Commonalities Among the Practices in Science, Mathematics and English Language Arts

Based on work by Tina Chuek ell.stanford.edu

Math

M1: Make sense of problems and persevere in solving them
M2: Reason abstractly & quantitatively
M6: Attend to precision
M7: Look for & make use of structure
M8: Look for & make use of regularity in repeated reasoning

Science

S1: Ask questions and define problems
S2: Develop & use models
S5: Use mathematics & computational thinking
S3: Plan & carry out investigations
S4: Analyze & interpret data
S6: Construct explanations & design solutions
S8: Obtain, evaluate, & communicate information
E3: Obtain, synthesize, and report findings clearly and effectively in response to task and purpose

ELA

E1: Demonstrate independence in reading complex texts, and writing and speaking about them
E2: Build a strong base of knowledge through content rich texts
E3: Obtain, synthesize, and report findings clearly and effectively in response to task and purpose
E4: Construct viable arguments and critique reasoning of others
E5: Read, write, and speak grounded in evidence
E6: Use technology & digital media strategically & capably
M3 & E4: Construct viable arguments and critique reasoning of others
M4: Models with mathematics
M5: Use appropriate tools strategically
E7: Come to understand other perspectives and cultures through reading, listening, and collaborations
S7: Engage in argument from evidence
S8: Obtain, evaluate, & communicate information
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<thead>
<tr>
<th>Math</th>
<th>Science</th>
<th>English Language Arts</th>
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</thead>
<tbody>
<tr>
<td><strong>M1.</strong> Make sense of problems and persevere in solving them.</td>
<td><strong>S1.</strong> Asking questions (for science) and defining problems (for engineering).</td>
<td><strong>E1.</strong> They demonstrate independence.</td>
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<td><strong>M2.</strong> Reason abstractly and quantitatively.</td>
<td><strong>S2.</strong> Developing and using models.</td>
<td><strong>E2.</strong> They build strong content knowledge.</td>
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<td><strong>M3.</strong> Construct viable arguments and critique the reasoning of others.</td>
<td><strong>S3.</strong> Planning and carrying out investigations.</td>
<td><strong>E3.</strong> They respond to the varying demands of audience, task, purpose, and discipline.</td>
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<td><strong>M4.</strong> Model with mathematics.</td>
<td><strong>S4.</strong> Analyzing and interpreting data.</td>
<td><strong>E4.</strong> They comprehend as well as critique.</td>
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<td><strong>M5.</strong> Use appropriate tools strategically.</td>
<td><strong>S5.</strong> Using mathematics, information and computer technology, and computational thinking.</td>
<td><strong>E5.</strong> They value evidence.</td>
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<td><strong>M6.</strong> Attend to precision.</td>
<td><strong>S6.</strong> Constructing explanations (for science) and designing solutions (for engineering).</td>
<td><strong>E6.</strong> They use technology and digital media strategically and capably.</td>
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<td><strong>M7.</strong> Look for and make use of structure.</td>
<td><strong>S7.</strong> Engaging in argument from evidence.</td>
<td><strong>E7.</strong> They come to understanding other perspectives and cultures.</td>
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<td><strong>M8.</strong> Look for and express regularity in repeated reasoning.</td>
<td><strong>S8.</strong> Obtaining, evaluating, and communicating information.</td>
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