NAEP
National Assessment of Educational Progress

Follow NAEP on Twitter:  @NAEP_NCES
Today’s Outcomes:

• Why is NAEP important?
• Is there a correlation we can use?
• Where can I find resources?
What is NAEP?

• The National Assessment of Educational Progress (NAEP) — known as The Nation’s Report Card — is the largest, nationally representative, continuing assessment of what America’s students know and can do in various subjects.

• It is deeply woven into the fabric of our nation’s educational DNA.

• It is an honor to participate in NAEP.
Why is NAEP important?

- NAEP serves different purposes from other testing. In fact, the NAEP assessment is unique.
- When students across our state take NAEP, every child’s name is Alabama.
- NAEP has been and will continue to be the only consistent, highly respected, national measure of student achievement.
“You are leading the nation... and your story is the future of education in our country. You have given us a North Star, and we’re very appreciative of that; you are blazing the trails for the rest of us to follow.” - Terry Mazany, former CEO of the Chicago Community Trust
I’d like to see Pike County as a model not just in Alabama, but in the nation.”

-Cary Sneider, Pioneer of STEM and author of the NGSS
“I’ve heard all the talk (about public education and career readiness) but I’ve never seen it in action until today.” “I’m blown away ... and I’m going to tell your story to everyone.”

-The Honorable Beverly Perdue, former Governor of North Carolina
Resources

• Videos
• NAEP Data Explorer
• NAEP Questions Tool
• Hands-On Tasks  https://www.youtube.com/watch?v=6RNpps7zdlE
• Going Digital with NAEP
• Scenario-Based Tasks
• Extended Constructed Responses

• Make sure to get your full list of NAEP resources from Chasidy White, Alabama NAEP Coordinator
Instructional Shifts...

Some of the events in this video should not be attempted in your classroom.
What students should be able to do with content on the NAEP

- The following broadly organized science principles illustrate how well students can use science knowledge through reasoning:
  - Identifying Science Principles
  - Using Science Principles
  - Using Scientific Inquiry
  - Using Technological Design
Identifying Science Principles

• Tests students’ ability to recognize, recall, define, relate, and represent basic science principles specified in the Physical Science, Life Science, and Earth and Space Sciences content statements.
Identifying Science Principles

• **Describe, measure, or classify observations** (e.g., describe the position and motion of objects; measure temperature; classify relationships between organisms as being predator/prey, parasite/host, producer/consumer).

• **State or recognize correct science principles** (e.g., mass is conserved when substances undergo changes of state; all organisms are composed of cells; the atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor).

• **Demonstrate relationships among closely related science principles** (e.g., connect statements of Newton’s three laws of motion, relate energy transfer with the water cycle).

• **Demonstrate relationships among different representations of principles** (e.g., verbal, symbolic, diagrammatic) and **data patterns** (e.g., tables, equations, graphs).
The Earth’s Moon is
A. always much closer to the Sun than it is to the Earth.
B. always much closer to the Earth than it is to the Sun.
C. about the same distance from the Sun as it is from the Earth.
D. sometimes closer to the Sun than it is to the Earth and sometimes closer to the Earth than it is to the Sun.

Key: B
Using Science Principles

• Both scientists and informed citizens can use patterns in observations and theoretical models to predict and explain observations that they make now or that they will make in the future.

• The practices assessed in this category draw primarily on schematic knowledge (or “knowing why”) in addition to declarative knowledge.
Using Science Principles

• **Explain observations of phenomena** (using science principles from the content statements).

• **Predict observations of phenomena** (using science principles from the content statements, including quantitative predictions based on science principles that specify quantitative relationships among variables).

• **Suggest examples of observations that illustrate a science principle** (e.g., identify examples where the net force on an object is zero; provide examples of observations explained by the movement of tectonic plates; given partial DNA sequences of organisms, identify likely sequences of close relatives).

• **Propose, analyze, and/or evaluate alternative explanations or predictions.**
The pictures show a light bulb connected to a battery. Which bulb will light?

Key: C
Sometimes these two are combined...

Illustrative Item

The graph below shows the distance traveled over time by a student walking down a hall. Use the information shown on the graph to do Numbers 7 and 8.

