

A Correlation of

**SCOTT FORESMAN**  
**Investigations**  
IN NUMBER, DATA, AND SPACE®

to the

**INDIANA**  
**Academic Standards**  
**Mathematics**

Grade Four

**PEARSON**

G/M-266\_G4

## INTRODUCTION

This correlation demonstrates the alignment of content between *Investigations in Number, Data, and Space* and Indiana's Academic Standards-Mathematics, Final Draft dated March 12, 2009. Correlation page references are to the Teacher Edition Curriculum Units, Student Math Handbook and Student Activity Book. The Indiana Online Activities for Investigations are available on Pearson SuccessNet in English and Spanish. These activities are cited in the correlation by unit number and activity number. On SuccessNet, you can download each activity which consists of a teacher page and a student page. The teacher page contains related vocabulary, directions for teaching the content, suggested questions to promote discussion, examples of student responses, and differentiation support. These Indiana Activities are provided to give teachers additional support while teaching the Indiana Academic Standards for Mathematics.

*Investigations in Number, Data, and Space* is a Kindergarten through Grade 5 mathematics curriculum designed to engage students in making sense of mathematical ideas. Six major goals guided the development of Investigations in Number, Data, and Space® curriculum. The curriculum is designed to:

- Support students to make sense of mathematics and learn that they can be mathematical thinkers
- Focus on computational fluency with whole number as a major goal of the elementary grades
- Provide substantive work in important areas of mathematics—rational numbers, geometry, measurement, data, and early algebra—and connections among them
- Emphasize reasoning about mathematical ideas
- Communicate mathematics content and pedagogy to teachers
- Engage the range of learners in understanding mathematics.

Underlying these goals are three guiding principles that are touchstones for the *Investigations* ©2008 team as they approach both students and teachers as agents of their own learning:

1. Students have mathematical ideas.
2. Teachers are engaged in ongoing learning about mathematics content, pedagogy and student learning.
3. Teachers collaborate with the students and curriculum materials to create the curriculum as enacted in the classroom.

*Investigations* is based on experience from research and practice. Based on that extensive classroom testing, the curriculum takes seriously the time students need to develop a strong conceptual foundation and skills based on that foundation. Each curriculum unit focuses on an area of content in depth, providing time for students to develop and practice ideas across a variety of activities and contexts that build on each other. An additional set of online lessons has been developed to address specific state standards. Daily guidelines for time spent on class sessions, Classroom Routines (K-3), and Ten-Minute Math (3-5) reflect the commitment to devoting adequate time to mathematics in each school day.

**Investigations in Number, Data, and Space  
to the  
Indiana Academic Standards – Mathematics**

**Grade 4**

Indiana Mathematics Standards	Investigations in Number, Data, and Space
<b>GRADE 4</b>	
<b>Standard 1</b>	
Number Sense and Computation	
4.1.1 Count, read, write, compare and plot whole numbers using words, models, number lines and expanded form.	<b>Unit 5:</b> 18, 37, 44, 48–49, 102–103, 199
4.1.2 Find equivalent fractions and then use them to compare and order whole numbers and fractions using the symbols for less than (<), equals (=), and greater than (>).	<b>Unit 6:</b> 79–82, 84–85, 95–97, 141–142, 151–152, 167–168
4.1.3 Solve problems involving decimals to hundredths.	<b>Unit 6:</b> 117–118, 121–126
• Interpret and model decimals as parts of a whole, parts of a group, and points and distances on a number line.	<b>Unit 6:</b> 105–110, 112
• Use benchmarks (well-known numbers used in meaningful points for comparison) to compare decimals between 0 and 1.0.	<b>Unit 6:</b> 114–115
• Write decimals as fractions.	<b>Unit 6:</b> 117, 119
4.1.4 Use words, models, standard form and expanded form to represent place value of decimal numbers to hundredths.	<b>Unit 6:</b> 105–110, 112–115
4.1.5 Demonstrate fluency with multiplication facts for numbers up to at least 10 and the related division facts. Identify factors of whole numbers and multiplies of whole numbers to 10.	<b>Unit 1:</b> 27–31, 33–37, 39–41, 43–46, 48–52, 59–63, 65–67, 69–75, 77–79, 81–83, 106–111 <b>Unit 3:</b> 97–98, 117–118

