Enhancing Collaboration between Gifted Education Specialists and Classroom Teachers
Confratute 2023–Day 3
Today

- Exit Ticket Review
- Curriculum Compacting & Differentiation Log
- Advanced Resources
- Advanced Standards
- Vetting and Increasing Cognitive Complexity
- Putting it All Together
- Wrap Up and Exit Ticket
Exit Ticket Review – Eager to try

- Values activity with students
- Planning to co-plan
- Co-creating norms
- Operational styles activity – teachers and students
- Co-Planning Organizer
- Communication activity
Exit Ticket Review - Wonder

- Enlist administrative support
- Assess principal and coaches' ability to observe/identify appropriate differentiation
- Common core values among staff; will it help others be more receptive to each other?
- Time
- Help some people see their operational styles
- Share co-planning template with entire campus
- Will teachers actually do this?
- How to measure success
- Do we spend enough time looking at core values and teaming?
- Full directions for values activity
Exit Ticket Review

- Scope of the work; time constraints
- Maybe doing challenge/reflection activities with students the first month of school.
- How to help those who do not see their operational style
- How will I make sure we are following through with norms weekly check in every other week time?
- The amount of pre-planning
Exit Ticket Review

- Having a specific schedule.
- Communicating goals, norms and expectations.
- Both knowing the goal and both sharing the goal
- Organization
- Working together as a team through differences
- Co-setting norms for Co accountability.
- A willing heart; Partnership. Someone willing to take the leap of faith.
- It takes Work to make collaboration successful—but it's worth it.
BUMP UP Differentiation

- Options
- Not prescribed

### Pacing Guide Differentiation Log

<table>
<thead>
<tr>
<th>Unit: __________________________</th>
<th>Lesson: __________________________</th>
<th>Date: __________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grouping of Advanced Students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Whole Class</td>
<td></td>
<td></td>
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<tr>
<td>□ Flexible Group</td>
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<tr>
<td>□ Individual</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Standard(s) for Today’s Lesson**

**Differentiation**

<table>
<thead>
<tr>
<th>Content From a Supplemental Source</th>
<th>Differentiation of the Standard Selected Above</th>
<th>Alternative Standard</th>
</tr>
</thead>
</table>

- Topic __________________________
- Source __________________________
- DOK Level 3 or Level 4 ?

**Brief description of differentiated activity:**

- Math differentiation option from the textbook for this lesson.*
  - Page _____ Activity Number(s) ______
- DOK Level 3 or Level 4 ?
  - and/or
- DOK Differentiated to: Level 3 or Level 4 ?

**Grade Standard**

**DOK Level 3 or Level 4 ?**

**Brief description of differentiated activity:**

**Other/Notes**
Curriculum Compacting
Tenets of Curriculum Compacting

<table>
<thead>
<tr>
<th>NAME</th>
<th>AGE</th>
<th>TEACHER(S)</th>
<th>Individual Conference Dates And Persons Participating in Planning Of IEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHOOL</td>
<td>GRADE</td>
<td>PARENT(S)</td>
<td></td>
</tr>
</tbody>
</table>

**INDIVIDUAL EDUCATIONAL PROGRAMMING GUIDE**

**The Compactor**

Prepare by: Joseph S. Romanczuk
Lincoln H. Wizen<br>

**CURRICULUM AREAS TO BE CONSIDERED FOR COMPACTING**
Provide a brief description of basic material to be covered during this marking period and the assessment information or evidence that suggests the need for compacting.

**PROCEDURES FOR COMPACTING BASIC MATERIAL**
Describe activities that will be used to guarantee proficiency in basic curricular areas.

**ACCELERATION AND/OR ENRICHMENT ACTIVITIES**
Describe activities that will be used to provide advanced level learning experiences in each area of the regular curriculum.

Name it  Prove it  Change it
### Student A

**Score:** 19.0 - 90.5%

**Exam Name:** Physical 1 pre generic

**Instructor:** Carpenter

<table>
<thead>
<tr>
<th>Standard Description</th>
<th>Correct</th>
<th>Total</th>
<th>Proficiency Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.7.P.11. Recognize that adding heat to or removing heat from a system may result in a temperature change and possibly a change of state.</td>
<td>3</td>
<td>5</td>
<td>50.0%</td>
</tr>
<tr>
<td>SC.7.P.11. Investigate and describe the transformation of energy from one form to another.</td>
<td>6</td>
<td>8</td>
<td>75.0%</td>
</tr>
<tr>
<td>SC.7.P.11. Cite evidence to explain that energy cannot be created nor destroyed, only changed from one form to another.</td>
<td>1</td>
<td>3</td>
<td>33.3%</td>
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<tr>
<td>SC.7.P.11. Observe and describe that heat flows in predictable ways, moving from warmer objects to cooler ones until they reach the same temperature.</td>
<td>3</td>
<td>5</td>
<td>60.0%</td>
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</tbody>
</table>