Distance Traveled Over Time

<table>
<thead>
<tr>
<th>Distance (m)</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (seconds)</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
</tr>
</tbody>
</table>

7. During which time interval was the student moving the fastest?
- A
- B
- C
- D

8. What was the average speed of the student from 0 seconds to 5 seconds?

Average speed: __________________________

(See appendix C for item scoring guides.)

Key: D
Using Scientific Inquiry

• Scientific inquiry involves the collection of relevant data, the use of logical reasoning, and the application of imagination and evidence in devising hypotheses to explain patterns in data.

• These critical thinking and systems thinking skills are the basis for exercising sound reasoning, making complex choices, and understanding the interconnections among systems.

• Scientific inquiry is more complex than simply making, summarizing, and explaining observations, and it is more flexible than the rigid set of steps often referred to as the “scientific method.”
Using Scientific Inquiry

• Design or critique aspects of scientific investigations (e.g., involvement of control groups, adequacy of sample).

• **Conduct scientific investigations using appropriate tools and techniques** (e.g., selecting an instrument that measures the desired quantity—length, volume, weight, time interval, temperature—with the appropriate level of precision).

• Identify patterns in data and/or relate patterns in data to theoretical models.

• Use **empirical evidence to validate or criticize conclusions about explanations and predictions** (e.g., check to see that the premises of the argument are explicit, notice when the conclusions do not follow logically from the evidence presented).
Illustrative Item

This interactive computer task is one module in an extended assessment of students’ abilities to use a range of technologies to investigate a complex problem, “Should lynx be reintroduced into a national park?” Students accessed, organized, and analyzed data on the number of hares in the park over a 25-year period, researched factors that would impact the population, and created a graph to analyze the trend. (See appendix C for a description of the full task.)

This module allows students to interact with a simulated predator/prey (lynx/hare) population model. Students use the modeling tool to observe population trends that result from different parameter values for the lynx and hare populations. The screen shot below is an example of what students see after they have selected parameters and run the simulation. Note that it is a single screen shot and represents only a small subset of the many screens that students actually see when engaged in this interactive computer task. After students have run the modeling software, they are asked a series of questions (e.g., size of the hare population over time).
Using Technological Design

• Technological design refers to the process that underlies the development of all technologies, from paper clips to space stations.

• Using technological design describes the systematic process of applying science knowledge and skills to solve problems in a real-world context.
Using Technological Design

• Propose or critique solutions to problems, given criteria and scientific constraints.

• Identify scientific tradeoffs in design decisions and choose among alternative solutions.

• Apply science principles or data to anticipate effects of technological design decisions.
Occasionally, a fire will destroy a forest, burning down trees and pushing wildlife out of their forest homes. However, the forest will grow back. Eventually, through the process of forest succession as shown below, short grasses and flowers begin to grow and animals make new homes.

Over time, shrubs and trees begin to grow. The forest returns to a lush habitat for the wildlife listed in the chart below.
A power company owns part of a forest that was destroyed by a fire. The forest could take decades to rebuild on its own. The company’s department of environmental studies suggests planting new trees to help the forest rebuild.

Using the information in the scenario:

- Explain how planting trees could **benefit** the natural ecosystem.
- Explain how planting trees could **harm** the natural ecosystem.

(See appendix C for item scoring guides.)
### PHYSICAL SCIENCES

**Motion and Stability: Forces and Interactions**

<table>
<thead>
<tr>
<th>K-2</th>
<th>3-5</th>
<th>6-8</th>
<th>9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.1. Investigate the resulting motion of objects when forces of different strengths and directions act upon them.</td>
<td>3.1. Plan and carry out an experiment to determine the effects of balanced and unbalanced forces on the motion of an object using one variable at a time, including number, size, direction, speed, position, friction, or air resistance, and communicate these findings graphically.</td>
<td>6.8. Use Newton's second law to demonstrate and explain how changes in an object's motion depend on the sum of the external forces on the object and the mass of the object.</td>
<td>Physical Science.8. Apply Newton's laws to predict the resulting motion of a system by constructing force diagrams that identify the external forces acting on the system, including friction.</td>
</tr>
</tbody>
</table>

