

## Growth mindset and the importance of attitude

## Have a plan of attack

1. Use graphic organizers
2. Ready your resources
  - What does your child use to help him/her solve word problems?
    - Notebook
    - Anchor chart
    - Personal folder
    - Other?

### Concrete

Uses hands-on materials/manipulatives to show the problem

### Pictorial

Uses visual/picture representations

### Abstract

Uses an algorithm

## An example of CPA with addition

## Problem solving in the real world






- Operations
- Fractions
- Time and Elapsed Time
- Geometry
- Decimals and Percent
- Money

## What other questions do you have?

# CLAY POTTERY



Lizzie and Zela are interested in making pottery. The following chart shows how much clay is needed to make different projects.

Project	Pounds of Clay Needed
 Small Plate	$2\frac{1}{2}$
 Small Bowl	$1\frac{1}{2}$
 Large Bowl	$3\frac{1}{4}$
 Dinner Plate	$4\frac{1}{2}$
 Mug	$\frac{3}{4}$

Lizzie has 12 pounds of clay and wants to use all of it. She does not need to make all of the projects, and may make more than one of any project.

Describe a plan for Lizzie to use 12 pounds of clay making projects from the chart.

Show how you know she will use **exactly** 12 pounds of clay with this plan.

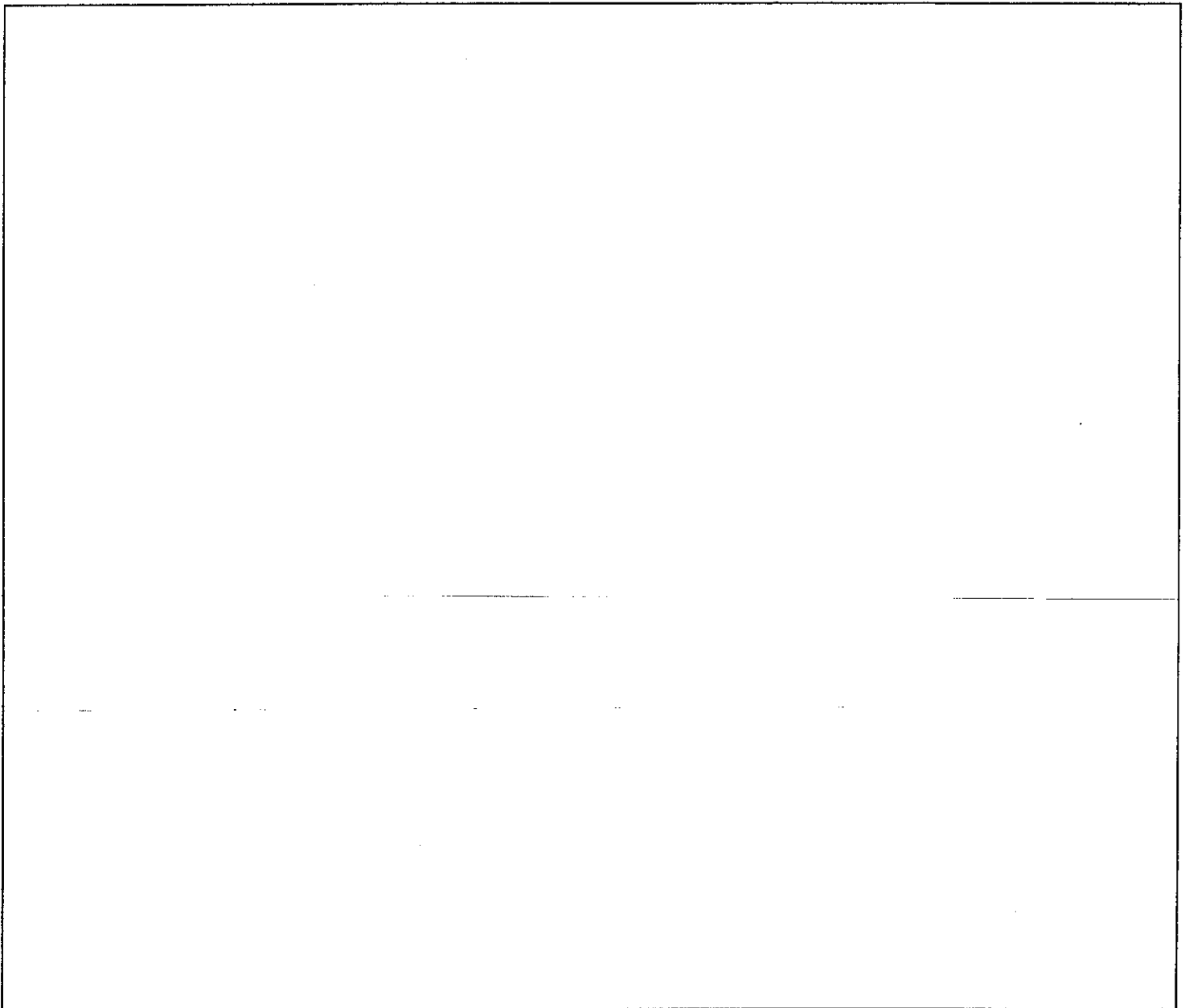
Zela is making a plan to use her 12 pounds of clay. She still wants to make 6 mugs. She also wants to make 6 small bowls.