**Overall Proficiency:** 19 / 21

### Student B

**Score:** 17.1 - 01.3%

**Exam Name:** Physical 1 pre generic

**Instructor:** Carpenter

<table>
<thead>
<tr>
<th>Standard Description</th>
<th>Correct</th>
<th>Total</th>
<th>Proficiency Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.7.P.11. Recognize that adding heat to or removing heat from a system may result in a temperature change and possibly a change of state.</td>
<td>5</td>
<td>5</td>
<td>100.0%</td>
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<tr>
<td>SC.7.P.11. Investigate and describe the transformation of energy from one form to another.</td>
<td>7</td>
<td>8</td>
<td>87.5%</td>
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<td>SC.7.P.11. Cite evidence to explain that energy cannot be created nor destroyed, only changed from one form to another.</td>
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<td>3</td>
<td>100.0%</td>
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<tr>
<td>SC.7.P.11. Observe and describe that heat flows in predictable ways, moving from warmer objects to cooler ones until they reach the same temperature.</td>
<td>4</td>
<td>4</td>
<td>80.0%</td>
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</table>

**Overall Proficiency:** 19 / 21
ABILITY GROUPING IS BEST PRACTICE
Step 1: Name it

- What is in the unit?
- Deconstruct the standard(s)
Step 2: Prove it
- Identify students
- Measure student mastery
**Students Who Know:**

Little of the unit’s concepts and skills prior to instruction

**Are Students Who Need:**

Standard curriculum and instruction

**Unit 1 Standards**

- Standard 1
- Standard 2
- Standard 3
- Standard 4
- Standard 5

**Unit 1 Standards**

- Standard 1
- Standard 2
- Standard 3
- Standard 4
- Standard 5

**Unit 1 Standards**

- Standard 1
- Standard 2
- Standard 3
- Standard 4
- Standard 5

**Some** of the unit’s concepts and skills prior to instruction AND/OR can learn the rest quickly, once shown

**Almost** all or all the unit’s concepts and skills prior to instruction

To be taught what they do not know and allowed to skip repetitions if they quickly master the new content or skill

Something new and different
Prove It Examples

- Pre-test (version of the post-test)
- Open-ended large concept question
- Pre-unit challenge lesson to observe advanced mathematics behaviors
- Verbal questioning
- Probes
- Asking students to perform a skill
- Answer the essential question(s)
Various ways the data could present

- 60% or above on all standards
- Over 60% or above on 3 out of 5 standards
Step 3 – Change it

Alter the regular curriculum for those students in various ways

- Type III’s
- Accelerate to concepts or units you do not traditionally have time to cover
- Excuse students from sections mastered; streamline the rest
- Real-world, problem-based learning
- Alternative unit
- A higher grade’s related standards
A choice of ways...

• Alternative lesson focusing on standards 1–3 while everyone else does lessons for 1–3, and then join the class for 4 and 5.

   OR

• Accelerate to higher standards while everyone works on 1–3. Then, they can join the students who already compacted out of the unit.
### Pacing Guide Differentiation Log

<table>
<thead>
<tr>
<th>Unit:</th>
<th>Date:</th>
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<tbody>
<tr>
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#### Standard(s) for Today's Lesson

<table>
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<tr>
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<th>Alternative Standard</th>
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#### Differentiation

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<tr>
<td>Topic____________________________</td>
<td>☐ Math differentiation option from the textbook for this lesson.*</td>
<td>Grade___ Standard________________</td>
</tr>
<tr>
<td>Source___________________________</td>
<td>Page _____ Activity Number(s)______________</td>
<td>DOK Level 3 __ or Level 4 __?</td>
</tr>
<tr>
<td>DOK Level 3 __ or Level 4 __?</td>
<td>☐ DoK Differentiated to: Level 3 __ Level 4 __?</td>
<td>DOK Level 3 __ or Level 4 __?</td>
</tr>
<tr>
<td>Brief description of differentiated activity:</td>
<td>☐ DOK Differentiated to: Level 3 __ Level 4 __?</td>
<td>Brief description of differentiated activity:</td>
</tr>
</tbody>
</table>

#### Other/Notes

*Brief description of differentiated activity:
Advanced Standards
Selecting Advanced Standards for Advanced Mathematics in the Elementary Classroom
Higher Standards or Those You Do Not Normally Reach
# Progression of Strands

<table>
<thead>
<tr>
<th>K</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9-12</th>
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<tbody>
<tr>
<td><strong>Number Sense and Operations (NSO)</strong></td>
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<td><strong>Fractions (FR)</strong></td>
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<td><strong>Algebraic Reasoning (AR)</strong></td>
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<td><strong>Functions (F)</strong></td>
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<td><strong>Financial Literacy (FL)</strong></td>
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<td><strong>Measurement (M)</strong></td>
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<td><strong>Geometric Reasoning (GR)</strong></td>
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<td><strong>Trigonometry (T)</strong></td>
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<td><strong>Data Analysis and Probability (DP)</strong></td>
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<td><strong>Logic and Discrete Theory (LT)</strong></td>
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<td><strong>Calculus (C)</strong></td>
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<tr>
<td><strong>Mathematical Thinking and Reasoning Standards (MTR)</strong></td>
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</tbody>
</table>
If your standards do not have a progression chart...

