Let’s Talk About Math

Math Literacy and Numeracy
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26 years in Placentia Yorba Linda USD  
- 19 teacher  
- 7 Digital Learning/Math Instructional Coach  
Back to the classroom in Fall 2019  

Adjunct Professor  
OC CUE Board Member  
Ed Tech Consultant
# Mathematical Practices

## EduProtocol Alignment Document

<table>
<thead>
<tr>
<th>Overarching Habits of Mind</th>
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<tbody>
<tr>
<td>1. Make sense of problems and persevere in solving them.</td>
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<tr>
<td>6. Attend to precision.</td>
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<table>
<thead>
<tr>
<th>Reasoning and Explaining</th>
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<tbody>
<tr>
<td>2. Reason abstractly and quantitatively.</td>
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<tr>
<td>3. Construct viable arguments and critique the reasoning of others.</td>
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<tr>
<th>Modeling and Using Tools</th>
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<tr>
<td>4. Model with mathematics</td>
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<td>5. Use appropriate tools strategically.</td>
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<tr>
<th>Seeing Structure and Generalizing</th>
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<tr>
<td>7. Look for and make use of structure.</td>
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<tr>
<td>8. Look for and express regularity in repeated reasoning</td>
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Agenda

- Math Reps
- Fast and Curious
- 3 Act Math
- Thin Slides
- Frayer
Math Reps

- Spiral review
- Multiple Repetitions
- Multiple Representations
- Builds automaticity
Fast and the Curious

- Multiple Repetitions
- Gamify Fluency
- Builds automaticity
<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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</thead>
<tbody>
<tr>
<td>Quiz Mini Lesson Quiz</td>
<td>Quiz Mini Lesson Quiz</td>
<td>Quiz Mini Lesson Quiz</td>
<td>Quiz Mini Lesson? Quiz?</td>
<td>Quiz?</td>
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<tr>
<td>Follow up with: Frayer</td>
<td>Follow up with: Thin Slide</td>
<td>Follow up with: Learning 360</td>
<td>Follow up with: ● Frayer ● Review</td>
<td></td>
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</tbody>
</table>
3 Act Math

- Critical Thinking
- Verbal and/or Written Expression
- Engages the learner
- Problem Solving Skills
Act One
Introduce the central conflict of your story/task clearly, visually, using as few words as possible.

Act Two
The student overcomes obstacles, looks for resources, and develops new tools.

Act Three
Resolve the conflict and set up a sequel/extension.

<table>
<thead>
<tr>
<th>Dan Meyers</th>
<th>Andrew Stadel</th>
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<tbody>
<tr>
<td>Blog</td>
<td>Estimation 180</td>
</tr>
<tr>
<td>3 Act Tasks</td>
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</tr>
<tr>
<td>Classroom Chef</td>
<td></td>
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</tbody>
</table>
Thin Slides

- Vocabulary
- Concepts
- Verbal and/or Written Expression
- Engages the learner
- Exit Ticket
1. Watch this video about the 6 types of triangles (3 minutes)

2. Create a Thin Slide for any one of the six types of triangles (3 minutes)

3. Quick share from everyone (10 seconds per student– 6–7 minutes whole class)
Frayer Model

- Vocabulary
- Concepts
- Verbal and/or Written Expression
- Engages the learner
- Exit Ticket
**Frayer Model**

**Google Drawing**

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**Frayer Model** (Frayer, Frederick, & Klausmeir, 1969)

Content for this example taken from Baron & Heidema, (2002) Teaching Reading in the Content Areas (Supplement), McRae.

**Definition**

A whole number with exactly two divisors (factors)

**Characteristics**

- 2 is the only even prime number
- 0 and 1 are not prime
- Every whole number can be written as a product of primes

**Examples**

2, 3, 5, 7, 11, 13, 17, ...

**Non-Examples**

1, 4, 6, 8, 9, 10, ...

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**Rectangle**

**Definition**

A four-sided polygon with four right angles.

**Facts/Properties**

Diagonals are congruent.

Interior angles sum to 360°.

A = lw, where A is area, l is length, and w is width.

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**Perimeter**

**Definition**

- the distance around the shape
- distance around closed figure
- outlining of an object

**Facts/Characteristics**

- odd only the numbers on the outside of the shape
- the lengths outside or object added together

- common units include cm, m, km, in, yds, mi

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**Examples**

- Triangle
- Circle

**Non-examples**

- can’t find perimeter because it is not a closed figure
How can I HEAR from each student?

Flipgrid

Disco Library