



# From A to Z with Math Vocabulary

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Link to presentation: <http://bit.ly/azmathvocab>

Please read the text  
and answer the  
following question:



1. What is marfolamine?
2. Where was marfolamine discovered?
3. How is marfolamine chemovated?
4. Why is marfolamine important to us?

Marfolamine is a gadabolic cupertance essential for our jamination. Marfolamine was discovered in a zackadago. It was chemovated from zackadago by ligitixing the pogites and then bollyswagging it. Marfolamine will eventually micronate our gladivones so that we can homitote our tonsipows more demicly.

# Vocabulary Teaching

Why is vocabulary instruction so important?



Good vocabulary instruction helps children gain **ownership** of words, instead of just learning them well enough to pass a test.

Good vocabulary instruction provides **multiple opportunities for exposure** through rich and varied activities to provide meaningful understanding of words.

(Stahl & Kapinus, 2001)



# 5 Components for Scaffolding Vocabulary

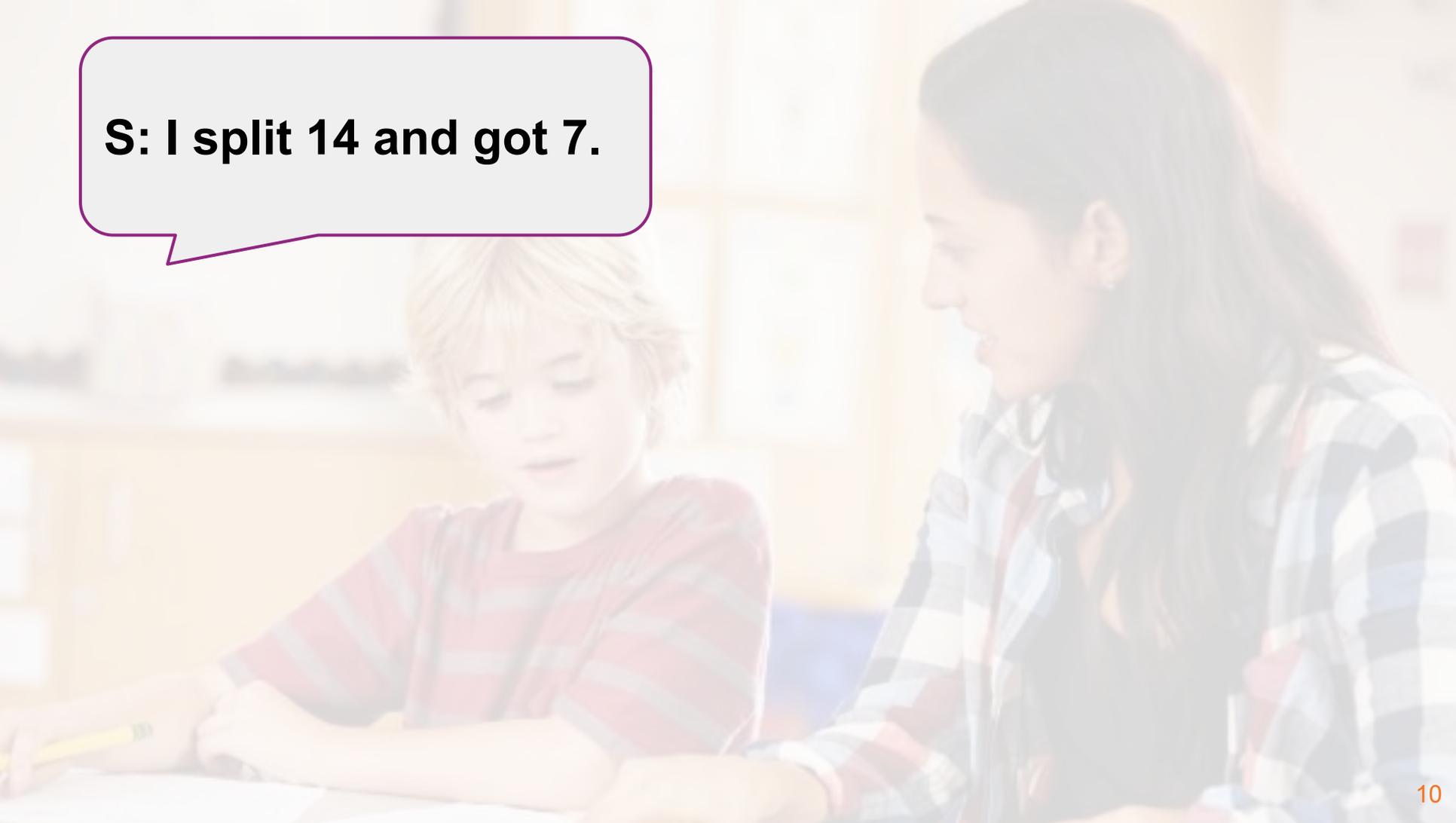
1. Modeling
2. Discourse
3. Multiple Representations
4. Writing
5. Assessment

