WHAT’S LITERACY GOT TO DO WITH IT?

Literacy in the Math and Science Classroom

Presented by:
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Barb Mazzolini, Literacy Coach DGSHS
“the ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society.”

The United Nations Educational, Scientific and Cultural Organization (UNESCO)
Learning Objectives:

At the end of the session, participants will be able to
- understand the purpose of Downers Grove South’s Literacy Liaison Model.
- understand how the Literacy Liaison Model benefits students.
- understand how active learning strategies increase student understanding of math and science concepts.
- gain practical examples of resources and strategies to use in the math and science content areas.
Math and Science + Reading Coach = Student Success
Downers Grove South High School
Literacy Liaison Model
A Brief Overview
DGS Background

- Subgroups failed to make AYP in Reading

Needs
- Literacy Instruction for ALL Students
- Literacy Resources for Content Teachers
- Literacy Instructional Training for Content Area Teachers

Resources
- Limited literacy instruction experience
- 6 Reading Specialists
DGS Literacy Liaison Model Objectives

- RAISE AWARENESS
- IMPROVE INSTRUCTION
- INCREASE COLLABORATION
- PROVIDE LITERACY TRAINING
- CREATE CONTENT AREA LITERACY RESOURCES
- ENCOURAGE COLLABORATIVE REFLECTION
Literacy Coach

Qualifications
• Reading Specialist

Qualities
• Flexible
• Trustworthy

Responsibilities
• Meet the identified needs of the students.
• Coach the teacher to meet the needs of the students.
Downers Grove South High School
Math Active Learning Strategies
Objective: To increase student understanding of math concepts.
Math Literacy Coaching

- Second year working with math teachers
- Working with five math teachers
- Focusing on: Vocabulary strategies, Active Learning strategies, Note Taking, and Story Problem strategies
- Meet with the math teachers weekly or bi-weekly
- Observe, guest teach, co-teach, co-plan
Math Teachers

- Word Walls
- Vocabulary Cards
- Connect Two
- ABC Brainstorming
- Three-Column Chart
- Ultimate Challenge
- Vocabulary Knowledge Rating
- Word Sorts
- Content Station Review
- Math Notes
Word Walls - Definition

- A word wall is a group of words that are displayed on a wall, bulletin board, chalkboard, or whiteboard in a classroom.
- The words are printed in a large font so that they are easily visible from all student seating areas.
- These words are referred to continually throughout a unit or term by the teacher and students during a variety of activities.

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What do Word Walls do? They ... 

- provide an approach to meaningful teaching of vocabulary with an emphasis on student engagement and higher level thinking skills;
- build vocabulary, thereby improving reading comprehension and writing style;
- reinforce understanding of subject-specific terminology with a focus on students internalizing key concepts;
Word Walls continued

- help students improve spelling and awareness of spelling patterns;
- provide visual cues for students;
- encourage increased student independence when reading and writing.
Vocabulary Knowledge Rating

- Beck and McKeown (1988) argue that “‘word knowledge is not an all or nothing proposition. Words may be known at different levels’” (as cited in Allen, 1999, p. 6).

- Dale (1965) developed these stages of word knowledge
  - **Stage One:** students have never encountered the word before
  - **Stage Two:** students have seen the word but do not know the definition
  - **Stage Three:** students know the word but rely on context to define it
  - **Stage Four:** students know the word and can use it comfortably

  (Beck et al., 2002).
Vocabulary Knowledge Rating continued

- word consciousness: "an awareness of an interest in words and their meanings…[which] involves both a cognitive and an affective stance towards words” (Graves (2009 p. 7).