Lizzie says: "12 pounds is not enough to make 6 mugs and 6 small bowls. I know because I did the math."

Zela says: "It is enough if I make the bowls smaller!"

Make a plan for Zela to use no more than 12 pounds of clay to make 6 mugs and 6 bowls that are **smaller** than the bowls in the chart. Zela does not need to use **exactly** 12 pounds, but she would like to use most of the clay.

In the plan, state how much clay she should use for each of her smaller bowls. Her bowls should all be the same size.

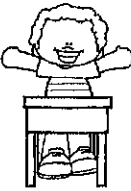

A large empty rectangular box with a black border, intended for the student to write their plan for Zela's clay project. The box is completely blank and occupies the lower half of the page.

Name \_\_\_\_\_

## GROWTH MINDSET VS. FIXED MINDSET

Notes for the teacher:

You can use the student sheet to have your students take notes on growth and fixed mindset in class, or you can give them the chart to record language they hear in each category at home, in the classroom, on the playground, etc. The examples given are just a small sample – feel free to adapt the language for your students.

<b>GROWTH MINDSET</b>	<b>FIXED MINDSET</b>
<ul style="list-style-type: none"><li>• This is hard for me right now</li><li>• I don't get this, YET</li><li>• I can't do this, YET</li><li>• I don't know how to do this, YET</li><li>• What am I missing?</li><li>• Mistakes help me improve</li><li>• My brain will do some heavy lifting</li><li>• This is going to take some time</li><li>• I can take small steps towards my goal</li><li>• I am inspired by the success of others</li><li>• I like to try new things</li><li>• Feedback helps me improve</li><li>• My effort and my attitude determine my abilities</li><li>• Failure is an opportunity</li><li>• I failed. I'll learn from it and move on.</li><li>• I like a challenge!</li></ul> 	<ul style="list-style-type: none"><li>• I'm not good at _____</li><li>• I can't do this</li><li>• I'm not smart</li><li>• I'm not athletic</li><li>• My mom/dad wasn't good at _____ and I'm not either</li><li>• What's the point in trying?</li><li>• I don't like things that are challenging</li><li>• This is too hard for me</li><li>• I give up</li><li>• Will this make me look intelligent?</li><li>• Will this make me look dumb?</li></ul> 

# Break It Down

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Class: \_\_\_\_\_ Teacher: \_\_\_\_\_

A word problem can be easier to solve when it's broken down into pieces. This chart can help.

1. Write down your word problem in the top box. You may want to highlight numbers and key words.
2. In the second box, write down what you know from the information provided in the problem.
3. In the bottom left box, write what you need to find and how to find it.
4. In the bottom right boxes, solve and check your answer.

Write your word problem.

What do you know?

What do you need to find?  
How will you find it?

Solve the problem.

Check your answer.

# The Frayer Model

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Class: \_\_\_\_\_ Teacher: \_\_\_\_\_

The Frayer Model can help you learn new words or concepts in math.

You can use this version of the model to break down a word or concept.

1. Write the word or concept in the middle box.
2. In the outer four boxes, explain the word or concept in four different ways.

<p>Write the definition.</p>	<p>Use it in a sentence or in a word problem.</p>
<p>Word / Concept</p>	
<p>Draw a picture or give an example.</p>	<p>Describe it in your own words.</p>

Understood

# Break It Down

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4. In the bottom right boxes, solve and check your answer.

Write your word problem.

Alex has a **\$100 gift card** he can use to buy video games. He wants **two games** that cost **\$25.95 each**. He wants another game that costs **\$45.00**. Does he have enough money on his gift card to buy **all three games**?

