbersense/bfactslinks.html">mbersense/bfactslinks.html</a></p> <p><b>Math Fact Practice</b> <a href="http://www.playkidsgames.com/games/mathfact/mathFact.htm">http://www.playkidsgames.com/games/mathfact/mathFact.htm</a></p> <p><b>Critical Thinking and Problem Solving</b> p.251: Put on Your Thinking Cap! (9.2.8.B.3)</p> <p><b>Everything you need to know about math journals:</b> <a href="https://thecornerstoneforteachers.com/math-journals/">https://thecornerstoneforteachers.com/math-journals/</a> (NJSLSA.R1, NJSLSA.W2, NJSLSA.L1)</p> <p><b>Terrific Triangles (uses the book “The greedy triangle):</b> <a href="https://betterlesson.com/lesson/568735/terrific-triangles">https://betterlesson.com/lesson/568735/terrific-triangles</a> ( NJSLSA.R1, CRP2)</p> <p><b>Triangles are plane easy (includes a paper-folding activity):</b> <a href="http://www.cpalms.org/Public/PreviewResourceLesson/Preview/46746">http://www.cpalms.org/Public/PreviewResourceLesson/Preview/46746</a></p>	<p>The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD.</p> <p><b>Lesson and Component Walkthrough:</b> <a href="http://www.hmhelearning.com">www.hmhelearning.com</a></p> <p><b>Technology Resources</b></p> <ul style="list-style-type: none"> <li>Math in Focus eBooks</li> <li>Math in Focus Teacher Resources CD</li> </ul> <p><b><u>Standards Solution Lessons:</u></b></p> <ul style="list-style-type: none"> <li><b>PARCC Lesson 17:</b> Practice PARCC Type I Geometry</li> <li><b>CCSS Lesson Plan:</b> Hierarchy of Two-Dimensional Shapes</li> <li><b>CCSS Prescriptive Lesson Plan:</b> String Attributes Abound</li> </ul> <p><b>5<sup>th</sup> grade assessments, interactive, videos, games, lessons, homework:</b> <a href="https://www.opened.com/search?area=mathematics&amp;grade=5&amp;offset=0&amp;resource_type=interactive-assessment">https://www.opened.com/search?area=mathematics&amp;grade=5&amp;offset=0&amp;resource_type=interactive-assessment</a> (CRP2, CRP4, CRP8)</p> <p><b>5th grade worksheets,</b></p>	<ul style="list-style-type: none"> <li>Observations</li> <li>Discussions: in groups, have students explain different ways of solving problems (CRP4)</li> <li>Multiple choice / short answer assessments</li> <li>Mini quizzes – assess just one topic, or what was done within 1 or 2 days (CRP8)</li> </ul> <p><b>Summative Assessments: Math in Focus Assessments</b></p> <p>Chapter Review/Test – pp 226-228</p> <p>Assessments 5 – pp. 125-130</p> <p>ExamView Assessment Suite – Test and Practice Generator</p> <p><b>Alternative Assessments:</b> Learning centers: each learning center focuses on a different type of problem</p>
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**Properties of quadrilaterals exercise:**  
<https://www.education.com/exercise/properties-of-quadrilaterals/>

**Quadrilaterals game:**  
<https://www.iknowit.com/lessons/d-geometry-quadrilaterals.html>

**Triangle inequalities exploration lesson:**  
<https://www.radford.edu/rumath-smpdc/Performance/src/Brewer%20-%20Triangle%20Inequality%20Task.pdf>

**Children's books:**  
<https://www.the-best-childrens-books.org/math-for-kids.html>

**More additional texts:**  
[www.newsela.com](http://www.newsela.com)  
[www.readworks.org](http://www.readworks.org)  
[www.commonlit.org](http://www.commonlit.org)