- activates prior knowledge about key concepts
- develops a metalinguistic awareness of concepts
- allows students to preview or predict what they will be learning
- works as a formative assessment providing the teacher will valuable information about students’ perceptions and knowledge
<table>
<thead>
<tr>
<th>Vocabulary Word</th>
<th>3 I can use this word and define it</th>
<th>2 I have heard this word, but I can’t use it</th>
<th>1 I don’t know this word. I have never heard it</th>
<th>Definition: What I think this word means</th>
<th>A Symbol that represents this concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inequality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absolute Value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolate</td>
<td></td>
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</tr>
<tr>
<td>Conjunction</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Disjunction</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Sketch</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Vocabulary Cards

- Vocabulary cards can be used for reviews, word sorts, ...
- Vocabulary cards may include:
  - Term
  - Definition in words
  - Example
  - Picture Clue
  - Connection

```
bisect

To divide something into two congruent parts
```
Term: exponent
Describe: The little sized number on a base.
Draw: \[x^5 \quad y^7 \quad z^0 \quad z^4\]

Term: negative exponent
Describe: are illegal, must be moved up or downstairs.
Draw: \[9^{-4} \times 3^{-6} = \frac{1}{5} \times \frac{1}{2}\]
Connect Two

Why use this strategy …

- Students learn vocabulary best by connecting new words to their existing schema. This vocabulary strategy allows them to connect words that they may have slight knowledge of or have never heard of to words they already know.

How to use this strategy …

- After a math chapter or unit, students are given a sheet with words, terms or concepts on the top. Students should choose two of these that connect in their minds and explain the connection.
1. ________________ is connected to ________________ because
_______________________________________________

2. ________________ is connected to ________________ because
_______________________________________________

3. ________________ is connected to ________________ because
_______________________________________________

4. ________________ is connected to ________________ because
_______________________________________________

5. ________________ is connected to ________________ because
_______________________________________________
# Connect Two

## Words/symbols

<table>
<thead>
<tr>
<th>Slope</th>
<th>y-intercept</th>
<th>slope-formula</th>
<th>zero</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard form</td>
<td>m</td>
<td>b</td>
<td>undefined</td>
</tr>
<tr>
<td>x-intercept</td>
<td>rate of change</td>
<td>rise over run</td>
<td>cover-up</td>
</tr>
<tr>
<td>slope-intercept form</td>
<td>horizontal line</td>
<td>vertical line</td>
<td></td>
</tr>
</tbody>
</table>

1. **EXAMPLE:** *Slope* is connected to *rise over run* because you can count the *rise over run* to determine the *slope* of a line.

2. ________________ is connected to ________________ because

   __________________________________________________
   __________________________________________________
   __________________________________________________

3. ________________ is connected to ________________ because

   __________________________________________________
   __________________________________________________
   __________________________________________________
Strong example
Geometry 200
Fitzharris

CONNECT TWO
My two words are: equilateral Δ and equiangular Δ

My connection is: These are connected because they both have 3 congruent parts - one with angles and one with sides.

Weak example
Geometry 200
Fitzharris

CONNECT TWO
My two words are: line and segment

My connection is: A line goes forever in both directions and a segment stops at the endpoints.
Word Sorts and Problem Sorts

What is it?

- An active learning strategy that requires students to think critically about the relationships between words or concepts.
- An activity that requires students to classify.
- A before, during, or after learning activity.
Word Sorts and Problem Sorts

How does it work?

- Select key vocabulary and concepts students will learn.

- Write these words on note cards or small squares of paper.

- Ask the pairs/groups to sort the words into categories based on the relationships between the words. You may include category titles in the sort (a closed word sort), or you can ask students to determine the categories on their own (an open word sort).

- Discuss students’ categories and the words they sorted.
### Geometry Word Sort

<table>
<thead>
<tr>
<th>Segments</th>
<th>Angles</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment Bisector</td>
<td>Angle Bisector</td>
<td>S.S.S.</td>
</tr>
<tr>
<td>Midpoint</td>
<td>Perpendicular</td>
<td>A.S.A.</td>
</tr>
<tr>
<td>Reflexive</td>
<td>Vertical Angles</td>
<td>S.A.S</td>
</tr>
<tr>
<td>CPCTC</td>
<td>Linear Pair</td>
<td>A.A.S</td>
</tr>
<tr>
<td></td>
<td>Supplementary</td>
<td>R.H.L</td>
</tr>
<tr>
<td></td>
<td>Complementary</td>
<td></td>
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<tr>
<td></td>
<td>Reflexive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CPCTC</td>
<td></td>
</tr>
</tbody>
</table>
Graph Triple Match Activity 2
Cut out graphs and equations. Match the graph to the slope-intercept form and standard form of the equations. Then glue the matches onto your grid.