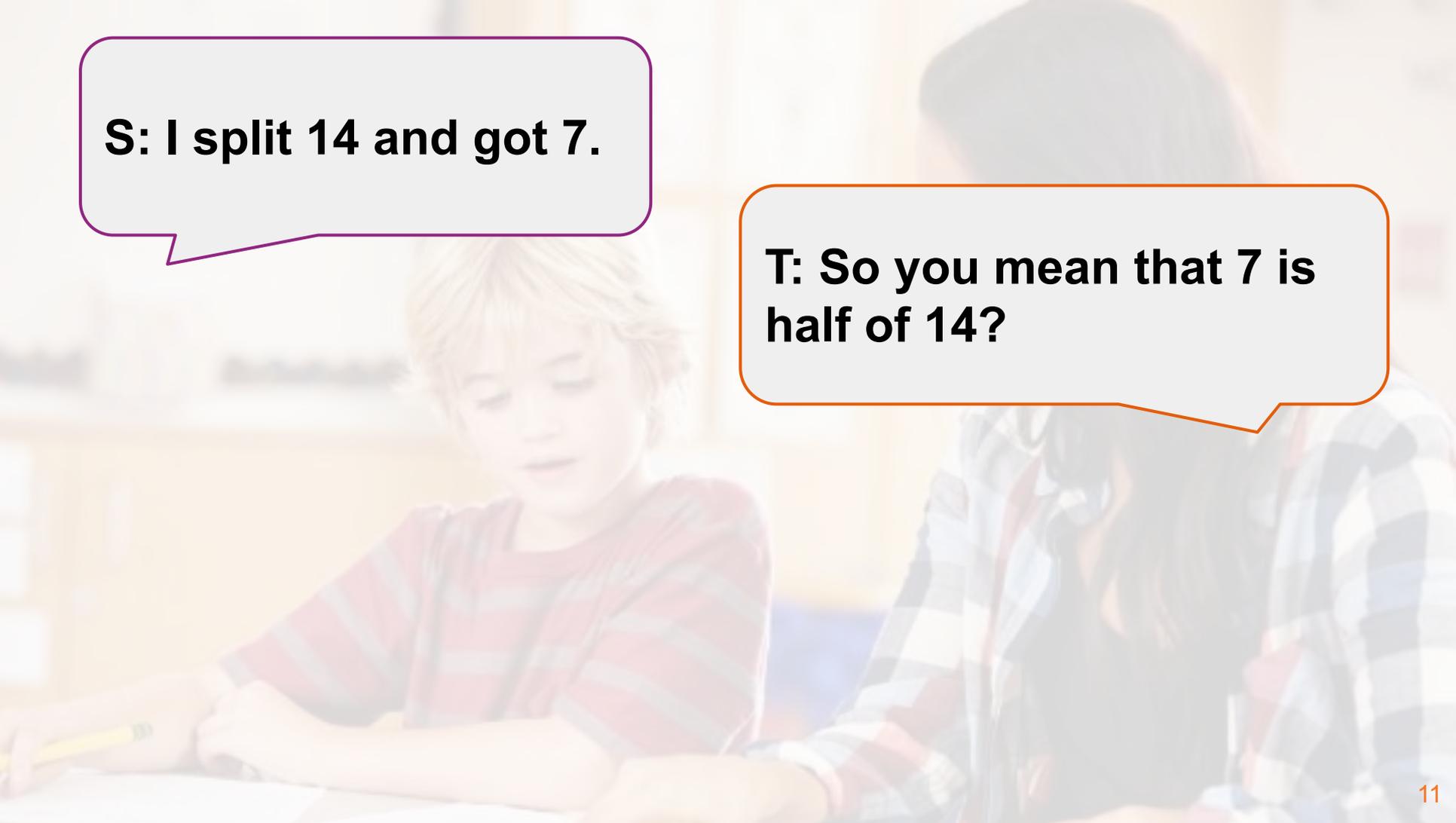
# 5 Components for Scaffolding Vocabulary