**games, lessons, activities:**  
<https://www.education.com/resources/fifth-grade/>  
(CRP2, CRP4, CRP8)

**5<sup>th</sup> grade worksheets:**  
<https://www.k5learning.com/free-math-worksheets/fifth-grade-5>  
(CRP2, CRP4, CRP8,)

**5<sup>th</sup> grade common core worksheets:**  
<https://www.ixl.com/math/grade-5>  
(CRP2, CRP4, CRP8)

**Khan Academy – videos, lessons, assessments**  
[www.khanacademy.org](http://www.khanacademy.org)  
(8.1.5.A.1)

## Chapter 7

(Gr. 6 standard)

**6.RP.A.1.** Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”*

### Topics

Comparing numbers by division and expressing this comparison as a ratio.

Twenty-First Century Themes and Skills include:

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration

### Objectives

Students will be able to:

- Read and write ratios.
- Find equivalent ratios
- Solve real-world problems involving ratios.
- Interpret ratios given in fraction form.
- Write ratios in fraction form to find how many times as large as one number another number is.
- Read and write ratios with three quantities.
- Express equivalent ratios with three quantities.
- Solve real-world problems involving ratios

### Math Playground

<http://www.mathplayground.com/>

### Math Coach – Fact Fluency

<http://schoolwires.henry.k12.ga.us/Page/21865>

### Math Wire – Basic Facts Link

<http://mathwire.com/numbersense/bfactslinks.html>

### Math Fact Practice

<http://www.playkidsgames.com/games/mathfact/mathFact.htm>

### Critical Thinking and Problem Solving p.312:

Put on Your Thinking Cap! (9.2.8.B.3)

### Everything you need to know about math journals:

<https://thecornerstoneforteachers.com/math-journals/> (NJSLSA.R1, NJSLSA.W2, NJSLSA.L1)

SE-5A: 269-315

Workbook 5A: 209-238

### Common Core Focus Lesson Appendix

**Think Central:** Online access to all Math in Focus materials listed above and Virtual Manipulatives

### Professional Resources:

The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD.

### Lesson and Component Walkthrough:

[www.hmhelearning.com](http://www.hmhelearning.com)

### Technology Resources

- Math in Focus eBooks
- Math in Focus Teacher Resources CD

### 5<sup>th</sup> grade assessments, interactive, videos, games, lessons, homework:

[https://www.opened.com/search?area=mathematics&grade=5&offset=0&resource\\_type=interactive-assessment](https://www.opened.com/search?area=mathematics&grade=5&offset=0&resource_type=interactive-assessment) (CRP2, CRP4, CRP8)

### Formative Assessments:

- Do Now
- Exit Ticket
- Math Journal Entries (CRP4)
- Math notebook (NJSLSA.W2.)
- Calendar skills
- Observations
- Discussions: in groups, have students explain different ways of solving problems (CRP4)
- Multiple choice / short answer assessments
- Mini quizzes – assess just one topic, or what was done within 1 or 2 days (CRP8)