<table>
<thead>
<tr>
<th>GRAPH</th>
<th>SLOPE – INTERCEPT FORM</th>
<th>STANDARD FORM</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Graph" /></td>
<td>$y = \frac{-2}{3}x + 2$</td>
<td>$4x + 3y = 12$</td>
</tr>
</tbody>
</table>

Partners: _______________________________
ABC Brainstorming

What is this strategy ...

- This is a paired discussion strategy that students can use to build background knowledge. This strategy can also be used as a review. Discussion leads to higher-level understanding.
- After filling in the chart, students pair-share and discuss.

How to use this strategy ...

- Before or after a math chapter or unit, students are given a sheet with the alphabet. Students should preview the chapter and fill in the words. Or students would write in words from their word wall then quiz each other on the words.
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>I</td>
<td>J</td>
<td>K</td>
<td>L</td>
<td>M</td>
<td>N</td>
</tr>
<tr>
<td>O</td>
<td>P</td>
<td>Q</td>
<td>R</td>
<td>S</td>
<td>T</td>
<td>U</td>
</tr>
<tr>
<td>V</td>
<td>W</td>
<td>X</td>
<td>Y</td>
<td>Z</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ABC Brainstorming**
Chapter 1:
- angle
- acute
- ray
- right
- obtuse
- segment
- coplanar
- congruent
- degree
- point
- line
- straight
- collinear
- plane

Chapter 2:
- midpoint
- bisect
- segment bisector
- angle bisector
- complementary
- supplementary
- adjacent
- vertical angles
- linear pair
- hypothesis
- conclusion
- conditional
- statement

(Chapter 2 cont.):
- inverse
- Law of Detachment
- Law of Syllogism
- converse
- contraposition

Chapter 3:
- parallel
- perpendicular
- skew
- transversal
- corresponding angles
- same-side interior angles
- alternate interior angles
- alternate exterior angles
- transformation
- translation
- pre-image
- image
- vector

Chapter 4:
- scalene triangle
- isosceles triangle
- acute triangle
- right triangle
- obtuse triangle
- equiangular triangle
- equilateral triangle
- vertex
- opposite

(Chapter 4 cont.):
- Triangle Sum Theorem
- exterior angle
- Exterior Angle Theorem
- Base Angles Theorem
- Converse of Base Angles Theorem
- Equilateral Theorem
- Pythagorean Theorem
- Distance Formula
- Converse of the Pythagorean Theorem
- median
- centroid
- concurrent
- incenter
- perpendicular bisector
- circumcenter
- altitude
- orthocenter

Chapter 5:
- congruence statement
- line of symmetry
- Side-Side-Side Postulate (SSS)
- Side-Angle-Side Postulate (SAS)
- Angle-Side-Angle Postulate (ASA)
- Angle-Angle-Side Postulate (AAS)
- “given”
- Hypotenuse Leg Theorem (HL)
- reflection
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<td></td>
<td>bisect</td>
<td>collinear converse</td>
<td>contrapositive</td>
<td>concurrent</td>
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<tr>
<td>hypotenuse</td>
<td>leg Thm</td>
<td></td>
<td></td>
<td>linear pair</td>
<td>midpoint</td>
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<td>formula</td>
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<td>T</td>
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<tr>
<td>plane</td>
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<td>syllogism</td>
<td>translation</td>
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<td>transversal</td>
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<td>vector vertex</td>
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</table>

What do you need to study??
Math Vocabulary Three-Column Chart

- This is a word sort organizational tool.
- Not every math word will fit into the chart.
- Some words may fit into more than one column.
- This chart will help students understand how math vocabulary words work.