- Hints:
  - Similar letters and numbers
  - Similar key words and phrases
Selecting Standards You Do Not Normally Reach

- Sub-standards you do not have as much time to address throughout the unit
- Standards at the end of the year’s scope and sequence
• A shared form
• Pre-populated standards
• Would/not recommend a higher grade standard
• Living document
• https://tinyurl.com/wjub834t

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Standard</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Grade 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1: Read and write numbers from 0 to 10,000 using standard form, expanded form and word form.</td>
<td>1.1: Express how the value of a digit in a multi-digit whole number changes if the digit moves one place to the left or right.</td>
<td>1.1: Express the value of a digit in a multi-digit number with decimals to the thousandths changes if the digit moves one or more places to the left or right.</td>
<td>1.1: Extend previous understanding of numbers to define rational numbers.</td>
<td>1.1: Know and apply the laws of exponents to evaluate numerical expressions and generate equivalent numerical expressions, limited to whole number exponents and rational number bases.</td>
<td>1.1:</td>
<td>1.1:</td>
</tr>
<tr>
<td>MA/NS.1.1</td>
<td>1.2: Compose and decompose four-digit numbers in multiple ways using thousands, hundreds, tens and ones. Demonstrate each composition or decomposition using objects, drawings and expressions or equations.</td>
<td>1.2: Read and write multi-digit whole numbers from 0 to 1,000,000 using standard form, expanded form and word form.</td>
<td>1.2: Read and write multi-digit numbers with decimals to the thousandths using standard form, word form and expanded form.</td>
<td>1.2: Given a mathematical or real-world context, represent quantities that have opposite direction using rational numbers. Compare them on a number line and explain the meaning of zero within its context.</td>
<td>1.2: Rewrite rational numbers in different but equivalent forms including fractions, mixed numbers, repeating decimals and percentages to solve mathematical and real-world problems.</td>
<td>1.2:</td>
</tr>
<tr>
<td>MA/NS.1.2</td>
<td>1.3: Plot, order and compare whole numbers up to 10,000.</td>
<td>1.3: Plot, order and compare multi-digit whole numbers up to 1,000,000.</td>
<td>1.3: Compose and decompose multi-digit numbers with decimals to the thousandths in multiple contexts.</td>
<td>1.3: Given a mathematical or real-world context, interpret the absolute value of a number as its distance from zero on a number line.</td>
<td>1.3:</td>
<td>1.3:</td>
</tr>
</tbody>
</table>

SAMPLE: I would consider using the Gr. 5 and Gr. 6 standards as I think the Gr. 5 extension to decimals would not be enough, but going to Gr. 6’s extension to rational numbers would be enough.
Advanced Resources
Vetting and Selecting Resources

Publishers

Associations

Researchers
Standards-Based

- Easy to match to pre-existing units.
LESSON 1.1

Factor Pairs and Multiples

Estimated Time
- 60-90 minutes

Key Terms
- Prime number
- Composite number
- Factor pair
- Multiple
- Square number (This term may not have been covered yet, so it may need to be explained.)

Materials
- Lessons 1.1 Activity: Factor Pairs and Multiples
- Lessons 1.1 Number Cards (one set per group)
- Lessons 1.1 Practice: Factor Pairs and Multiples
- Lessons 1.1 Assessment Practice
- Counters (100 per group)
- Graph or chart paper
- Hundreds chart (one per student; needs to be made in advance)
- Crayons or colored pencils

Objectives
- In this lesson, students will:
  - Identify pairs for all factors for a whole number in the range of 1-100

Lesson 1.1 Activity: Factor Pairs and Multiples

In this activity, students will work in pairs and take turns randomly choosing a number card. Students will design all arrays using counters for the number on their card as they work to design patterns for arrays (see examples below). Students will record all arrays, including length and width, on the graphs or chart paper provided. Students will then list all factor pairs for their card numbers and work to find a specified multiple for their numbers. Students will determine generalized rules for when a number is a multiple of another number.

Teacher’s Note. This lesson includes questions about prime numbers. You may have to explain that 0 and 1 are neither prime nor composite numbers and that 2 is the only even prime number.

2 x 10
Possible Arrays

3 x 11
Possible Arrays
Open-ended, Real-world Problem or Project-based Learning
Open-ended Questions

- Require thinking and reflecting
- Foster an exchange of opinions or ideas
- Allow for higher level thinking skills
- Begin with why, how, what, describe, tell me about..., or what do you think about...

Real-world Problems

- Familiar or imaginable scenarios
  - Fanciful
  - Practical
- Engaging
- Cross-discipline
Depending on student needs…

Project-Based

Problem-Based

This way

This way
Not necessary to reinvent...
Vetted


https://robertkaplinsky.com/lessons/

https://www.youcubed.org/tasks/
Sharing of Vetted Sources by Discipline

Visit the different discipline charts
Add a vetted source and the grade range (e.g., elementary; all grades)

- Math
- Science
- Social Studies
- The Arts
- Language Arts

One vetted source by grade range
### Activity

**Advanced Options by Standards**

- Shared form
- Pre-populated standards
- Ideas for higher grade level standard or problem/project-based learning option
- Living document

