NAEP 2016 and 2017

- **NAEP 2016**
  - Arts (grade 8)
  - Mathematics and Reading (grades 4 and 8)*

- **NAEP 2017 (predominately digitally-based)**
  - Over 900,000 students in 19,000 schools
  - Mathematics and Reading (state-level; grades 4 and 8)
  - Writing (national-only; grades 4 and 8)
  - U.S. History, Civics, and Geography (grade 8)*

* Pilot tests
Grade 8 Assessment Objectives

- Three Assessment Areas
- Three Practices
Overview of the TEL Assessment

- Administered on laptop computers
  - January – March 2014

- National samples
  - 21,500 eighth-graders
  - 840 public and private schools across the nation

- Performance reported as:
  - Average scale scores (0–300 scale)
    - Overall scale
    - Subscales for content areas and practices
  - Achievement levels set on overall scale only
Assessment Design

- In total, 20 scenario-based tasks and 97 discrete tasks
- Each student assessed for 60 minutes
  - Two 30-minute segments
- Survey questions were administered to:
  - Students
  - School administrators
Highlights of The Nation’s Report Card Website

Explore the results online

www.nationsreportcard.gov/tel_2014/

Tour the tasks  Try the TEL tasks yourself  Explore student experiences and achievement  Investigate profiles of students in TEL
Selected Results
Average Scores and Percentages at or above *Proficient*

**Average Scores**
- Overall: 150
- Male: 149
- Female: 151
- White: 160
- Black: 128
- Hispanic: 138
- Asian: 160
- American Indian/Alaska Native: 146
- Native Hawaiian/Other Pacific Islander: 142
- Two or More Races: 154

**Percentages at or above Proficient**
- Overall: 43%
- Male: 42%
- Female: 45%
- White: 56%
- Black: 18%
- Hispanic: 28%
- Asian: 56%
- American Indian/Alaska Native: 42%
- Native Hawaiian/Other Pacific Islander: 30%
- Two or More Races: 45%
Average Scores and Percentages at or above Proficient

<table>
<thead>
<tr>
<th>Type of School Location</th>
<th>Average Score</th>
<th>Percentage at or above Proficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>144</td>
<td>37</td>
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<tr>
<td>Suburb</td>
<td>154</td>
<td>48</td>
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<tr>
<td>Town</td>
<td>149</td>
<td>42</td>
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<tr>
<td>Rural</td>
<td>152</td>
<td>45</td>
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<tr>
<td>Eligible</td>
<td>135</td>
<td>25</td>
</tr>
<tr>
<td>Not eligible</td>
<td>163</td>
<td>59</td>
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<tr>
<td>Public</td>
<td>149</td>
<td>42</td>
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<tr>
<td>Private</td>
<td>164</td>
<td>60</td>
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</table>

<table>
<thead>
<tr>
<th>Students with Disabilities</th>
<th>Average Score</th>
<th>Percentage at or above Proficient</th>
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</thead>
<tbody>
<tr>
<td>SD</td>
<td>116</td>
<td>13</td>
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</table>

<table>
<thead>
<tr>
<th>English Language Learner</th>
<th>Average Score</th>
<th>Percentage at or above Proficient</th>
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</thead>
<tbody>
<tr>
<td>ELL</td>
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</table>
Females outperformed males overall

<table>
<thead>
<tr>
<th>Gender</th>
<th>Content Area</th>
<th>Score</th>
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<tbody>
<tr>
<td>Female</td>
<td>Overall</td>
<td>151</td>
</tr>
<tr>
<td>Male</td>
<td>Overall</td>
<td>149</td>
</tr>
<tr>
<td>Female</td>
<td>Technology and Society</td>
<td>151</td>
</tr>
<tr>
<td>Male</td>
<td>Technology and Society</td>
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<tr>
<td>Female</td>
<td>Design and Systems</td>
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<tr>
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<td>Design and Systems</td>
<td>150</td>
</tr>
<tr>
<td>Female</td>
<td>Information and Communication Technology</td>
<td>153</td>
</tr>
<tr>
<td>Male</td>
<td>Information and Communication Technology</td>
<td>147</td>
</tr>
</tbody>
</table>

Statistically significant: Blue circle
Not statistically significant: Grey diamond

# Rounds to zero.
NOTE: Score differences are calculated based on the difference between unrounded average scores.
Females performed better than males in two of the three practices:

1. Understanding Technological Principles
   - Female: 151
   - Male: 149
   - Statistically significant

2. Developing Solutions and Achieving Goals
   - Female: 151
   - Male: 149

3. Overall
   - Female: 151
   - Male: 149

4. Communicating and Collaborating
   - Female: 153
   - Male: 147

NOTE: Score differences are calculated based on the difference between unrounded average scores.
Sample Scenario-Based Task: Iguana Home
In the *Iguana Home* task, students:

- Learn about iguanas and their basic needs
- Help troubleshoot and fix the habitat for a classroom iguana named "Iggy"
Content Area & Practice

Understanding Technological Principles

Design and Systems

Developing Solutions and Achieving Goals

Information and Communication Technology

Technology and Society

Communicating and Collaborating
STEP 1  Evaluate cage design causing Iggy to be too cold

STEP 2  Evaluate cage design causing Iggy to stay awake and active at night

STEP 3  Test a new design and evaluate alternative solutions

STEP 4  Redesign the cage to prevent dehydration
STEP 1 Evaluate cage design causing Iggy to be too cold

Let's start by trying to solve problem 1.

Iggy is always hanging on to his heat lamp! He does not want to be anywhere else.

**Based on the iguana facts, what is the most likely reason Iggy is hanging on to his heat lamp?**

- Iggy likes being high up in his cage.
- Iggy's home lacks moisture.
- **Iggy's home is too cold for him.**
- Iggy is not getting enough to eat.

Answer the question and click Submit. Click Iguana Facts to review facts about iguanas.
STEP 2

Evaluate cage design causing Iggy to stay awake and active at night

Based on your observation of Iggy’s behavior, what fact about iguanas is related to Iggy’s second problem (Iggy is awake and active at night)?

- Iguanas need very moist air.
- Iguanas absorb heat from above.
- Iguanas need to move in and out of warmer and cooler areas.
- Iguanas need 12 hours of light and 12 hours of darkness.

Answer the question and click Submit.
STEP 3
Test a new design and evaluate alternative solutions

Based on Iggy's behavior, does option 1 work to solve Iggy's cold home?

- Yes, this will work.
- No, this will not work.

Explain your answer based on what you observed.

It doesn't solve the problem because Iggy is still clinging to the...

Answer the question and click Submit. You may
click Run to observe Iggy's behavior again.
STEP 4    Redesign the cage to prevent dehydration
Multi-part task step

• Analyze a design and identify an unmet requirement
• Predict the possible outcome of a proposed design change
• Explain how modifying the system could solve a problem by meeting design requirements
Focus on Step 2

Identify an unmet requirement, predict the outcome of a change, AND explain how those solve a problem.

Identify an unmet design requirement AND predict outcome of proposed design change.

Analyze Iggy’s behavior to identify an unmet cage design requirement.

- 82% Correct
- 56% Correct
- 6% Correct
Questions?