© Adapted from *But I’m Not a Reading Teacher: Strategies for Literacy Instruction in the Content Areas* by Amy Benjamin p. 51.
<table>
<thead>
<tr>
<th>Ordinary English Words That Have Specific Math Definitions</th>
<th>Words Having a Prefix</th>
<th>Math Phrases That Act As a Single Word</th>
</tr>
</thead>
</table>

Words That Do Not Fit in One of the Above Categories
Math Notes and Graphic Organizers

What is it?
- A graphic representation of math concepts for student use.

How does it work?
- Assess the material that needs to be presented.
- Determine what type of graphic representation, concept map, or foldable best fits the content.
# Math Notes

## Background Knowledge I Need to Solve Equations

- **Distribute:**
- **Combine Like Terms:**
- **Inverse Operations:**

## One Step Equations

## Keys to Solving

- **Equations with Variables on One Side**
- **Equations with Variables on Both Sides**
Vocabulary Ultimate Challenge

- This is a review game to use at the end of a chapter, at the end of a unit, or the review for the semester final.
- Students are placed in teams of 2.
- Create sets of vocabulary challenges – Level 1, Level 2, etc.
- When students think they have all items in the set correct, they come up to get checked.
- If all are correct, they go on to the next challenge. If not, they make corrections and get it rechecked.
Ultimate Challenge Chapter 2

Directions: Complete each problem with your partner. When you have finished the problem, come up to me to get it checked – if it is correct I will initial the problem and you can move onto the next challenge. If it isn't, you will need to go back to your seats to correct it. The first one to correctly complete all challenges is the ultimate challenge winner!!

Challenge #1:
D is the midpoint of ST. ST = 52. Draw a picture and solve for SD and DT.

Answer: SD = 26 and DT = 26

Challenge #2:
Find the midpoint of points A (-4, 2) and B (-8, -3).

Answer: (-6, -\frac{1}{2})

Challenge #3:
g\mid \angle FGH. Find the value of x.

Answer: 8

Teacher Check: [Signature]
Content Station Review

- This is a review game to use at the end of a chapter, at the end of a unit, or the review for the semester final.
- Student are places in teams of 3.
- Create approximately 10 stations for students to rotate through.
- Divide the period into time slots for each station with time to explain each station and to close the review lesson.
- Can also be used for vocabulary reviews.
Math Cube

- This is in place of a traditional math worksheet.
- This is used to practice math concepts actively and cooperatively.
Cube A

1. Multiply
   5(3x - 7)

2. Multiply
   -3(2x + 11)

3. Multiply
   \( \frac{2}{3}(6x - 15) \)

4. Multiply
   \( -\frac{5}{2}(8x - 10) \)

Cube B

1. Divide
   \( \frac{10x + 30}{5} \)

2. Divide
   \( \frac{24x - 18}{-6} \)

3. Divide
   \( \frac{15x^2 - 9x - 3}{-3} \)

4. Divide
   \( \frac{x^2 + 2x - 14}{7} \)
Math Resources

- *Big Book of Math: For Middle School and High School ~ Read, Write, Research* by Dinah Zike (foldables)
- *But I’m Not A Reading Teacher: Strategies for Literacy Instruction in the Content Areas* by Amy Benjamin
- *Literacy Strategies for Improving Mathematics Instruction* by Joan M. Kenney
- *Mathematics: Reading Strategies* by Globe Fearon
- *Writing Strategies for Mathematics* by Trisha Brummer and Sarah Kartchner Clark
- [http://tinyurl.com/beyondcalcs](http://tinyurl.com/beyondcalcs)
Math Resources

- *Step-by-Step Model Drawing: Solving Word Problems the Singapore Way* by Char Forsten
- Wikki ~ wikkispaces.com – literacy4mathandphysics
Objective: To increase student understanding of science concepts and abilities to problem solve.
Physics Literacy Coaching