1. Modeling - Uses the targeted vocabulary within a meaningful context, often “revoicing” the student’s informal language with the formal mathematical terminology.



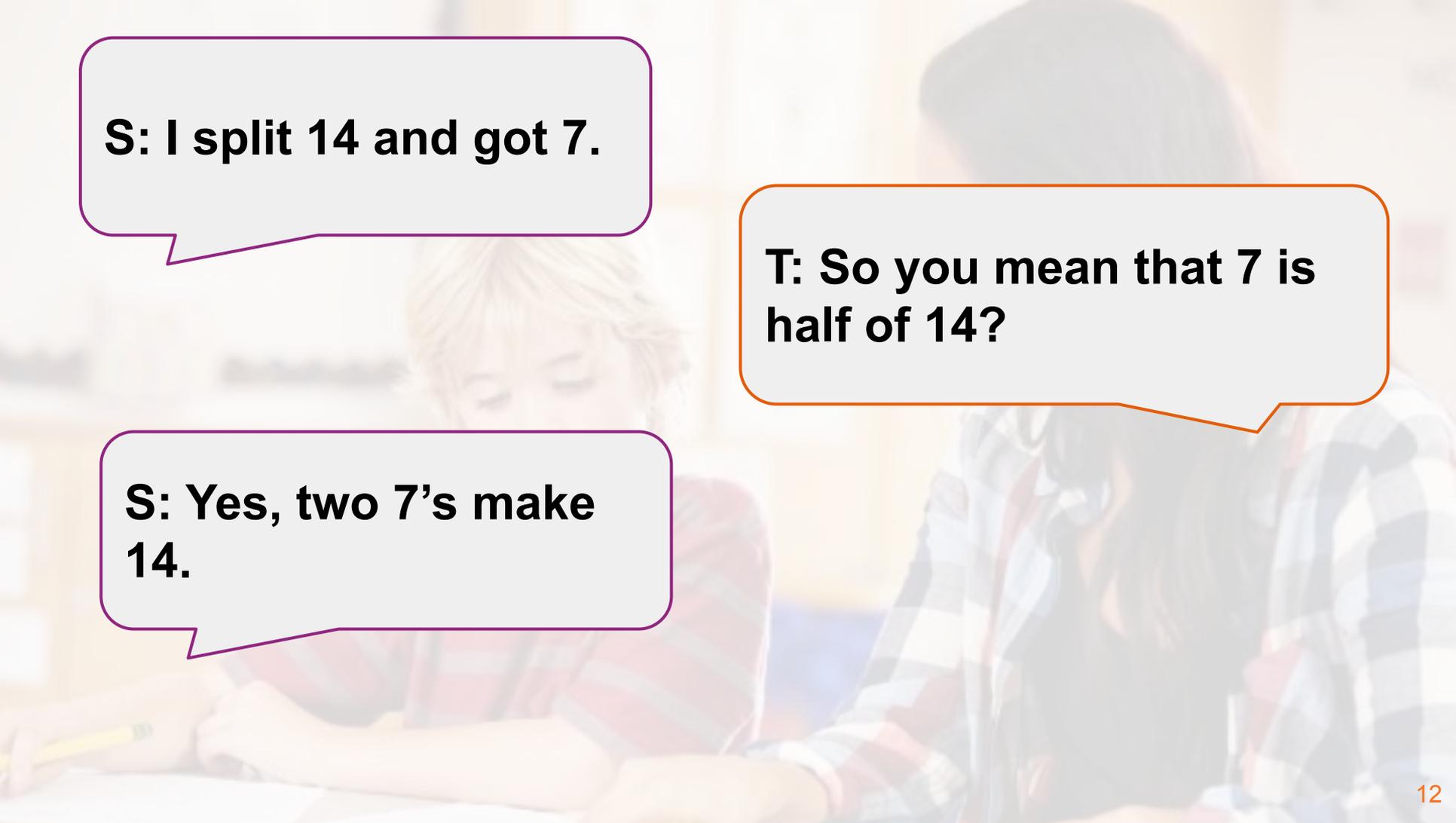
**S: I split 14 and got 7.**





**S: I split 14 and got 7.**

**T: So you mean that 7 is  
half of 14?**

A background image showing two students sitting at a desk. The student on the left is a young woman with blonde hair, wearing a red and white striped shirt, looking down at a notebook. The student on the right is a young man with dark hair, wearing a blue and white plaid shirt, also looking down. The scene is brightly lit, suggesting a classroom or study area.

**S: I split 14 and got 7.**

**T: So you mean that 7 is  
half of 14?**

**S: Yes, two 7's make  
14.**