### Summative Assessments:

### Math in Focus Assessments

Chapter Review/Test – pp 314-315

Assessments 5 – pp.57-60

ExamView Assessment

<p>and fractions.</p> <ul style="list-style-type: none"> <li>Solve real-world problems involving ratios with three quantities.</li> </ul>	<p><b>Common core ratio worksheets:</b>  <a href="http://www.commoncoresheets.com/Ratios.php">http://www.commoncoresheets.com/Ratios.php</a>  (CRP2, CRP4, CRP8)</p> <p><b>Pizza and jelly beans to teach ratios:</b>  <a href="https://www.brighthubeducation.com/elementary-school-activities/92864-use-food-to-teach-math-ratios/">https://www.brighthubeducation.com/elementary-school-activities/92864-use-food-to-teach-math-ratios/</a>  (CRP4)</p> <p><b>Exploring equal ratios:</b>  <a href="https://www.teachervision.com/ratio-proportion/exploring-equal-ratios-gr-5">https://www.teachervision.com/ratio-proportion/exploring-equal-ratios-gr-5</a>  (CRP4)</p> <p><b>Children’s books:</b>  <a href="https://www.the-best-childrens-books.org/math-for-kids.html">https://www.the-best-childrens-books.org/math-for-kids.html</a></p> <p><b>More additional texts:</b>  <a href="http://www.newsela.com">www.newsela.com</a>  <a href="http://www.readworks.org">www.readworks.org</a>  <a href="http://www.commonlit.org">www.commonlit.org</a></p>	<p><b>5th grade worksheets, games, lessons, activities:</b>  <a href="https://www.education.com/resources/fifth-grade/">https://www.education.com/resources/fifth-grade/</a>  (CRP2, CRP4, CRP8)</p> <p><b>5<sup>th</sup> grade worksheets:</b>  <a href="https://www.k5learning.com/free-math-worksheets/fifth-grade-5">https://www.k5learning.com/free-math-worksheets/fifth-grade-5</a>  (CRP2, CRP4, CRP8)</p> <p><b>5<sup>th</sup> grade common core worksheets:</b>  <a href="https://www.ixl.com/math/grade-5">https://www.ixl.com/math/grade-5</a>  (CRP2, CRP4, CRP8)</p> <p><b>Khan Academy – videos, lessons, assessments</b>  <a href="http://www.khanacademy.org">www.khanacademy.org</a>  (8.1.5.A.1)</p>	<p>Suite – Test and Practice Generator</p> <p><b>Alternative Assessments:</b>  Learning centers: each learning center focuses on a different type of problem</p>
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<p><b>Fluency Standards:</b></p> <p><b>5.NBT.B.5.</b> Fluently multiply multi-digit whole numbers using the standard algorithm.</p> <p><b>In-depth Focus Standards:</b></p> <p><b>5.NBT.A.1.</b> Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and <math>\frac{1}{10}</math> of what it represents in the place to its left.</p> <p><b>5.NBT.B.6</b> Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p> <p><b>5.NF.A.2.</b> Solve word problems involving addition and subtraction of fractions referring to the same whole,</p>	<p><b>Examples of Opportunities for In-depth Focus</b></p> <p>5.NBT.1 The extension of the place value system from whole numbers to decimals is a major intellectual accomplishment involving understanding and skill with base-ten units and fractions.</p> <p>5.NBT.6 The extension from one-digit divisors to two-digit divisors requires care. This is a major milestone along the way to reaching fluency with the standard algorithm in grade 6 (6.NS.2).</p> <p>5.NF.2 When students meet this standard, they bring together the threads of fraction equivalence (grades 3–5) and addition and subtraction (grades K–4) to fully extend addition and subtraction to fractions.</p> <p>5.NF.4 When students meet this standard, they fully extend multiplication to fractions, making division of fractions in grade 6 (6.NS.1) a near target.</p>	<p><b>Math Playground</b> <a href="http://www.mathplayground.com/">http://www.mathplayground.com/</a></p> <p><b>Math Coach – Fact Fluency</b> <a href="http://schoolwires.henry.k12.ga.us/Page/21865">http://schoolwires.henry.k12.ga.us/Page/21865</a></p> <p><b>Math Wire – Basic Facts Link</b> <a href="http://mathwire.com/numbersense/bfactslinks.html">http://mathwire.com/numbersense/bfactslinks.html</a></p> <p><b>Math Fact Practice</b> <a href="http://www.playkidsgames.com/games/mathfact/mathFact.htm">http://www.playkidsgames.com/games/mathfact/mathFact.htm</a></p> <p><b>Everything you need to know about math journals:</b> <a href="https://thecornerstoneforteachers.com/math-journals/">https://thecornerstoneforteachers.com/math-journals/</a> (NJSLSA.R1, NJSLSA.W2, NJSLSA.L1)</p> <p><b>Children’s books:</b> <a href="https://www.the-best-childrens-books.org/math-for-kids.html">https://www.the-best-childrens-books.org/math-for-kids.html</a></p> <p><b>More additional texts:</b> <a href="http://www.newsela.com">www.newsela.com</a> <a href="http://www.readworks.org">www.readworks.org</a></p>	<p><b>Think Central:</b> Online access to all Math in Focus materials listed above and Virtual Manipulatives</p> <p><b>Professional Resources:</b> The Model Method from the Ministry of Education Singapore and Bar Modeling: A Bar Modeling Tool by Yeap Ban Har, PhD.</p> <p><b>Lesson and Component Walkthrough:</b> <a href="http://www.hmhelearning.com">www.hmhelearning.com</a></p> <p><b>Technology Resources</b></p> <ul style="list-style-type: none"> <li>• Math in Focus eBooks</li> <li>• Math in Focus Teacher Resources CD</li> </ul> <p><b>5<sup>th</sup> grade assessments, interactive, videos, games, lessons, homework:</b> <a href="https://www.opened.com/search?area=mathematics&amp;grade=5&amp;offset=0&amp;resource_type=interactive-assessment">https://www.opened.com/search?area=mathematics&amp;grade=5&amp;offset=0&amp;resource_type=interactive-assessment</a> (CRP2, CRP4, CRP8)</p> <p><b>5th grade worksheets, games, lessons, activities:</b> <a href="https://www.education.com/resources/fifth-grade/">https://www.education.com/resources/fifth-grade/</a> (CRP2, CRP4, CRP8)</p>	<p><b>Formative Assessments:</b></p> <ul style="list-style-type: none"> <li>• Do Now</li> <li>• Exit Ticket</li> <li>• Math Journal Entries (CRP4)</li> <li>• Math notebook (NJSLSA.W2.)</li> <li>• Calendar skills</li> <li>• Observations</li> <li>• Discussions: in groups, have students explain different ways of solving problems (CRP4)</li> <li>• Multiple choice / short answer assessments</li> <li>• Mini quizzes – assess just one topic, or what was done within 1 or 2 days (CRP8)</li> </ul> <p><b>Summative Assessments:</b> Diagnostic Tests</p> <p><b>Alternative Assessments:</b> Learning centers: each learning center focuses on a different type of problem</p>
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including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result  $2/5 + 1/2 = 3/7$ , by observing that  $3/7 < 1/2$ .*