<table>
<thead>
<tr>
<th>Grade 4</th>
<th>Related Higher Grade Level Standard</th>
<th>Problem or Project Based Learning Option (Link)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1: Express how the value of a digit in a multi-digit whole number changes if the digit moves one place to the left or right.</td>
<td>SAMPLE: Gr. 5 1.1: Express the value of a digit in a multi-digit number with decimals to the thousandths changes if the digit moves one or more places to the left or right.</td>
<td>SAMPLE: How Much Money Were Those Pennies? <a href="https://robertkaplinsky.com/work/much-money-pennies/">https://robertkaplinsky.com/work/much-money-pennies/</a></td>
</tr>
<tr>
<td>1.2: Read and write multi-digit whole numbers from 0 to 1,000,000 using standard form, expanded form and word form.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3: Plot, order and compare multi-digit whole numbers up to 1,000,000.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4: Round whole numbers from 0 to 10,000 to the nearest 10 or 100.</td>
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</tr>
</tbody>
</table>
Increasing Cognitive Complexity
Bloom’s Revised Taxonomy
Anderson & Krathwohl, 2001

Higher Order Thinking Skills
- Create
- Evaluate
- Analyze

Lower Order Thinking Skills
- Apply
- Understand
- Remember
Bloom's Taxonomy as Easy as Pie

• Clarity of how the Taxonomy levels build
• Visual to aid in understanding
• Analogy to something that almost everyone can relate to*

*Bloom’s Taxonomy – As Easy as Riding a Bike
Multiple Points of Entry to Bloom’s Levels
Verbs – That’s what’s happening.

**Bloom’s Taxonomy**

- **Remember**
  - Recall facts and basic concepts
    - define, duplicate, list, memorize, repeat, state

- **Understand**
  - Explain ideas or concepts
    - classify, describe, discuss, explain, identify, locate, recognize, report, select, translate
  - Use information in new situations
    - execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch

- **Apply**
  - Draw connections among ideas
    - differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test

- **Analyze**
  - Justify a stand or decision
    - appraise, argue, defend, judge, select, support, value, critique, weigh

- **Evaluate**
  - Produce new or original work
    - design, assemble, construct, conjecture, develop, formulate, author, investigate

- **Create**
### REVISED Bloom’s Taxonomy Action Verbs

<table>
<thead>
<tr>
<th>Definitions</th>
<th>I. Remembering</th>
<th>II. Understanding</th>
<th>III. Applying</th>
<th>IV. Analyzing</th>
<th>V. Evaluating</th>
<th>VI. Creating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloom’s Definition</td>
<td>Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.</td>
<td>Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.</td>
<td>Solve problems to new situations by applying acquired knowledge, facts, techniques, and rules in a different way.</td>
<td>Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.</td>
<td>Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.</td>
<td>Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.</td>
</tr>
</tbody>
</table>

#### Verbs

- Choose
- Define
- Find
- Flow
- Label
- List
- Match
- Name
- Note
- Recall
- Relate
- Select
- Show
- Spell
- Tell
- Think
- What
- Where
- Which
- Who
- Why

- Classify
- Compare
- Contrast
- Demonstrate
- Explain
- Extend
- Illustrate
- Infer
- Interpret
- Outline
- Relate
- Refine
- Show
- SYN: Summarize
- Translate

- Apply
- Build
- Choose
- Construct
- Develop
- Experiment with
- Identify
- Interview
- Make use of
- Model
- Organize
- Plan
- Select
- Solve
- Utilize

- Analyze
- Assume
- Categorize
- Classify
- Compare
- Conclusion
- Contrast
- Discover
- Distinguish
- Divide
- Examine
- Examine
- Function
- Infer
cence
- Inspect
- List
- Motive
- Relationships
- Simplify
- Survey
- Take part in
- Text for
- Theme

- Agree
- Appraise
- Assess
- Award
- Choose
- Compare
- Conclude
- Criteria
- Criticize
- Decide
- Deduce
- Defend
- Determine
- Disprove
- Evaluate
- Estimate
- Explain
- Importance
- Influence
- Interpret
- Judge
- Justify
- Mark
- Measure
- Opinion
- Perceive
- Prioritize
- Prove
- Rate
- Recommend
- Rule on
- Select
- Support
- Test
- Value

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Activity

Analyzing Bloom’s in Standards

• Shared form
• Pre-populated standards
• Analyzing Bloom’s levels
• Living document

<table>
<thead>
<tr>
<th>Step 1: Identify the verb(s) from the standard</th>
<th>Step 2: Analyze the verb(s) level of Bloom’s Taxonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1: Express how the value of a digit in a multi-digit whole number changes if the digit moves one place to the left or right.</td>
<td>SAMPLE: Express how</td>
</tr>
<tr>
<td>1.2: Read and write multi-digit whole numbers from 0 to 1,000,000 using standard form, expanded form and word form.</td>
<td>SAMPLE: Understanding</td>
</tr>
<tr>
<td>1.3: Plot, order and compare multi-digit whole numbers using a number line.</td>
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</tr>
<tr>
<td>2.1: Count and read multi-digit whole numbers from 0 to 1,000,000.</td>
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<tr>
<td>2.2: Compare multi-digit whole numbers from 0 to 1,000,000.</td>
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</tr>
<tr>
<td>2.3: Classify numbers as odd or even.</td>
<td></td>
</tr>
</tbody>
</table>
Webb’s Depth of Knowledge
Webb’s Depth of Knowledge  (Webb, 1997)