Indiana Mathematics Standards	Investigations in Number, Data, and Space
4.1.6 Solve problems using multiplication of two-digit by single-digit and two-digit numbers fluently using a standard algorithmic approach.	<b>Online Activity:</b> Unit 8 Activity 60  This standard can be introduced on these pages. <b>Unit 3:</b> 29–33, 47–50, 52–53, 112–115, 132–135, 137–143, 145–147
4.1.7 Model addition and subtraction of simple fractions.	<b>Unit 6:</b> 12, 53–56, 59–61
4.1.8 Construct and analyze line plots. Given a set of data or a graph, describe the distribution of the data using median, range or mode.	<b>Unit 2:</b> 26–27, 33–34, 77–78, 82–85, 121, 144–148
4.1.9 List all the possible outcomes of a given situation or event. Represent the probability of a given outcome using a picture or other graphic.	<b>Unit 2:</b> 95–100, 108
<b>Standard 2</b>	
Algebra and Functions	
4.2.1 Write and solve equations with (=) to show equivalence and use with variables to express mathematical relationships involving multiplication and division. Plot the points for the corresponding values in the first quadrant.	<b>Unit 9:</b> 74–75, 99, 101–102, 142
4.2.2 Create, extend, and give a rule for number patterns using multiplication and division and non-numeric growing or repeating patterns.	<b>Unit 9:</b> 59, 72–75, 94–95, 98–102, 138, 142, 160–161
4.2.3 Show that the order in which two numbers are multiplied [commutative property] and how numbers are grouped in multiplication [associative property] will not change the product. Use these properties together to show that numbers can be multiplied in any order.	<b>Unit 1:</b> 33, 60–61, 65–66

Indiana Mathematics Standards	Investigations in Number, Data, and Space
4.2.4 Use the distributive property in expressions involving multiplication.	<b>Unit 1:</b> 16–17 <b>Unit 3:</b> 16, 29, 30–33, 43–44, 52–53, 173 <b>Unit 8:</b> 16–18, 65, 69–70, 113
<b>Standard 3</b>	
<b>Geometry and Measurement</b>	
4.3.1 Identify, describe and draw pairs of parallel lines, perpendicular lines, and nonperpendicular intersecting lines using appropriate mathematical tools and technology	<b>Unit 4:</b> 70–71, 77–79, 81–82, 90–91
4.3.2 Identify, describe and draw right angles, acute angles, obtuse angles, straight angles and rays using appropriate tools and technology.	<b>Unit 4:</b> 89–93, 95–101, 103–107
4.3.3 Identify shapes that have reflectional and rotational symmetry.	<b>Unit 4:</b> 113–115
4.3.4 Measure and draw line segments to the nearest eighth-inch and millimeter.	<b>Unit 4:</b> 38–39, 42–43, 48–49
4.3.5 Develop and use formulas for finding the perimeter and area of rectangles, including squares, using appropriate strategies (e.g. decomposing shapes), tools and units of measure.	<b>Unit 4:</b> 34–35, 37–38, 42, 48, 114–115, 128–134, 136–138, 142, 144–145
<b>Process Standards</b>	
<b>Problem Solving</b>	
<ul style="list-style-type: none"> <li>• Build new mathematical knowledge through problem solving.</li> </ul>	These are some of the many examples. <b>Unit 1:</b> 27, 25 <b>Unit 3:</b> 11–13, 29–30, 32–33, 61–64, 73–75 <b>Unit 5:</b> 46–50, 61–65, 118–121, 133–137, 157

Indiana Mathematics Standards	Investigations in Number, Data, and Space
<ul style="list-style-type: none"> <li>Solve problems that arise in mathematics and in other contexts.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 2:</b> 31–35, 37–40, 42–45, 57–61, 63–70, 72–74, 76–80, 82–86, 88–90, 95–100, 108–111</p> <p><b>Unit 5:</b> 133–137, 141–143, 157</p>
<ul style="list-style-type: none"> <li>Apply and adapt a variety of appropriate strategies to solve problems.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 3:</b> 32–33, 61–64, 78–83</p> <p><b>Unit 5:</b> 46–50, 61–65, 118–121, 123–124, 133–137, 152–153, 157</p>
<ul style="list-style-type: none"> <li>Monitor and reflect on the process of mathematical problem solving.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 1:</b> 48, 51–52</p> <p><b>Unit 3:</b> 30–31, 61–62</p> <p><b>Unit 5:</b> 76–77, 110–111, 145–146, 152–153, 160–161</p>
<b>Reasoning and Proof</b>	
<ul style="list-style-type: none"> <li>Recognize reasoning and proof as fundamental aspects of mathematics.</li> </ul>	<p><b>Unit 3:</b> 12, 125, 140, 168–170</p> <p><b>Unit 5:</b> 18–19, 77–78, 174–176</p> <p><b>Unit 7:</b> 41, 113–114</p> <p><b>Unit 8:</b> 19</p>
<ul style="list-style-type: none"> <li>Make and investigate mathematical conjectures.</li> </ul>	<p><b>Unit 1:</b> 91</p> <p><b>Unit 3:</b> 168</p>
<ul style="list-style-type: none"> <li>Develop and evaluate mathematical arguments and proofs.</li> </ul>	<p><b>Unit 2:</b> 82–83</p>
<ul style="list-style-type: none"> <li>Select and use various types of reasoning and methods of proof.</li> </ul>	<p><b>Unit 3:</b> 12, 125, 140, 168–170</p> <p><b>Unit 5:</b> 18–19, 77–78, 174–176</p> <p><b>Unit 7:</b> 41, 113–114</p> <p><b>Unit 8:</b> 19</p>
<b>Communication</b>	
<ul style="list-style-type: none"> <li>Organize and consolidate their mathematical thinking through communication.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 1:</b> 40–41, 62–63, 77–78, 97–98, 102–103</p> <p><b>Unit 2:</b> 28–29, 33–34, 43–45, 74, 76–77</p> <p><b>Unit 4:</b> 32, 34–35, 44–45, 56–57, 92–93</p>