**LIFE SCIENCES**

**Ecosystems: Interactions, Energy, and Dynamics**

<table>
<thead>
<tr>
<th>K-2</th>
<th>3-5</th>
<th>6-8</th>
<th>9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>K.3. Distinguish between living and nonliving things and verify what living things need to survive.</td>
<td>3.11. Create a model to illustrate the transfer of matter among producers, consumers, including scavengers and decomposers, and the environment.</td>
<td>7.5. Examine the cycling of matter between abiotic and biotic parts of ecosystems to explain the flow of energy and the conservation of matter.</td>
<td>Biology.8. Develop and use models to describe the cycling of matter and flow of energy between abiotic and biotic factors in ecosystems.</td>
</tr>
</tbody>
</table>

### EARTH AND SPACE SCIENCES

**Earth's Systems**

<table>
<thead>
<tr>
<th>K-2</th>
<th>3-5</th>
<th>6-8</th>
<th>9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8. Make observations from media to obtain information about Earth events that happen over a short period of time or over a time period longer than one can observe.</td>
<td>4.12. Construct explanations by citing evidence found in patterns of rock formations and fossils in rock layers that Earth changes over time through both slow and rapid processes.</td>
<td>6.5. Use evidence to explain how different geologic processes shape Earth's history over widely varying scales of space and time.</td>
<td>Earth and Space Science.9. Obtain, evaluate, and communicate information to explain how constructive and destructive processes shape Earth's land features and sea features.</td>
</tr>
</tbody>
</table>
# 2015 Alabama Course of Study: Science and NAEP Standards Correlation

<table>
<thead>
<tr>
<th>COS#</th>
<th>Grade K Alabama Course of Study Standard</th>
<th>Grade 4 NAEP Content Statements</th>
</tr>
</thead>
</table>
| K.1  | Investigate the resulting motion of objects when forces of different strengths and directions act upon them (e.g., object being pushed, object being pulled, two objects colliding). | P4.13-An object is in motion when its position is changing. The speed of an object is defined by how far it travels divided by the amount of time it took to travel that far.  
P4.14-The motion of objects can be changed by pushing or pulling. The size of the change is related to the size of the force (push or pull) and the weight (mass) of the object on which the force is exerted. When an object does not move in response to a push or a pull, it is because another push or pull (friction) is being applied by the environment. |

<table>
<thead>
<tr>
<th>COS#</th>
<th>Grade 3 Alabama Course of Study Standard</th>
<th>Grade 4 NAEP Content Statements</th>
<th>Grade 8 NAEP Content Statements</th>
</tr>
</thead>
</table>
| 3.1  | Plan and carry out an experiment to determine the effects of balanced and unbalanced forces on the motion of an object using one variable at a time, including number, size, direction, speed, position, friction, or air resistance (e.g., balanced forces pushing from both sides on an object, such as a box, producing no motion; unbalanced force on one side of an object, such as a ball, producing motion), and communicate these findings graphically. | P4.13-An object is in motion when its position is changing. The speed of an object is defined by how far it travels divided by the amount of time it took to travel that far.  
P4.14-The motion of objects can be changed by pushing or pulling. The size of the change is related to the size of the force (push or pull) and the weight (mass) of the object on which the force is exerted. When an object does not move in response to a push or a pull, it is because another push or pull (friction) is being applied by the environment. | P8.14-An object’s motion can be described by its speed and the direction in which it is moving. An object’s position can be measured and graphed as a function of time. An object’s speed can be measured and graphed as a function of time.  
P8.16-Forces have magnitude and direction. Forces can be added. The net force on an object is the sum of all the forces acting on the object. A nonzero net force on an object changes the object’s motion; that is, the object’s speed and/or direction of motion changes. A net force of zero on an object does not change the object’s motion; that is, the object remains at rest or continues to move at a constant speed in a straight line. |
## 2015 Alabama Course of Study: Science and NAEP Standards Correlation

