3-Act Tasks: 
Filling the Void of Mathematical Modeling In the Elementary Grades

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Thank You!
Next time you're afraid to share ideas, remember someone once said in a meeting, let's make a film with a tornado full of sharks.
Joe had some playing cards in his bag. Ashley gave him 13 more cards. Joe now has 21 cards. How many cards did Joe have in his bag?
The problem with word problems...

context

quantity
Joe had some playing cards in his bag. Ashley gave him 13 more cards. Joe now has 21 cards. How many cards did Joe have in his bag?
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How many cards did Joe have in his bag?
3-Act Task
Notice?
Wonder?
How many Whoppers in the jar?
What information would you like to know?
Whoppers per bag
These are the leftover Whoppers from the 5th bag. They wouldn’t fit in the jar.
3-Act Tasks

Act 1:
- Real world problem or scenario presented
- What do you notice? What do you wonder?
- Make estimates

Act 2:
- Identify missing variables and missing variables to solve
- Define solution path using variables

Act 3:
- Solve and interpret results of the solution
- Validate answer
The 8 Standards for Mathematical Practices

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning
4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.
4 Model with mathematics.

solve problems arising in everyday life, society, and the workplace.

assumptions and approximations

identify important quantities

can analyze those relationships

interpolate their mathematical results

and reflect on whether the results make sense, possibly

making
Model with Mathematics

Contextualized

- Real-world problem
- Make assumptions & estimates
- Identify variables & missing information
- Solve and interpret the results
- Real-world solution & validated answer

Decontextualized

- Define a solution path using variables
Most asked questions:

- How often should we use 3-Act Tasks?
- When should we use 3-Act tasks? How do they fit into the scope of a unit?
- How long does one task usually take?
- What if we don’t have the time?
- What does this look like virtually?
Teaching 3 Acts Virtually
Less > More
Where I initially went wrong teaching rich tasks remotely.

Patient Problem Solving
The Power of Turn and Talk
Managing the Lesson Flow

Name:

What do you notice:  What do you wonder?

Estimate:  What information would you like to know?
From Me to **Everyone**:

Please share your thinking in the chat window.
Day 1
Act 1
What do you notice?
What do you wonder?
Estimate how many glasses both jugs will fill up?
**Name:** Marybeth

<table>
<thead>
<tr>
<th>What do you notice?</th>
<th>What do you wonder?</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Pink and yellow lemonade</td>
<td></td>
</tr>
<tr>
<td>● Jugs</td>
<td></td>
</tr>
<tr>
<td>● Cups</td>
<td></td>
</tr>
<tr>
<td>● Table</td>
<td></td>
</tr>
<tr>
<td>● How many glasses of lemonade will the 2 jugs fill up?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimate:</th>
<th>What information would you like to know:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● 10 cups</td>
<td></td>
</tr>
<tr>
<td>● I don't know</td>
<td></td>
</tr>
</tbody>
</table>
End of Day 1
Beginning of Class
End of Class

Online

Not Online
Is this any different?
One jug fills 7 glasses of lemonade. How many will two jugs fill?
Hi team and hope all is well. We missed you today.

We had a great time exploring the lemonade task with those students who could make it. If you didn’t have time to join our conversation today we still really want to know your thinking.

Here is the video link to today’s lesson.

1. Open up this Google Slide and find your name.
2. Watch this video: The Lemonade Stand
4. Click here to know what your classmates wanted to know.
5. Share your thinking in the estimate box on the Google Slide.
6. I’ve attached an image we found useful to figure out what we wondered.
7. Solve the problem on paper, in an app, or in a video and email it back to me.

Have fun and we’ll hopefully see you tomorrow.

Mr Fletcher
Day 2
10 + 4 = 14
I think 2 Jugs will fill 14 cups. Because 7 + 7 = 14

10 + 4 = 14
5 + 5 = 10 + 2 = 12

Video chat and I capture a screenshot
$7 + 7 = 10 + 4$
What’s the same? What’s different?
Making Math Accessible

Online

Not Online
Making Math Accessible
Looking for tasks?
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