**S: I split 14 and got 7.**

**T: So you mean that 7 is half of 14?**

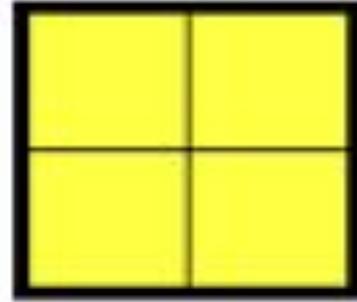
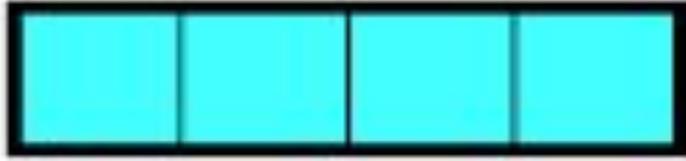
**S: Yes, two 7's make 14.**

**T: Yes, you can divide 14 by 2 to get a quotient of 7.**

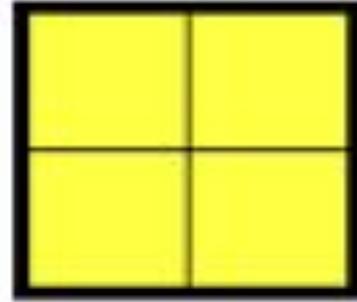
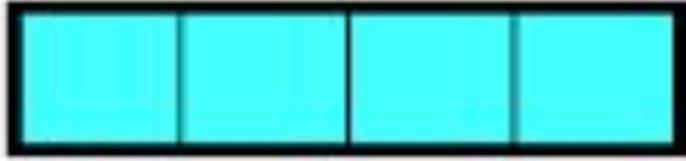
# 5 Components for Scaffolding Vocabulary

2. Discourse - Teacher orchestrates activities and poses questions that elicit student talk about mathematical ideas as they arise within the course of the lesson.



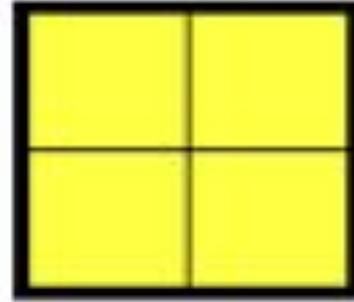
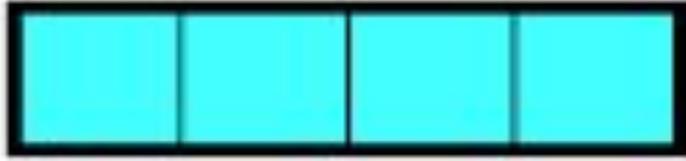


Are these two pentominoes congruent?



Are these two pentominoes congruent?

How do you know?



Are these two pentominoes congruent?

How do you know?