<table>
<thead>
<tr>
<th>COS#</th>
<th>Grade 8 Alabama Course of Study Standard</th>
<th>Grade 8 NAEP Content Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.8</td>
<td>Use Newton's first law to demonstrate and explain that an object is either at rest or moves at a constant velocity unless acted upon by an external force (e.g., model car on a table remaining at rest until pushed).</td>
<td>P8.14a-An object’s motion can be described by its speed and the direction in which it is moving.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P8.16a-Forces have magnitude and direction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P8.16b-Forces can be added.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P8.16c-The net force on an object is the sum of all the forces acting on the object.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P8.16d-A nonzero net force on an object changes the object’s motion; that is; the object’s speed and/or direction of motion changes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P8.16e-A net force of zero on an object does not change the object’s motion; that is, the object remains at rest or continues to move at a constant speed in a straight line.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COS#</th>
<th>Physics: Alabama Course of Study Standard</th>
<th>Grade 12 NAEP Content Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phy.2</td>
<td>Identify external forces in a system and apply Newton’s laws graphically by using models such as free-body diagrams to explain how the motion of an object is affected, ranging from simple to complex, and including circular motion.</td>
<td>P12.19-The motion of an object changes only when a net force is applied.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P12.20-The magnitude of acceleration of an object depends directly on the strength of the net force and inversely on the mass of the object. This relationship ( a = \frac{F_{net}}{m} ) is independent of the nature of the force.</td>
</tr>
</tbody>
</table>
Items to Consider

• **Scheduling** – **ALL** students in **K-12** should receive science instruction on a daily basis.

• **Rigor** – Classroom instruction should follow the rigorous 3-Dimensional requirements outlined by the 2015 *Alabama Course of Study: Science*.

A minimum of **19%** of Alabama’s **4th Grade** student population needs to move to a higher level of achievement in order to match the overall national 4th Grade performance on NAEP mathematics testing.

A minimum of **31%** of Alabama’s **8th Grade** student population needs to move to a higher level of achievement in order to match the overall national 8th Grade performance on NAEP mathematics testing.
### 2017 Mathematics State Snapshot: School Location

In Alabama, students testing for **Grade 4 NAEP Mathematics** were comprised of the following school locations:

<table>
<thead>
<tr>
<th>Location</th>
<th>Below Basic</th>
<th>At Basic</th>
<th>At Proficient</th>
<th>At Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>24%</td>
<td>30</td>
<td>39</td>
<td>26</td>
</tr>
<tr>
<td>Suburban</td>
<td>25%</td>
<td>25</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Town</td>
<td>15%</td>
<td>27</td>
<td>47</td>
<td>24</td>
</tr>
<tr>
<td>Rural</td>
<td>36%</td>
<td>25</td>
<td>44</td>
<td>28</td>
</tr>
</tbody>
</table>

In Alabama, students testing for **Grade 8 NAEP Mathematics** were comprised of the following school locations:

<table>
<thead>
<tr>
<th>Location</th>
<th>Below Basic</th>
<th>At Basic</th>
<th>At Proficient</th>
<th>At Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>22%</td>
<td>46</td>
<td>33</td>
<td>16</td>
</tr>
<tr>
<td>Suburban</td>
<td>23%</td>
<td>34</td>
<td>35</td>
<td>22</td>
</tr>
<tr>
<td>Town</td>
<td>13%</td>
<td>45</td>
<td>35</td>
<td>17</td>
</tr>
<tr>
<td>Rural</td>
<td>42%</td>
<td>51</td>
<td>33</td>
<td>13</td>
</tr>
</tbody>
</table>

Do you see your community or school or students represented in this chart?
2017 NAEP Item Map Grade 4

243 Estimate the weight of an object (calculator available) (MC)
242 Subtract decimal numbers to the tenth—Correct (CR)
233 Compare two sets of related data given in a table (calculator available)—Partial (CR)
222 Measure a rectangle to determine the area—Minimal (CR)
229 Compose 4-digit number using place value (MC)
224 Interpret and complete a pictograph given a table—Partial (SR)

214 Basic

207 Find value of an unknown in a number sentence (MC)
207 Identify the place value of a digit in a whole number (MC)
189 Identify appropriate measurements from a context—Correct (SR)