**5.NF.B.4.** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

- a. Interpret the product  $(a/b) \times q$  as  $a$  parts of a partition of  $q$  into  $b$  equal parts; equivalently, as the result of a sequence of operations  $a \times q \div b$ . *For example, use a visual fraction model to show  $(2/3) \times 4 = 8/3$ , and create a story context for this equation. Do the same with  $(2/3) \times (4/5) = 8/15$ . (In general,  $(a/b) \times (c/d) = ac/bd$ .)*

Find the area of a rectangle with fractional side lengths

[www.commonlit.org](http://www.commonlit.org)

5.MD.5

Students work with volume as an attribute of a solid figure and as a measurement quantity. Students also relate volume to multiplication and addition. This work begins a progression leading to valuable skills in geometric measurement in middle school.

**5<sup>th</sup> grade worksheets:**

<https://www.k5learning.com/free-math-worksheets/fifth-grade-5>  
(CRP2, CRP4, CRP8)

**5<sup>th</sup> grade common core worksheets:**

<https://www.ixl.com/math/grade-5>  
(CRP2, CRP4, CRP8)

**Khan Academy – videos, lessons, assessments**

[www.khanacademy.org](http://www.khanacademy.org)  
(8.1.5.A.1)



by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

**5.MD.C.5.** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

- a) Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
- b) Apply the formulas  $V = l \times w \times h$  and  $V = b \times h$  for



rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.