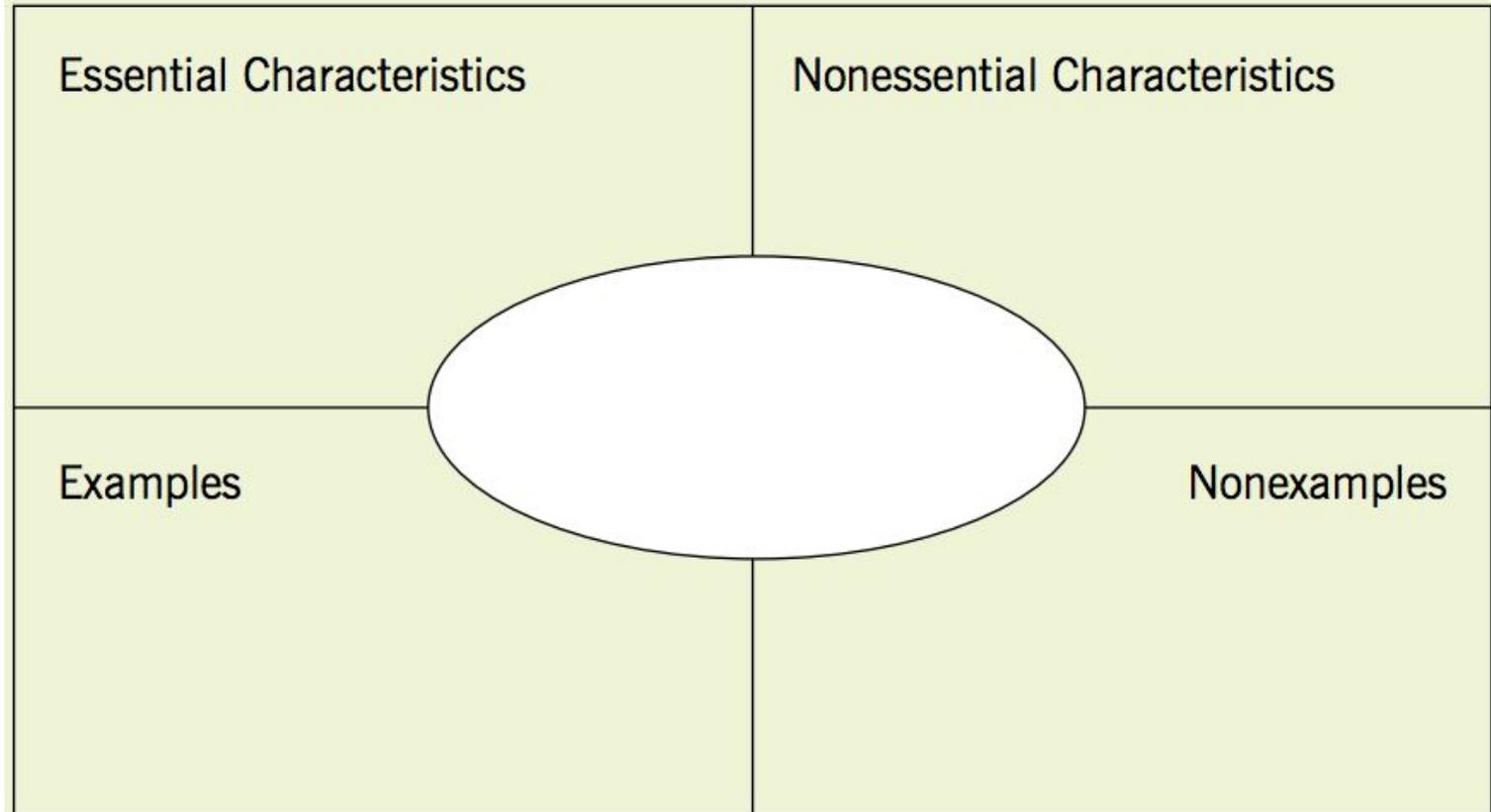
What do I mean by congruent?

Take 5 minutes and talk with your partner.