249 Proficient

233 Identify pairs of congruent figures—Correct (SR)
207 Identify the number represented by a set of base ten blocks (calculator available) (MC)
301 Identify multiple correct solution methods to an addition problem—Correct (SR)
286 Determine and apply a rule based on an input-output table (calculator available)—Satisfactory (CR)
282 Represent fractions using a model (calculator available)—Correct (SR)

Advanced

281 Identify points in a coordinate grid that will form a right triangle—Correct (SR)
280 Compare two sets of related data given in a table (calculator available)—Correct (CR)
278 Measure a rectangle to determine the area—Satisfactory (CR)
276 Identify pairs of congruent figures—Partial (SR)
273 Measure a rectangle to determine the area—Partial (CR)
272 Compare heights of objects in a figure (MC)
267 Represent fractions using a model (calculator available)—Partial (SR)
263 Recognize a proportional relationship (calculator available) (MC)
262 Determine and apply a rule based on an input-output table (calculator available)—Partial (CR)
262 Identify multiple correct solution methods to an addition problem—Partial (SR)
252 Determine and apply a rule based on an input-output table (calculator available)—Minimal (CR)
251 Interpret and complete a pictograph given a table—Correct (SR)
250 Identify the faces of a given solid (calculator available) (MC)

Number Properties and Operations
Measurement
Geometry
Data Analysis, Statistics, and Probability
Algebra
Scoring Note:

- Students need to do complex items which require them to do multiple steps and answer many questions
- 24% of the students gave an incorrect response or omitted this question
- Another 25% could only give a partial answer to this problem
## Correlation Document of Alabama COS Mathematics Standards to NAEP Objectives

When teaching Alabama Course of Study content, NAEP objectives and items are useful for identifying a level of rigor which matches proficient student performance nationwide. The NAEP objectives identify content that could be included in lessons building toward mastery of the correlating standards from the 2016 Alabama Course of Study: Mathematics.

### Grade 4 Objectives

<table>
<thead>
<tr>
<th>Grade 4 Alabama Course of Study Standard</th>
<th>NAEP Objective(s) Grade 4</th>
<th>NAEP Objective(s) Grade 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. [4.OA.1] Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.</td>
<td>4NPO3f Solve application problems involving numbers and operations.</td>
<td>8NPO3a Perform computations with rational numbers. 8NPO3b Recognize, find, or use factors, multiples, or prime factorization.</td>
</tr>
<tr>
<td>2. [4.OA.2] Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. (See Appendix A, Table 2.)</td>
<td></td>
<td>8NPO3a Perform computations with rational numbers.</td>
</tr>
<tr>
<td>3. [4.OA.3] Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td>
<td>4NPO2c Verify solutions or determine the reasonableness of results in meaningful contexts. 4NPO3f Solve application problems involving numbers and operations.</td>
<td>8NPO2c Verify solutions or determine the reasonableness of results in a variety of situations, including calculator and computer results. 8NPO3a Perform computations with rational numbers. 8NPO3d Use divisibility or remainders in problem settings.</td>
</tr>
</tbody>
</table>

### Grade 8 Objectives

Use NAEP objectives and NAEP items to:
- Compare the level of rigor for your student grade-level performance to nationwide performance.
- Identify content to include in lessons as you aim at mastery of content.
Grade 4 and Grade 8 Resources Ready to Immediately Implement

**Resource Documents**

**Number and Operations in Base Ten Resources and Answer Keys**
- Number and Operations in Base Ten Practice Items - Set 1
- Number and Operations in Base Ten Practice Items - Set 2
- Number and Operations in Base Ten Practice Items - Set 3
- Number and Operations in Base Ten Tasks

**Operations and Algebraic Thinking Resources and Answer Keys**
- Operations and Algebraic Thinking Practice Items - Set 1
- Operations and Algebraic Thinking Tasks

**Number and Operations - Fractions Resources and Answer Keys**
- Number and Operations - Fractions Practice Items - Set 1
- Number and Operations - Fractions Tasks

**Measurement and Data Resources and Answer Keys**
- Measurement and Data Practice Items - Set 1
- Measurement and Data Practice Items - Set 2
- Measurement and Data Practice Items - Set 3
- Measurement and Data Tasks

**Geometry Resources and Answer Keys**
- Geometry Practice Items - Set 1
- Geometry Practice Items - Set 2
- Geometry Tasks