- Related to number of connections of concepts and ideas a student needs to make
- Other factors that influence the cognitive demands of performance
# Math Content Standards & Math Practices

<table>
<thead>
<tr>
<th>Depth + Thinking</th>
<th>Level 1 Recall &amp; Reproduction</th>
<th>Level 2 Skills &amp; Concepts (routine applications)</th>
<th>Level 3 Strategic Thinking (support with data, equations, models, etc.)</th>
<th>Level 4 Extended Thinking (across domains)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Remember</strong></td>
<td>Know math facts, terms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Understand</strong></td>
<td>Attend to precision</td>
<td>Model with mathematics</td>
<td>Construct viable arguments</td>
<td>Integrate concepts across domains</td>
</tr>
<tr>
<td></td>
<td>Evaluate expressions, plot point</td>
<td>Estimate, predict, observe, explain relationships</td>
<td>Geometry proof</td>
<td></td>
</tr>
<tr>
<td><strong>Apply</strong></td>
<td>Calculate, measure, make conversions</td>
<td>Make sense of routine problems</td>
<td>Make sense of non-routine problems</td>
<td>Design &amp; conduct a project</td>
</tr>
<tr>
<td><strong>Analyze</strong></td>
<td>Identify a pattern</td>
<td>Use tools strategically</td>
<td>Reason abstractly</td>
<td>Analyze multiple sources of evidence</td>
</tr>
<tr>
<td></td>
<td>Locate information in table</td>
<td>Classify, organize data, extend a pattern</td>
<td>Generalize a pattern</td>
<td></td>
</tr>
<tr>
<td><strong>Evaluate</strong></td>
<td></td>
<td></td>
<td>Critique the reasoning of others</td>
<td></td>
</tr>
<tr>
<td><strong>Create</strong></td>
<td></td>
<td></td>
<td>Design a complex model</td>
<td></td>
</tr>
</tbody>
</table>
DOK 1

- Recall
- A simple algorithm or a formula
- Key words “identify,” “recall,” “recognize,” “use,” and “measure.” (Webb, 2002, p. 3)

EXAMPLE:
DOK Level 1: **Recognize** that 700 ÷ 70 = 10 by applying concepts of place value and division
Beyond a habitual response
Decisions on solving
More than one step AND concept

EXAMPLE:

**DOK Level 2:** Jess uses powers of 10 and exponents to find the product of the following terms.

*What are the products?*

\[0.5 \times 10^5 = \text{___________}\]

\[0.05 \times 10^5 = \text{___________}\]
DOK 3

- Reasoning, planning, using evidence, and a higher level of thinking
- Justifying the response
- Drawing conclusions; citing evidence and developing a logical argument; explaining phenomena

EXAMPLE:

DOK Level 3: Explain why $700 \div 70 = 10$, including the role of place value in doing the division.
DOK 4

- Complex reasoning, planning, developing, and thinking
- Extended period of time
- Requires several connections

EXAMPLE:

DOK Level 4: For our annual food drive, we must figure out how to ship over 400 cans. Decide the best shipping method (crates, cases, or individual boxes) to use as few packages as possible. Write a letter to the principal projecting the amount of money the school will spend shipping the packages. Justify the most efficient packaging and shipping methods. (DeKalb County School District, n.d.)
## Activity
**Identifying Webb’s Depth of Knowledge**

- Shared form
- Pre-populated standards
- Identifying Webb’s DOK
- Living document

<table>
<thead>
<tr>
<th>Step 1: Identify the Depth of Knowledge Level (1, 2, 3, or 4)</th>
<th>Step 2: Explain the context that makes it that level of Depth of Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1: Express the value of a digit in a multi-digit number with decimals to the thousandths changes if the digit moves one or more places to the left or right.</td>
<td>SAMPLE: 1</td>
</tr>
<tr>
<td>1.2: Read and write multi-digit numbers with decimals to the thousandths using standard form, word form and expanded form.</td>
<td></td>
</tr>
<tr>
<td>1.3: Compose and decompose multi-digit numbers with decimals to the thousandths in multiple ways using the values of the digits in each place. Demonstrate the</td>
<td></td>
</tr>
</tbody>
</table>
Type III’s

Turn and Talk:

Which DOK is a SEM Type III?
Increasing Cognitive Complexity
Leveling Up
Steps for Leveling-up DOK

1. Analyze
   - What is being asked of the students?
   - What is the DOK level?

2. Determine
   - Where do we see a similar concept in future standards?
   - Where can we provide fewer supports?
   - What other questions can we ask about this problem?

3. Construct
   - Select from the standards and/or additional questions created.
   - Rewrite the problem to remove supports and insert updated elements.

4. Re-Evaluate
   Now that you have leveled-up the question, re-evaluate what students are being asked to do at the new DOK level.
Steps for Leveling-up DOK

1. Analyze
   - What is being asked of the students?
   - What is the DOK level?

2. Determine

3. Construct
   - Select from the standards and/or additional questions created.
   - Rewrite the problem to remove supports and insert updated elements.

Now that you have leveled-up the question, re-evaluate what students are being asked to do at the new DOK level.
Steps for Leveling-up DOK

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2. Determine

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- Where can we provide fewer supports?
- What other questions can we ask about this problem?