# 5 Components for Scaffolding Vocabulary

3. Multiple Representations - teacher uses various graphic organizers and displays to reinforce targeted vocabulary.

# Frayer Model



# 4 Square

|            |                |
|------------|----------------|
| Word       | Lightbulb Word |
| Definition | Picture        |

# Feature Analysis

|       |               | Features |                          |                         |                |                          |                         |
|-------|---------------|----------|--------------------------|-------------------------|----------------|--------------------------|-------------------------|
|       |               | 4 Sides  | Opposite Sides Congruent | Opposite Sides Parallel | 4 Right Angles | Adjacent Sides Congruent | Diagonals Are Congruent |
| Terms | Quadrilateral |          |                          |                         |                |                          |                         |
|       | Square        |          |                          |                         |                |                          |                         |
|       | Rectangle     |          |                          |                         |                |                          |                         |
|       | Rhombus       |          |                          |                         |                |                          |                         |
|       | Kite          |          |                          |                         |                |                          |                         |
|       | Trapezoid     |          |                          |                         |                |                          |                         |

# 5 Components for Scaffolding Vocabulary

4. Writing - Students use the targeted vocabulary to reflect on and organize their thoughts around related mathematical ideas.

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- **Journals**
- **Justification of solutions**
- **Strategies**

# 5 Components for Scaffolding Vocabulary

5. Assessment - Teacher uses informal observation and formal assessment tools to determine the depth to which the student understands and explains his/her understanding using the targeted vocabulary.

# Here's a problem...

Does the expression below show a way to represent the quotient of  $586 \div 25$ ?

# Here's a problem...

Circle Your Choice

Explain why you chose Yes or No

**23 r 11**

Is this a way to represent the quotient  **$586 \div 25$** ?

Yes No

**23  $\frac{11}{23}$**

Is this a way to represent the quotient  **$586 \div 25$** ?

Yes No

# Here's a problem...

Circle Your Choice

Explain why you chose Yes or No

**23 r 11**

Is this a way to represent the quotient  **$586 \div 25$** ?

Yes No

Yes because  
if you divide  
that's the answer  
you get.

$$\begin{array}{r} 23 \\ 25 \overline{) 586} \\ \underline{50} \phantom{0} \\ 86 \\ \underline{75} \\ 11 \end{array}$$
$$\begin{array}{r} \phantom{0} 25 \\ \times 23 \\ \hline \phantom{0} 75 \\ 500 \\ \hline 575 \end{array}$$

**23  $\frac{11}{23}$**

Is this a way to represent the quotient  **$586 \div 25$** ?

Yes No

# Here's a problem...

Circle Your Choice

Explain why you chose Yes or No

**23 r 11**

Is this a way to represent the quotient  **$586 \div 25$** ?

Yes No

Yes because if you divide 25 into 586 that's the answer you get.

$$\begin{array}{r} 23 \\ 25 \overline{) 586} \\ \underline{50} \phantom{0} \\ 86 \\ \underline{75} \\ 11 \end{array}$$
$$\begin{array}{r} \times 25 \\ 2 \\ \hline 50 \\ \times 25 \\ 3 \\ \hline 75 \end{array}$$

**$23 \frac{11}{23}$**

Is this a way to represent the quotient  **$586 \div 25$** ?