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**4th Grade Mock Test A**
**4th Grade Mock Test B**
**4th Grade Mock Test A Answer Key**
**4th Grade Mock Test B Answer Key**
### Matching NAEP Math Objectives to the Alabama COS, Mathematics

#### Match of Grade 4 NAEP Objectives to Alabama COS, Math:

<table>
<thead>
<tr>
<th>Grade</th>
<th>COS</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>3</td>
</tr>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>18</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>18</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td><strong>17</strong></td>
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<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
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<tr>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
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<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
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</tr>
<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>5</td>
</tr>
<tr>
<td>HG</td>
<td>5</td>
</tr>
</tbody>
</table>

**4<sup>th</sup> Grade COS standards not on NAEP:** 11

**NAEP Objectives not in AL COS, Math:** 5

From *A Study of the Alignment Between NAEP Mathematics Framework and the Common Core State Standards for Mathematics (CCSS-M)*, Appendix B

#### Match of Grade 8 NAEP Objectives to Alabama COS, Math:

<table>
<thead>
<tr>
<th>Grade</th>
<th>COS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>12</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
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<tr>
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<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
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<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td><strong>23</strong></td>
</tr>
<tr>
<td>HG</td>
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</table>

**8<sup>th</sup> Grade COS standards not on NAEP:** 5

**NAEP Objectives not in AL COS, Math:** 8

From *A Study of the Alignment Between NAEP Mathematics Framework and the Common Core State Standards for Mathematics (CCSS-M)*, Appendix C

We need to create a PIPELINE for performance on the 2021 NAEP Testing – Grades 2 and 3, and 6 and 7.
Focus Maps with COS Standards Correlated to NAEP Marked with a Star

<table>
<thead>
<tr>
<th>FOCUS</th>
<th>1st 0 WEEKS</th>
<th>2nd 0 WEEKS</th>
<th>3rd 0 WEEKS</th>
<th>4th 0 WEEKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.NS</td>
<td>Irrational #, Integer Exponents, &amp; Scientific Notation</td>
<td>Know that there are numbers that are not rational and approximate them by rational numbers.</td>
<td>Know that there are numbers that are not rational and approximate them by rational numbers.</td>
<td>Know that there are numbers that are not rational and approximate them by rational numbers.</td>
</tr>
<tr>
<td>8.EE</td>
<td>Integer exponents and Scientific notation</td>
<td>Work with radicals and integer exponents:</td>
<td>Work with radicals and integer exponents:</td>
<td>Work with radicals and integer exponents:</td>
</tr>
<tr>
<td>Proportional relationships, slope, and linear equations</td>
<td>Note: The focus maps are not required nor are they intended to serve as pacing guides, but rather to support discussion and collaboration amongst educators. The goal in discussing these maps is to build collective efficacy and ownership in the instructional process as resources are developed that support and align instruction.</td>
<td>Understand the connections among proportional relationships, lines, and linear equations.</td>
<td>Understand the connections among proportional relationships, lines, and linear equations.</td>
<td>Understand the connections among proportional relationships, lines, and linear equations.</td>
</tr>
<tr>
<td>Linear equations one and two variable and linear systems</td>
<td>Analyze and solve linear equations and pairs of simultaneous linear equations.</td>
<td>Define, evaluate, and compare functions.</td>
<td>Define, evaluate, and compare functions.</td>
<td>Use functions to model relationships between quantities</td>
</tr>
<tr>
<td>Linear functions to model relationships</td>
<td>Use functions to model relationships between quantities.</td>
<td>Investigate patterns of association in bivariate data</td>
<td>Investigate patterns of association in bivariate data</td>
<td></td>
</tr>
</tbody>
</table>

MAJOR CLUSTERS | SUPPORTING CLUSTERS | ADDITIONAL CLUSTERS
Let’s Make All Students Rising Stars

Math: Profile of Students Scoring At or Below Basic

Legend:
Race and Ethnicity
H – Hispanic
B – Black
W – White

Free/Reduced Lunch
NE – Not Eligible
E – Eligible

School Location
R – Rural
T – Town
S – Suburban
C - City

Specific Demographics for Grade 4 NAEP Performance 2017
English Language Arts (ELA) Standards and National Assessment of Educational Progress (NAEP)

September 2018
National Assessment of Educational Progress

THE FACTS ABOUT ALABAMA’S ENGLISH LANGUAGE ARTS COURSE OF STUDY AND NAEP.
Fact 1: Text Types

- ELA COS Reading Anchor Standards require **Literary** and **Informational** texts (Anchor Standards 1-10).