- c) Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

#### **Key Vocabulary:**

Chapter 13:

equilateral triangle, isosceles triangle, scalene triangle, right triangle, obtuse triangle, acute triangle, parallelogram, rhombus, trapezoid

Chapter 7:

ratio, term, equivalent ratios, simplest form, greatest common factor

#### **Accommodations and Modifications:**

**Students with special needs:** Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders. Modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered. Additional staff should be included so all students can fully participate in the standards associated with this curriculum.

**ELL/ESL students:** Students will be supported according to the recommendations for “can do’s” as outlined by WIDA - [https://www.wida.us/standards/CAN\\_DOs/](https://www.wida.us/standards/CAN_DOs/)

**Students at risk of school failure:** Formative and summative data will be used to monitor student success at first signs of failure. Student work will be reviewed to determine support. This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations. More time will be made available with a certified instructor to aid students

in reaching the standards.

**Gifted and Talented Students:** Students excelling in mastery of standards will be challenged with complex, high level challenges.

English Language Learners:	Special Education:	At-Risk:	Gifted and Talented:
<ul style="list-style-type: none"><li>• Teaching modeling</li><li>• Peer modeling</li><li>• Word walls</li><li>• Give directions in small steps and in as few words as possible</li><li>• Provide visual aids</li><li>• Group similar problems together</li><li>• Repeat directions when necessary</li><li>• Provide a vocabulary list with definitions</li></ul>	<ul style="list-style-type: none"><li>• Utilize modifications &amp; accommodations delineated in the students' IEP</li><li>• Work with paraprofessional</li><li>• Work with a partner</li><li>• Shorten assignments to focus on mastery or key concepts</li><li>• Maintain adequate space between desks</li><li>• Keep workspaces clear of unrelated materials</li><li>• Provide fewer problems to attain passing grades</li><li>• Tape a number line to the students desk</li><li>• Create a math journal that they can use during class, on assignments and (if teacher allows) on assessments</li><li>• Provide extra time to complete a task when needed</li><li>• Provide definitions of different graphs / charts with illustrations</li><li>• Allow tests to be taken in a separate room</li><li>• Allow students to use a calculator when appropriate</li></ul>	<ul style="list-style-type: none"><li>• Use visual demonstrations, illustrations and models</li><li>• Give directions / instructions verbally and in simple written format</li><li>• Peer support</li><li>• Increased one – on – one time</li><li>• Teachers may modify instructions by modeling what the student is expected to do</li><li>• Instructions may be printed out in large print and hung up for the students to see during the time of the lesson</li><li>• Review behavior expectations and made adjustments</li><li>• Create a math journal that they can use during class, on assignments and (if teacher allows) on assessments</li><li>• Allow students to complete an independent project as an alternative test</li></ul>	<ul style="list-style-type: none"><li>• Inquiry based instruction</li><li>• Independent study</li><li>• Higher order thinking skills</li><li>• Adjusting the pace of the lessons</li><li>• Real world scenarios</li><li>• Student driven instruction</li><li>• Allow students to complete an independent project as an alternative test</li></ul>

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|  | <ul style="list-style-type: none"> <li>• Divide test into small sections of similar questions or problems</li> </ul> |  |  |
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**Interdisciplinary Connections: ELA**

**NJSLSA.R1.** Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

**NJSLSA.W2.** Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content

**NJSLSA.L1.** Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

**Integration of Technology Standards NJSLS:**

**8.1.5.A.1:** Select and use the appropriate digital tools and resources to accomplish a variety of tasks including problem solving

**21<sup>st</sup> Century Standards**

**9.2.8.B.3** Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.

**Career Ready Practices:**

**CRP2:** Apply appropriate academic and technical skills

**CRP4:** Communicate clearly and effectively and with reason

**CRP6:** Demonstrate creativity and innovation

**CRP8:** Utilize critical thinking to make sense of problems and persevere in solving them

**Major** **Supporting** **Additional** (Identified by PARCC Model Content Frameworks)