- Second year working with physics teachers
- Working with two physics teachers
- Focusing on vocabulary and problem solving
- Meet with the physics teachers weekly
- Observe, guest teach, co-teach, co-plan
Physics Teachers

- **Vocabulary**
  - Word Walls
  - Word Sorts

- **Problem Solving**
  - Problem Sorts
  - Making Connections Guide
  - Problem Solving Notes
  - Mind Maps
### HOW TO SPEAK PHYSICS: WORD WALL

<table>
<thead>
<tr>
<th>Words to describe motion</th>
<th>Words to describe graphs</th>
<th>Words to describe quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Object (&quot;It&quot;)</td>
<td>• Straight line</td>
<td>• Positive</td>
</tr>
<tr>
<td>• Starts</td>
<td>• Horizontal line</td>
<td>• Negative</td>
</tr>
<tr>
<td>• Stops</td>
<td>• Parabola</td>
<td>• Zero</td>
</tr>
<tr>
<td>• Moving</td>
<td>• Area</td>
<td>• Constant</td>
</tr>
<tr>
<td>• Going</td>
<td>• Slope</td>
<td>• Increasing</td>
</tr>
<tr>
<td>• Right</td>
<td>• Y-intercept</td>
<td>• Decreasing</td>
</tr>
<tr>
<td>• Left</td>
<td>• Tangent line</td>
<td>• Initial</td>
</tr>
<tr>
<td>• Up</td>
<td>• Axes</td>
<td>• Instantaneous</td>
</tr>
<tr>
<td>• Down</td>
<td>• Origin</td>
<td>• Average</td>
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<td>• Fast</td>
<td>• Steep</td>
<td>• Greater than</td>
</tr>
<tr>
<td>• Slow</td>
<td></td>
<td>• Less than</td>
</tr>
<tr>
<td>• Speeding up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Slowing down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• From rest/at rest</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How to Speak Physics Word Sort

<table>
<thead>
<tr>
<th>Words to describe motion</th>
<th>Words to describe graphs</th>
<th>Words to describe quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>It</td>
<td>Slow</td>
<td>Positive</td>
</tr>
<tr>
<td>Starts</td>
<td>Straight line</td>
<td>Negative</td>
</tr>
<tr>
<td>Stops</td>
<td>Horizontal line</td>
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</tr>
<tr>
<td>Moving</td>
<td>Area</td>
<td>Constant</td>
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</table>

<table>
<thead>
<tr>
<th>Going</th>
<th>Slope</th>
<th>Increasing</th>
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</thead>
<tbody>
<tr>
<td>Right</td>
<td>Y-Intercept</td>
<td>Decreasing</td>
</tr>
<tr>
<td>Left</td>
<td>Velocity</td>
<td>Position</td>
</tr>
<tr>
<td>Fast</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Problems with Problem Solving

• Students…
  • can answer a problem from a memory cue, but they can’t describe how they got from point A to point B
  • don’t make connections
  • don’t ask themselves the right questions
  • freeze and they don’t make any attempts because they are afraid of failure
  • want to follow a rigid set of steps
<table>
<thead>
<tr>
<th>Reading Complex Text</th>
<th>Problem Solving</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Determine which details in the text are important and</td>
<td>• Determine your knowns, unknowns,</td>
</tr>
<tr>
<td>which are unimportant</td>
<td>unnecessary or redundant information</td>
</tr>
<tr>
<td>• Monitor their comprehension and read strategically</td>
<td>• Recognize when something is working</td>
</tr>
<tr>
<td>when they don’t understand</td>
<td>and when it isn’t. Try another tool</td>
</tr>
<tr>
<td>• Access prior knowledge in order to fully understand</td>
<td>or strategy when stuck.</td>
</tr>
<tr>
<td>the text.</td>
<td>• Access prior knowledge in order to</td>
</tr>
<tr>
<td>• Make connections to other texts, to self, and to the</td>
<td>understand which steps to take.</td>
</tr>
<tr>
<td>world</td>
<td>• Make connections to other problems,</td>
</tr>
<tr>
<td>• Ask questions in order to analyze and dig deeper into</td>
<td>demonstrations, and other experiences</td>
</tr>
<tr>
<td>the text.</td>
<td>• Ask questions to lead to the next</td>
</tr>
<tr>
<td>• Make inferences</td>
<td>step</td>
</tr>
<tr>
<td>• Synthesize information</td>
<td>• Make inferences based on the info</td>
</tr>
<tr>
<td></td>
<td>you have.</td>
</tr>
<tr>
<td></td>
<td>• Synthesize different pieces of info</td>
</tr>
</tbody>
</table>
Our approach to solving this problem
# Problem Solving Guide