Indiana Mathematics Standards	Investigations in Number, Data, and Space
<ul style="list-style-type: none"> <li>• Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 1:</b> 34–35, 46, 62–63, 89–90, 92–93</p> <p><b>Unit 2:</b> 28–29, 31–32, 33–34, 48–49, 57–58</p> <p><b>Unit 4:</b> 27, 34–35, 55, 70, 100–101</p>
<ul style="list-style-type: none"> <li>• Analyze and evaluate the mathematical thinking and strategies of others.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 1:</b> 27, 51–52, 106</p> <p><b>Unit 2:</b> 69, 99</p> <p><b>Unit 4:</b> 55, 68, 100–101, 114, 137</p>
<ul style="list-style-type: none"> <li>• Use the language of mathematics to express mathematical ideas precisely.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 1:</b> 40–41, 69–71, 108–110</p> <p><b>Unit 2:</b> 33–34, 48–49, 68–69, 76–77</p> <p><b>Unit 4:</b> 23, 64–65, 67, 75, 77–79, 81–82</p>
<b>Connections</b>	
<ul style="list-style-type: none"> <li>• Recognize and use connections among mathematical ideas.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 4:</b> 89–93, 114–115, 117–120, 128–134</p> <p><b>Unit 5:</b> 16–17, 84–85, 92, 156–158</p> <p><b>Unit 6:</b> 25–31, 38–40, 48–51, 117</p>
<ul style="list-style-type: none"> <li>• Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 7:</b> 28–32, 41–43, 77–80, 86–90, 92–93</p> <p><b>Unit 8:</b> 40–43, 79–81, 107–109, 124</p> <p><b>Unit 9:</b> 27–33, 55–60, 72–74, 120–123</p>
<ul style="list-style-type: none"> <li>• Recognize and apply mathematics in contexts outside of mathematics.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 2:</b> 31–35, 37–40, 42–45, 57–61, 63–70, 72–74, 76–80, 82–86, 88–90, 95–100, 108–111</p> <p><b>Unit 5:</b> 133–137, 141–143, 157</p>
<b>Representation</b>	
<ul style="list-style-type: none"> <li>• Create and use representations to organize, record, and communicate mathematical ideas.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 2:</b> 33–34, 42–45, 63–65, 68–70</p> <p><b>Unit 6:</b> 33–34, 34–36, 42–45, 53–54</p> <p><b>Unit 9:</b> 33, 36–38, 39, 48–50, 79–83</p>