3. Construct

- Select from the standards and/or additional questions created.
- Rewrite the problem to remove supports and insert updated elements.
Steps for Leveling-up DOK

1. Analyze

2. Determine

3. Construct

- Select from the standards and/or additional questions created.
- **Rewrite** the problem to remove supports and insert updated elements.

- Where do we see a similar concept in future standards?
- Where can we provide fewer supports?
- What other questions can we ask about this problem?
Steps for Leveling-up DOK

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   - Select from the standards and/or additional questions created.
   - Rewrite the problem to remove supports and insert updated elements.

4. Re-Evaluate
   Now that you have leveled-up the question, re-evaluate what students are being asked to do at the new DOK level.
A photographer has files saved in three online albums.
- The Wedding album has 2,073 files.
- The Birthday album has 1,860 files.
- The Pets album has 2,370 files.

Which album has the most files? Show your work.

*Hint: You might want to use a place-value chart to compare these numbers.*

(Curriculum Associates, 2015)
Currently, what is this question asking the student to do?

- Compare place value
- Order numbers least to greatest

A photographer has files saved in three online albums.
- The Wedding album has 2,073 files.
- The Birthday album has 1,860 files.
- The Pets album has 2,370 files.

Which album has the most files? Show your work.

*Hint: You might want to use a place-value chart to compare these numbers.*

(Curriculum Associates, 2015)
Currently, what is the DOK of this problem?

- DOK 2: Classifying a number and requiring students to make an informed decision using multiple steps to solve.

A photographer has files saved in three online albums.
- The Wedding album has 2,073 files.
- The Birthday album has 1,860 files.
- The Pets album has 2,370 files.

Which album has the most files? Show your work.

*Hint: You might want to use a place-value chart to compare these numbers.*

(Curriculum Associates, 2015)
A photographer has files saved in three online albums.

- The Wedding album has 2,073 files.
- The Birthday album has 1,860 files.
- The Pets album has 2,370 files.

**Which album has the most files? Show your work.**

*Hint: You might want to use a place-value chart to compare these numbers.*

(Curriculum Associates, 2015)
Where can we provide fewer supports for students?

- Eliminate the hint

A photographer has files saved in three online albums.
- The Wedding album has 2,073 files.
- The Birthday album has 1,860 files.
- The Pets album has 2,370 files.

Which album has the most files? Show your work.

*Hint:* You might want to use a place-value chart to compare these numbers.

(Curriculum Associates, 2015)
What other questions can we ask about this problem?

- Show two ways to answer the question, “Which album has the most files?”
- Use a diagram to help you solve this problem
- Order the files from least to greatest
- Explain your thought process
- Provide students the opportunity to use new math vocabulary (least and greatest) and symbols (<, >, =)
- Allow students to see that “most” is the same as “greatest”
How can we implement these questions?

New Problem

A photographer has picture files saved in three online albums. The Wedding album has 2,073 files. The Birthday album has 1,860 files. The Pets album has 2,370 files.

a. Order the files from least to greatest. Then, describe how you came up with an order for the numbers.

b. Now, come up with another way to compare the number of files in each album. What makes this way different than the first way you solved this problem?

c. After ordering the number of files, which album has the greatest (or most) number of files? Which album has the least (or smallest) number of files?

*Part (c) is so the students can explicitly state their answer, and they self-correct by ensuring parts (a) and (b) are the same.*
Now, what is this question asking?

(This should be the same as the original question/task.)

- Compare place value of the numbers
- Order numbers from least to greatest
Now, what is the DOK of this problem?

(DOK should increase & look at Bloom’s Taxonomy)

- **DOK 3**
  - **Explain** their thinking
  - **Another way** to approach the problem
  - **Compare** answers
  - **Analyze** their responses.
Choosing Advanced Options
Match advanced options to students, not just standards

That being said...
Deciding on advanced options...
<table>
<thead>
<tr>
<th>1. Points, Lines, Angles, Rays (5 Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1: Using your knowledge... pp. 238-39</td>
</tr>
<tr>
<td>1.2: Points, Lines, and Rays pp. 240-43</td>
</tr>
<tr>
<td>1.3: Parallel, Perpendicular Lines pp. 244-45</td>
</tr>
<tr>
<td>1.4: Identifying Points, Lines, Rays, and Angles Together – pp. 246-47</td>
</tr>
<tr>
<td>1.5: Identifying Points, lines, Rays, and Angles – Independently pp. 248-49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Classify 2D Figures (5 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1: What do you know? pp. 350-351</td>
</tr>
<tr>
<td>2.2: Sorting Shapes Based on Side and Sorting Shapes Based on Angles – Modeled and Guided Instruction pp. 352-355</td>
</tr>
<tr>
<td>2.3: Sorting Triangles – Modeled and Guided Instruction pp. 356-357</td>
</tr>
<tr>
<td>2.4: Practice Classifying Two Dimensional Figures – Guided Practice pp. 358-359</td>
</tr>
<tr>
<td>2.5: Practice Classifying Two-Dimensional Figures – Independent practice pp. 360-361</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Symmetry (5 Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1: What do you know? pp. 362-363</td>
</tr>
<tr>
<td>3.2: Finding Lines of Symmetry – Modeled and guided instruction pp. 364-365</td>
</tr>
<tr>
<td>3.3: Drawing a Line of Symmetry – Modeled and guided instruction pp. 366-367</td>
</tr>
<tr>
<td>3.4: Practice Finding and Drawing Lines of Symmetry – Guided practice pp. 368-369</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Classify Shapes and Angles (2 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1: Introduction, modeled and guided practice</td>
</tr>
<tr>
<td>4.2: Independent Practice</td>
</tr>
</tbody>
</table>
1. Examine the activity.