## Making Connections in Problem Solving

<table>
<thead>
<tr>
<th>Question</th>
<th>List:</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the problem? Restate it in your own words</td>
<td></td>
</tr>
<tr>
<td>What tools will help me solve/visualize this problem?</td>
<td></td>
</tr>
<tr>
<td>What vocabulary words do I need to know in order to understand this problem?</td>
<td></td>
</tr>
<tr>
<td>Where have I seen the elements in this problem before (make connections to other problems, labs, demos, readings, etc.)?</td>
<td>Draw out a rough sketch of the answer/graph/idea from the prior problem:</td>
</tr>
</tbody>
</table>
# Problem Solving Guide

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
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<td>What is the question? Restate it in your own words</td>
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</tr>
<tr>
<td>Where else have I seen the structure and features of this problem?</td>
<td>(make connections to other problems, labs, demos, readings, etc.)?</td>
</tr>
<tr>
<td>What are the differences?</td>
<td></td>
</tr>
<tr>
<td>What mathematical models/graphs can I use to solve this problem?</td>
<td></td>
</tr>
<tr>
<td>What other tools can I use that may help me solve this problem?</td>
<td></td>
</tr>
</tbody>
</table>
Word Problem Grids

- This is a way to actively take information in a word problem and place it in a “grid”.
- Instead of students just writing down what the teacher is saying mathematically, they have a specific format to organize the information within.
- The teacher models how to do the word problem and use the grid for organization.
- Students work in pairs then individually to practice word problems.
- Eventually they solve these problems without the aid of the grid.
You are making pies to sell at a fundraiser. It costs $4 to make each pie, plus a one-time cost of $45 for a pastry blender and a rolling pin. You plan to sell the pies for $7 each. Find the number of pies you need to sell to break even.

\[ \text{Costs} \times \text{Number of Pies} = \text{Sells} \]

Variable: \( \text{Number of Pies} \)

Costs: \( \$4 \times \text{Number of Pies} \) \quad Sells: \( \$7 \times \text{Number of Pies} \)

\[ \$4 \times \text{Number of Pies} = \$7 \times \text{Number of Pies} \]

\[ \text{Number of Pies} = \frac{\text{Sells}}{\text{Costs}} \]

\[ \text{Number of Pies} = \frac{\$7}{\$4} \]

\[ \text{Number of Pies} = 1.75 \]

You need to sell 2 pies to break even.
Define the variables.

Sentence_____  \( x = \) ___________  \( y = \) ___________

<table>
<thead>
<tr>
<th>Equation 1</th>
<th>Equation 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic____________</td>
<td>Topic____________</td>
</tr>
<tr>
<td>Sentence_____</td>
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</tr>
<tr>
<td>Equation_________</td>
<td>Equation_________</td>
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</tbody>
</table>

Substitution or Elimination?  Solve the system for \( x \) and \( y \).

The problem is asking for ____________________________

The answer is_____________________

Is this a reasonable solution?  YES  NO
Learning Objectives:

At the end of the session, participants are able to

- understand the purpose of Downers Grove South’s Literacy Liaison Model.
- understand how the Literacy Liaison Model benefits students.
- understand how active learning strategies increase student understanding of math and science concepts.
- gain practical examples of resources and strategies to use in the math and science content areas.
WHAT’S LITERACY GOT TO DO WITH IT?

Literacy in the Math and Science Classroom

Thank you 😊