What do you know?

Gift card = \$100  
 2 games = \$25.95 each  
 1 additional game = \$45.00  
 He wants to buy all three games

What do you need to find?  
 How will you find it?

Cost of all three games

$2 \times \$25.95$  } Add for  
 $1 \times \$45.00$  } total

Is it enough?

$\$100 - \text{Total}$   
 = Difference

Solve the problem.

$$\begin{array}{r}
 \overset{1}{2}5.\overset{1}{9}\overset{1}{5} \\
 \times \quad 2 \\
 \hline
 51.90
 \end{array}$$

$$\begin{array}{r}
 51.90 \\
 + 45.00 \\
 \hline
 \$96.90
 \end{array}$$

Yes, it's enough.

Check your answer.

$$\$100.00 > \$96.90$$





# Break It Down

A word problem can be easier to solve when it's broken down into pieces. This chart can help.

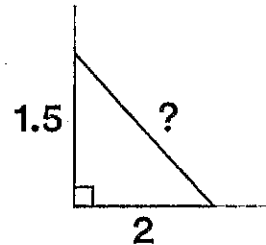
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4. In the bottom right boxes; solve and check your answer.

Write your word problem.

Sara wants to build a **triangle-shaped** box to fit in the **corner of a square** room. The sides of the box that touch the wall are **1.5 ft.** and **2 ft.** long. How long is the third side?

What do you know?

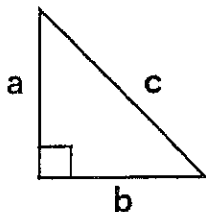
- The box is a right triangle.
- The two legs are 1.5 ft. and 2 ft.
- The hypotenuse (third leg) is missing.



What do you need to find?  
How will you find it?

- The length of the hypotenuse
- Use the Pythagorean theorem

$$a^2 + b^2 = c^2$$



Solve the problem.

$$\begin{aligned} a^2 + b^2 &= c^2 \\ \downarrow \quad \downarrow & \quad \downarrow \\ 1.5^2 + 2^2 &= c^2 \\ \downarrow \quad \downarrow & \quad \downarrow \\ 2.25 + 4 &= c^2 \\ \underbrace{\quad \quad} & \quad \downarrow \\ 6.25 &= c^2 \end{aligned}$$

$$\begin{aligned} \sqrt{6.25} &= \sqrt{c^2} \\ \downarrow & \\ 2.5 &= c \end{aligned}$$

Check your answer.

$$\begin{aligned} 1.5^2 + 2^2 &= 2.5^2 \\ \downarrow \quad \downarrow & \quad \downarrow \\ 2.25 + 4 &= 6.25 \\ \underbrace{\quad \quad} & \quad \downarrow \\ 6.25 &= 6.25 \checkmark \end{aligned}$$


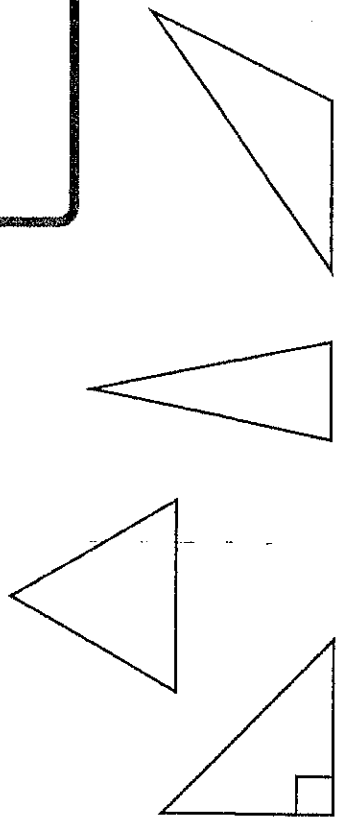
Name: \_\_\_\_\_ Date: \_\_\_\_\_

Class: **Math** Teacher: \_\_\_\_\_

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<p>Write the definition.</p> <p><b>A triangle is a polygon with 3 straight sides and 3 angles.</b></p>	<p>Use it in a sentence or in a word problem.</p> <p><b>You can make a triangle by folding a square piece of paper in half by opposite corners.</b></p> 
<p>Draw a picture or give an example.</p> 	<p>Word / Concept</p> <p><b>Triangle</b></p> <p>Describe it in your own words.</p> <p><b>A triangle is when you connect 3 straight lines to make a closed shape.</b></p>

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