2. Decide if the activity is advanced. *If it is not...*

3. Advance!
   - Increase complexity
   - Select an advanced standard
   - Choose from a supplemental source
<table>
<thead>
<tr>
<th>Textbook Activity</th>
<th>Is the activity advanced?</th>
<th>What could I do or choose to make it more challenging?</th>
</tr>
</thead>
<tbody>
<tr>
<td>pp. 238-39 Write</td>
<td>No! Six scaffolds make it</td>
<td>Reduce scaffolding.</td>
</tr>
<tr>
<td>directions on how to</td>
<td>too easy.</td>
<td></td>
</tr>
<tr>
<td>draw a rectangle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content From a Supplemental Source</td>
<td>Differentiation of the Standard</td>
<td>Alternative Standard</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>Topic_____________________________</td>
<td>□ Math differentiation option from the textbook for this lesson.</td>
<td>Grade_____Standard_________________________________________</td>
</tr>
<tr>
<td>Source____________________________</td>
<td>Page 5 Activity Number(s) __________ Brief description of differentiated math activity:</td>
<td>DOK Level 3 _____ or 4 _____?</td>
</tr>
<tr>
<td>DOK Level 3 _____ or 4 _____?</td>
<td>□ DOK Differentiated math to: Level 3 __ and/or Level 4 ___ Brief description of differentiated</td>
<td>Brief description of differentiated math activity:</td>
</tr>
<tr>
<td></td>
<td>math activity: Lesson 1 - Removed scaffolding</td>
<td></td>
</tr>
<tr>
<td>Examine</td>
<td>Decide</td>
<td>Advance</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>Textbook Activity</td>
<td>Is the the activity advanced?</td>
<td>What could we do or choose to make it more challenging?</td>
</tr>
<tr>
<td>Sorting Shapes pp. 352-355</td>
<td>No. It is lower level and repetitive of pp. 352 and 354</td>
<td>2.2 Advanced Activity: Gr. 5 Textbook pp. 323-324</td>
</tr>
<tr>
<td>Content From a Supplemental Source</td>
<td>Differentiation of the Standard</td>
<td>Alternative Standard</td>
</tr>
<tr>
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<tr>
<td>Topic____________________________</td>
<td>☐ Math differentiation option from the textbook for this lesson.</td>
<td>Grade 5 Standard G.2.3</td>
</tr>
<tr>
<td>Source___________________________</td>
<td>Page _____ Activity Number(s) ______________</td>
<td>DOK Level 3 X or 4 ____?</td>
</tr>
<tr>
<td>DOK Level 3 _____ or 4 _____?</td>
<td>Brief description of differentiated math activity:</td>
<td>Brief description of differentiated math activity:</td>
</tr>
<tr>
<td>Brief description of differentiated math activity:</td>
<td>DOK Level 3 _____ or 4 _____? and/or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>☐ DOK Differentiated math to: Level 3 ____ and/or Level 4 ____</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brief description of differentiated math activity:</td>
<td>Lesson 2 - Gr. 5 Ready Textbook pp. 323-324</td>
</tr>
<tr>
<td>Textbook Activity</td>
<td>Is the activity advanced?</td>
<td>What could we do or choose to make it more challenging?</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
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<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Finding and Drawing Lines of Symmetry pp. 370-371</td>
<td>Describing and recognizing shape features.</td>
<td>W&amp;M Grade 4 Lesson 5.2 pp. 207-209 - develop methods for finding the area of a trapezoid</td>
</tr>
<tr>
<td>Content From a Supplemental Source</td>
<td>Differentiation of the Standard</td>
<td>Alternative Standard</td>
</tr>
<tr>
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</tr>
<tr>
<td><strong>Symmetry</strong></td>
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</tr>
<tr>
<td>Source: <strong>W&amp;M Beyond Polygons</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOK Level 3 _ X _ or 4 _____?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brief description of differentiated math activity:</td>
<td>Math differentiation option from the textbook for this lesson.</td>
<td>Grade ____ Standard ____________________________</td>
</tr>
<tr>
<td>Lesson 3 Gr. 3 Lesson 5.2 pp. 207-209: Analyzing lines of symmetry and formulating a pattern/rule about lines of symmetry and the number of sides shapes have.</td>
<td>Page _____ Activity Number(s) _____________</td>
<td>DOK Level 3 ____ or 4 _____?</td>
</tr>
<tr>
<td></td>
<td>Brief description of differentiated math activity:</td>
<td>Brief description of differentiated math activity:</td>
</tr>
<tr>
<td></td>
<td>DOK Level 3 ____ or 4 _____?</td>
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<td></td>
<td>and/or</td>
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</tr>
<tr>
<td>□ DOK Differentiated math to: Level 3 __ and/or Level 4 ___</td>
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<tr>
<td>Textbook Activity</td>
<td>Is the the activity advanced?</td>
<td>What could we do or choose to make it more challenging?</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Introduction and practice of folding shapes.</td>
<td>Not much opportunity for students to understand symmetry in a real-world example.</td>
<td>MiA Advanced Activity: Georgia Culminating Task Geometry Town pp. 90-97</td>
</tr>
<tr>
<td>Independent Practice</td>
<td>Lower-level questions of identification.</td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>polygons</td>
<td></td>
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<tr>
<td>-------</td>
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<td></td>
</tr>
<tr>
<td>Source</td>
<td>Georgia Curriculum Frameworks</td>
<td></td>
</tr>
<tr>
<td>DOK Level 3 _____ or 4 X _____?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Brief description of differentiated math activity: | Lesson 4 - Geometry Town pp. 90-97  
https://www.georgiastandards.org/Georgia-Standards/Frameworks/4th-Math-Unit-6.pdf |