Indiana Mathematics Standards	Investigations in Number, Data, and Space
<ul style="list-style-type: none"> <li>• Select, apply, and translate among mathematical representations to solve problems.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 2:</b> 25–27, 77–79  <b>Unit 6:</b> 25–31, 33–36, 38–40, 79–80  <b>Unit 9:</b> 47–53, 69–75, 77–79, 92–95</p>
<ul style="list-style-type: none"> <li>• Use representations to model and interpret physical, social, and mathematical phenomena.</li> </ul>	<p>These are some of the many examples.</p> <p><b>Unit 2:</b> 33–34, 38–40, 82–86, 88–90  <b>Unit 4:</b> 28–29, 35–37, 51–53, 57–58  <b>Unit 6:</b> 85–86, 90–91, 96–97, 121–122</p>
<p><b>Estimation and Mental Computation</b></p>	
<ul style="list-style-type: none"> <li>• Know and apply appropriate methods for estimating the results of computations.</li> </ul>	<p><b>Unit 5:</b> 11  <b>Unit 6:</b> 125–126  <b>Unit 8:</b> 27–30, 33–34, 131  <b>Unit 9:</b> 20, 46, 54, 68, 76, 84, 97, 119, 124</p>
<ul style="list-style-type: none"> <li>• Round numbers to a specified place value.</li> </ul>	<p><b>Online Activity:</b> Unit 5 Activity 33  <b>Online Activity:</b> Unit 6 Activity 42</p> <p>This standard can be introduced on these pages.</p> <p><b>Unit 8:</b> 27–30, 33–34, 131  <b>Unit 9:</b> 20, 46, 54, 68, 76, 84, 97, 119, 124</p>
<ul style="list-style-type: none"> <li>• Use estimation to decide whether answers are reasonable.</li> </ul>	<p><b>Unit 6:</b> 124  <b>Unit 8:</b> 27–30, 33–34, 131  <b>Unit 9:</b> 20, 46, 54, 68, 76, 84, 97, 119, 124</p>
<ul style="list-style-type: none"> <li>• Decide when estimation is an appropriate strategy for solving a problem.</li> </ul>	<p><b>Unit 4:</b> 32  <b>Unit 8:</b> 27</p>
<ul style="list-style-type: none"> <li>• Determine appropriate accuracy and precision of measurement in problem situations.</li> </ul>	<p><b>Unit 4:</b> 10, 23–27, 29–32, 44–45</p>
<ul style="list-style-type: none"> <li>• Use properties of numbers and operations to perform mental computation.</li> </ul>	<p><b>Unit 3:</b> 16, 29, 30–33, 43–44, 52–53, 173  <b>Unit 5:</b> 17, 157–158, 160–161  <b>Unit 8:</b> 16–18, 65, 69–70, 113</p>

Indiana Mathematics Standards	Investigations in Number, Data, and Space
<ul style="list-style-type: none"> <li>Recognize when the numbers involved in a computation allow for a mental computation strategy.</li> </ul>	<p><b>Unit 5:</b> 37, 45, 60, 79, 86, 117, 122, 144, 150, 155</p> <p><b>Unit 6:</b> 24, 32, 37, 41, 47, 52, 58, 104, 111, 116, 120, 127, 132</p>
<b>Technology</b>	
<ul style="list-style-type: none"> <li>Technology should be used as a tool in mathematics education to support and extend the mathematics curriculum.</li> </ul>	<p><b>Implementing Investigations in Grade 4: 35–38</b></p> <p>Unit 2: 13</p> <p>Unit 4: 13, 72, 73, 77, 83, 98-99, 105-106, 123-124, 126, 152</p> <p>Unit 5: 13</p> <p>Unit 6: 13</p> <p>Unit 7: 13</p> <p>Unit 8: 12</p> <p>Unit 9: 12-13</p>
<ul style="list-style-type: none"> <li>Technology can contribute to concept development, simulation, representation, communication, and problem solving.</li> </ul>	<p><b>Implementing Investigations in Grade 4: 35–38</b></p> <p>Unit 2: 13</p> <p>Unit 4: 13, 72, 73, 77, 83, 98-99, 105-106, 123-124, 126, 152</p> <p>Unit 5: 13</p> <p>Unit 6: 13</p> <p>Unit 7: 13</p> <p>Unit 8: 12</p> <p>Unit 9: 12-13</p>
<ul style="list-style-type: none"> <li>The challenge is to ensure that technology supports-but is not a substitute for- the development of skills with basic operations, quantitative reasoning, and problem solving skills.</li> </ul>	<p><b>Implementing Investigations in Grade 4: 35–38</b></p> <p>Unit 2: 13</p> <p>Unit 4: 13, 72, 73, 77, 83, 98-99, 105-106, 123-124, 126, 152</p> <p>Unit 5: 13</p> <p>Unit 6: 13</p> <p>Unit 7: 13</p> <p>Unit 8: 12</p> <p>Unit 9: 12-13</p>
<ul style="list-style-type: none"> <li>Elementary students should learn how to perform thoroughly the basic arithmetic operations independent of the use of a calculator.</li> </ul>	<p><b>Implementing Investigations in Grade 4: 35</b></p>

Indiana Mathematics Standards	Investigations in Number, Data, and Space
<p>o The focus must be on learning mathematics, using technology as a tool rather than as an end in itself.</p>	<p><b>Implementing Investigations in Grade 4: 35–38</b>            Unit 2: 13            Unit 4: 13, 72, 73, 77, 83, 98-99, 105-106, 123-124, 126, 152            Unit 5: 13            Unit 6: 13            Unit 7: 13            Unit 8: 12            Unit 9: 12-13</p>