Transitioning to the 2014 Indiana Academic Standards (IAS):
Instructional and Assessment Guidance

Opportunity to Learn
From an assessment perspective, transitioning to the college- and career-ready 2014 English/Language Arts and Mathematics Indiana Academic Standards necessitates a focus on “Opportunity to Learn.” Opportunity to Learn (OTL) refers to equitable conditions or circumstances within the school or classroom that promote learning for all students. OTL includes curricula, learning materials and instructional experiences. In short, OTL supports student success by ensuring student access to both content and instruction.

Opportunity to Learn is both a moral imperative and an ethical responsibility on the part of educators. Indiana teachers have a two-fold obligation with regard to OTL. First, teachers must provide students with OTL for Indiana Academic Standards that are assessed in the classroom and on ISTEP+. Second, and more importantly, teachers must provide OTL in terms of the content that students must learn in preparation for college and careers.

Prioritizing Instruction
In an effort to empower teachers and assist with the transition, the Office of Student Assessment has created Instructional and Assessment Guidance (“Guidance”) documents for grades 3-8. The Content Priority of each Standard is delineated in the Guidance as one of three designations:

1) Critical – identified as “✓+”
2) Important – identified as “✓”
3) Additional – identified as “✓-”

All of the Indiana Academic Standards represent valuable content, and the Guidance documents are designed to assist teachers in planning and prioritizing instructional time to ensure student success.

A Final Note
The Guidance documents, as well as the Standards themselves, are not meant to be used as a “checklist.” Rather, when teachers take into consideration the instructional priorities and deliver rich, meaningful lessons, the Standards come to life in the classroom.
Honors 8th Grade Mathematics
Quarter 3

Critical Content

Math Process Standards

50 – 75%
Instructional Time

25 – 50% Instructional Time

5 – 10% Instructional Time

Important Content

Additional Content
# Honors 8th Grade Mathematics


### Quarter 3

## Unit 4: (continued) Algebra and Functions

<table>
<thead>
<tr>
<th>Week</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td>Jan. 5 - 9 8.AF.1: Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems. ✓+  8.AF.2: Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by transforming a given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where $a$ and $b$ are different numbers). ✓  PS: 1, 2, 3, 4, 5, 6, 7, and 8 ✓+</td>
</tr>
<tr>
<td><strong>Week 2</strong></td>
<td>Jan. 12 - 16 8.AF.1: Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems. ✓+  8.AF.3: Understand that a function assigns to each $x$-value (independent variable) exactly one $y$-value (dependent variable), and that the graph of a function is the set of ordered pairs $(x,y)$. ✓  8.AF.7: Compare properties of two linear functions given in different forms, such as a table of values, equation, verbal description, and graph (e.g., compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed). ✓</td>
</tr>
<tr>
<td><strong>Week 3</strong></td>
<td>Jan. 20 – 23 MLK Day 8.AF.2: Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by transforming a given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where $a$ and $b$ are different numbers). ✓  8.AF.5: Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. Describe similarities and differences between linear and nonlinear functions from tables, graphs, verbal descriptions, and equations. ✓  8.AF.6: Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in $y = mx + b$ that $m$ is the slope (rate of change) and $b$ is the $y$-intercept of the graph, and describe the meaning of each in the context of a problem. ✓+</td>
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<tr>
<td><strong>Week 4</strong></td>
<td>(3 days) Jan. 26 - 28 8.AF.8: Understand that solutions to a system of two linear equations correspond to points of intersection of their graphs because points of intersection satisfy both equations simultaneously. Approximate the solution of a system of equations by graphing and interpreting the reasonableness of the approximation. ✓  PS: 1, 2, 3, 4, 5, 6, 7, and 8 ✓+</td>
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## Unit 5: Data Analysis

| Week 4  | (2 days) Jan. 29 - 30 8.DSP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. ✓  8.DSP.2: Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and describe the model fit by judging the closeness of the data points to the line. ✓  8.DSP.3: Write and use equations that model linear relationships to make predictions, including interpolation and extrapolation, in real-world situations involving bivariate measurement data; interpret the slope and $y$-intercept. ✓ |

### Process Standards for Mathematics (PS):  
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.  
6. Attend to precision.  
7. Look for and make use of structure.  
8. Look for and express regularity in repeated reasoning.
### Unit 5: Data Analysis

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| Week 5  Feb. 2 - 6 | 8.DSP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. ✔

8.DSP.2: Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and describe the model fit by judging the closeness of the data points to the line. ✔

8.DSP.3: Write and use equations that model linear relationships to make predictions, including interpolation and extrapolation, in real-world situations involving bivariate measurement data; interpret the slope and y-intercept. ✔

PS: 1, 2, 3, 4, 5, 6, 7, and 8 ✔+

| Week 6  Feb. 9 - 13 | Corrective Instruction

PS: 1, 2, 3, 4, 5, 6, 7, and 8 ✔+

### Unit 6: Geometry – Similarity and Congruence

| Week 7  Feb. 17 - 20 Presidents’ Day | 8.GM.3: Verify experimentally the properties of rotations, reflections, and translations, including: lines are mapped to lines, and line segments to line segments of the same length; angles are mapped to angles of the same measure; and parallel lines are mapped to parallel lines. ✔-

8.GM.4: Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations. Describe a sequence that exhibits the congruence between two given congruent figures. ✔

PS: 1, 2, 3, 4, 5, 6, 7, and 8 ✔+

### Applied Skills Review

**The IDOE’s Instructional and Assessment Guidance document indicates that the following standards may be assessed on ISTEP+ Part One:**

- **8.C.1:** Solve real-world problems with rational numbers by using multiple operations. ✔+
- **8.AF.1:** Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems. ✔+
- **8.AF.2:** Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by transforming a given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). ✔
- **8.AF.6:** Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in y = mx + b that m is the slope (rate of change) and is the y-intercept of the graph, and describe the meaning of each in the context of a problem. ✔+
- **8.GM.8:** Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical problems in two dimensions. ✔+
- **8.DSP.1:** Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. ✔
- **8.DSP.2:** Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and describe the model fit by judging the closeness of the data points to the line. ✔
- **8.DSP.3:** Write and use equations that model linear relationships to make predictions, including interpolation and extrapolation, in real-world situations involving bivariate measurement data; interpret the slope and y-intercept. ✔

PS: 1, 2, 3, 4, 5, 6, 7, and 8 ✔+

### Process Standards for Mathematics (PS):

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<td><strong>Week 9</strong></td>
<td>Mar. 2 - 6 Applied Skills Window Opens</td>
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<tr>
<td><strong>Week 10</strong></td>
<td>Mar. 9 - 13 Applied Skills Window Closes</td>
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| **Week 11**| Mar. 16 - 20 8.DSP.4: Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. Understand and use appropriate terminology to describe independent, dependent, complementary, and mutually exclusive events.  ✓-  
   8.DSP.5: Represent sample spaces and find probabilities of compound events (independent and dependent) using methods, such as organized lists, tables, and tree diagrams.  ✓  
   8.DSP.6: For events with a large number of outcomes, understand the use of the multiplication counting principle. Develop the multiplication counting principle and apply it to situations with a large number of outcomes.  ✓-  
   PS: 1, 2, 3, 4, 5, 6, 7, and 8 ✓+ |

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**SPRING BREAK**

**END OF QUARTER 3**