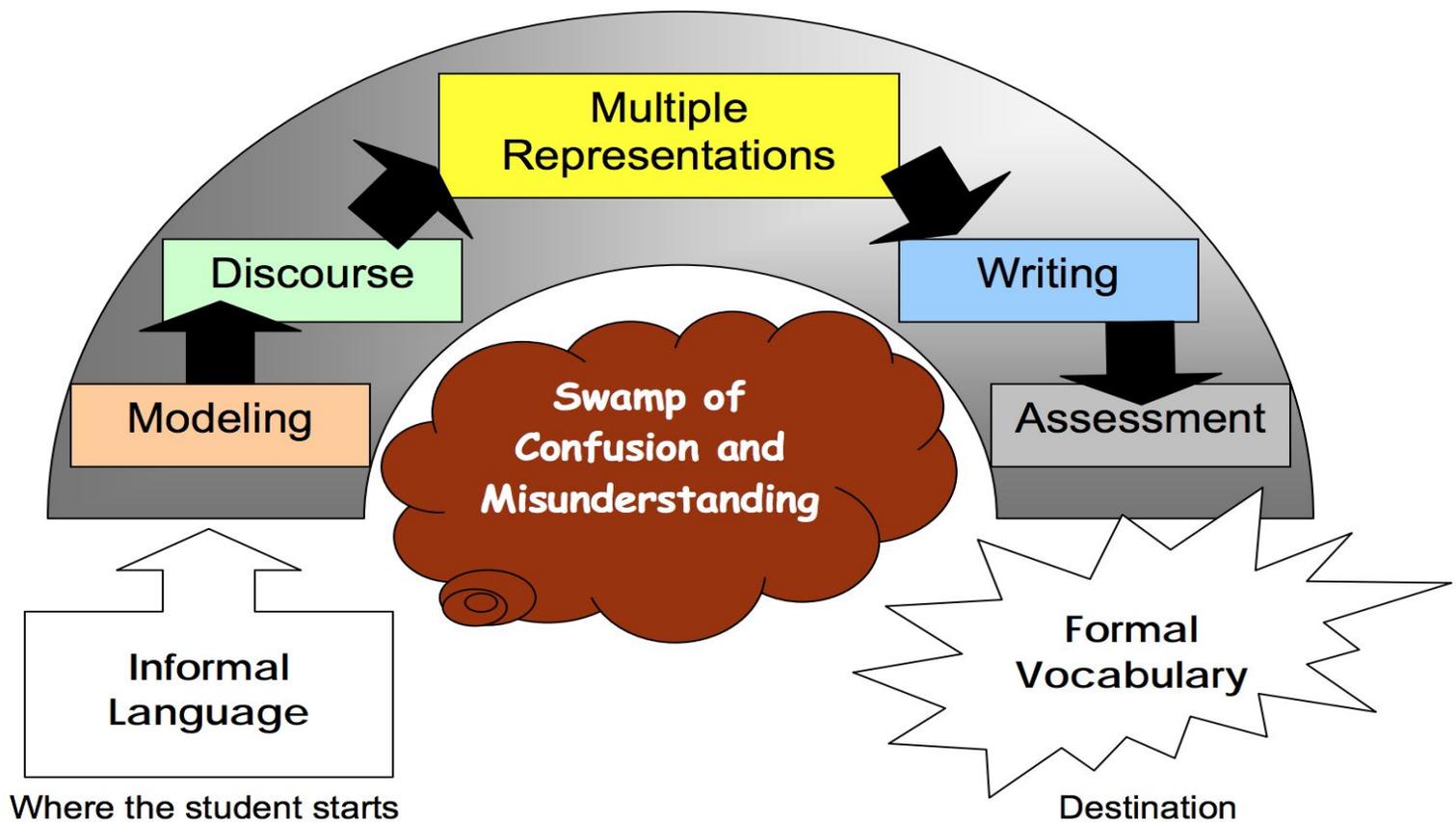
Yes No

Yes because in a fraction the smaller number goes on top and  $\frac{11}{23}$  11 is smaller than 23.



# Mathematics

|   |   |   |
|---|---|---|
|   | <b><u>Grade-Level Mathematics Actions and Processes</u></b> | Descriptions of the Mathematics Actions and Processes provide a sense of what students are doing as they develop into mathematically literate students. |
| <b><a href="http://www.okmathframework.pbworks.com">www.okmathframework.pbworks.com</a></b> |   |   |
|   | <b><u>Progression (v2)</u></b>                              | experience that engages in meaningful, connected mathematics.   |
|   | <b><u>Objective Analysis</u></b>                            | Analysis for each grade-level objective is provided in a manner to support deep understanding for the teacher.  |



**\*\*Note that these 5 components for scaffolding formal mathematical vocabulary are not necessarily sequential. Instead, they are recursive and ongoing.**

Move from teaching about math ideas to exploring, examining, and using math ideas to explain **HOW** and **WHY** math occurs in the real world.

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session.

It should take you no more  
than 1-2 minutes!

Thank you!