- Text on the NAEP assessment will include **Literary** and **Informational** passages from both print and digital sources and may contain non-continuous text material such as charts.
Distribution of Literary and Informational Passages.

Both the ELA COS and NAEP require time spent on literary and informational text study.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Literary</th>
<th>Informational</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>8th</td>
<td>45</td>
<td>55</td>
</tr>
<tr>
<td>12th</td>
<td>30</td>
<td>70</td>
</tr>
</tbody>
</table>
Fact 2: Vocabulary

ELA Course of Study Reading

**Anchor Standard 4:** Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning and tone.

Vocabulary is an important part of NAEP testing. Vocabulary is assessed through ability to derive meanings of words within a passage.
Fact 3: Comprehending Text

ELA COS Reading Anchor

**Standard 1** - Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

**Standard 2** - Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

**Standard 5** - Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text relate to each other and the whole.

**Cognitive Targets**

The NAEP assesses three sets of Cognitive Targets: locate/recall, integrate/interpret, and critique/evaluate.
### Percentage Distribution of Cognitive Targets by Grade

<table>
<thead>
<tr>
<th>Grade</th>
<th>Locate/Recall</th>
<th>Integrate/Interpret</th>
<th>Critique/Evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th</td>
<td>30</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>8th</td>
<td>20</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>12th</td>
<td>20</td>
<td>45</td>
<td>35</td>
</tr>
</tbody>
</table>

### Reading Achievement Levels

<table>
<thead>
<tr>
<th>Level</th>
<th>BASIC</th>
<th>PROFICIENT</th>
<th>ADVANCED</th>
</tr>
</thead>
</table>

Fact 4: Use of Multiple Texts

ELA COS Reading Anchor

**Standard 7** - Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.

**Standard 8** - Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.

**Standard 9** - Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

**NAEP** calls for the “extended use of multiple texts”.
Fact 5: Text Complexity and Length of Passages

ELA Anchor Reading Standard 10: Read and comprehend complex literary and informational texts independently and proficiently.

NAEP requires the reading of both long and short complex text.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number of words</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th</td>
<td>200-800</td>
</tr>
<tr>
<td>8th</td>
<td>400-1,000</td>
</tr>
<tr>
<td>12th</td>
<td>500-1,500</td>
</tr>
</tbody>
</table>
Fact 6: Writing About Text

ELA COS Writing Anchor

**Standard 1** - Write arguments to support claims in an analysis of substantive topics or texts.

**Standard 9** - Draw evidence from literary or informational texts to support analysis, reflection, and research.

NAEP includes both selected-response items and short and extended constructed-response items.
Successful Teaching to the Rigor of the ELA COS Standards = Successful Learning = Success on High Stakes Tests.

How do you know that successful teaching and learning are happening?
Things to look for

Students

• Monitoring comprehension
• Activating and connecting to background knowledge
• Asking questions
• Inferring
• Determining importance
• Summarizing and synthesizing
READING FURNISHES THE MIND ONLY WITH MATERIALS OF KNOWLEDGE; IT IS THINKING THAT MAKES WHAT WE READ OURS.

John Locke
Road Show for Teachers

- September 10: Montgomery-Alabama State University—Abernathy Hall
- September 11: Troy-Enterprise-1648 East Park Avenue, Enterprise, AL
- September 12: Tuscaloosa-Tom Barnes Education Center •
- September 13: Birmingham-3500 6th Avenue South, Birmingham, AL
- September 19: North Alabama-Wallace-Hanceville
- September 24: Auburn-1577 South College Street, Auburn, AL 36832
- October 9:  JSU Inservice Center, Anniston
- Mobile:  To Be Determined
Questions?

• studentassessment@alsde.edu

• Thank you for your dedication to Alabama’s public schools!