<table>
<thead>
<tr>
<th>Differentiation of the Standard</th>
<th>Alternative Standard</th>
</tr>
</thead>
</table>
| □ Math differentiation option from the textbook for this lesson.  
Page _____ Activity Number(s) ___________  
Brief description of differentiated math activity:  
DOK Level 3 _____ or 4 _____?  
and/or  
□ DOK Differentiated math to: Level 3 __ and/or  
Level 4 __  
Brief description of differentiated math activity: | Grade _____ Standard ____________________________  
DOK Level 3 _____ or 4 _____?  
Brief description of differentiated math activity: |
Multiple differentiation options in one topic/unit:

<table>
<thead>
<tr>
<th>Content From a Supplemental Source</th>
<th>Differentiation of the Standard</th>
<th>Alternative Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic: polygons</td>
<td></td>
<td>Grade 5 Standard</td>
</tr>
<tr>
<td>Source: Georgia Curriculum Frameworks</td>
<td></td>
<td>G.2.3</td>
</tr>
<tr>
<td>DOK Level 3 _____ or 4 X?</td>
<td></td>
<td>DOK Level 3 X or 4</td>
</tr>
<tr>
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<td></td>
<td>?</td>
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<tr>
<td>Lesson 4 - Geometry Town pp. 90-97</td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="https://www.georgiastandards.org/Georgia-Standards/Frameworks/4th-Math-Unit-6.pdf">https://www.georgiastandards.org/Georgia-Standards/Frameworks/4th-Math-Unit-6.pdf</a></td>
<td></td>
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<tr>
<td>Symmetry W&amp;M Beyond Polygons</td>
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<tr>
<td>Lesson 3 Gr. 3 Lesson 5.2 pp. 207-209: Analyzing lines of symmetry and formulating a pattern/rule about lines of symmetry and the number of sides shapes have.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Math differentiation option from the textbook for this lesson. Page 5 Activity Number(s) 30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brief description of differentiated math activity:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOK Level 3 X or 4 ____?</td>
<td></td>
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</tr>
<tr>
<td>and/or □ DOK Differentiated math to: Level 3 ___ and/or Level 4 ___</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Lesson 1- Removed scaffolding</td>
<td></td>
<td>Lesson 2 - Gr. 5</td>
</tr>
<tr>
<td>Ready Textbook pp. 323-324</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Day 1

- 3-Phase Professional Learning Framework
- Co-Planning and Co-Teaching Introduction
- BUMP UP 5-Step Collaboration Model
- 6 Co-Teaching Models
Day 2

- Four Operation Styles
- 5-Step Collaboration Model – Tools for engaging, co-planning, and co-teaching

**Questions, Roles, and Tasks for Co-planning**

<table>
<thead>
<tr>
<th>Co-planning Questions</th>
<th>Before Meeting</th>
<th>During Meeting</th>
<th>After Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the lesson goals and objectives?</td>
<td>Teacher brings lesson and objectives (CT)</td>
<td>Review objectives (Both)</td>
<td>Did we hit the objectives? (Both)</td>
</tr>
<tr>
<td>How might we pre-assess students?</td>
<td>Gather pre-assessment materials (Both)</td>
<td>Plan pre-assessment and groupings (Both)</td>
<td>Prepare and administer pre-assessments (CT)</td>
</tr>
<tr>
<td>What differentiation strategies will we use to advance the content, build the buy-in, and create challenge?</td>
<td>Consider materials/strategies (GT)</td>
<td>Decide together (Both)</td>
<td>Prepare materials (GT)</td>
</tr>
<tr>
<td>How will we assess student learning?</td>
<td>Both generate ideas (Both)</td>
<td>Select methods (Both)</td>
<td>Create/modify rubrics (GT)</td>
</tr>
<tr>
<td>What are the next steps in student learning?</td>
<td>Review the lesson that was taught (Both)</td>
<td>Discuss future lessons (Both)</td>
<td>Implement next steps for students</td>
</tr>
</tbody>
</table>

Day 3

- Curriculum Compacting & Differentiation Log
- Advanced Resources
- Advanced Standards
- Vetted and Increasing Cognitive Complexity
- Putting it All Together
Resources

- BUMP UP Website
- bumpup@uconn.edu
Thank you!

Exit Ticket

Punctuate Your Learning