High-Quality Tier 1 Instruction

Elementary (K-5)

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Say hello.

Describe your role as an educator and the mathematics you support.

Schedule for This Year

September 19	Mathematics Language and Fluency
October 17	**High-Quality Tier 1**
December 5	Leveraging Word Problems – Part 1
January 26	Leveraging Word Problems – Part 2
February 16	High-Quality Mathematics Assessment
March 16	High-Quality Supports in Mathematics – Putting It Together

Instructional Platform

INSTRUCTIONAL DELIVERY

Explicit instruction

Precise language

Multiple representations

INSTRUCTIONAL STRATEGIES

Fluency building

Problem solving instruction

Explicit Instruction

MODELING

Step-by-step explanation

Planned examples

PRACTICE

Guided practice

Independent practice

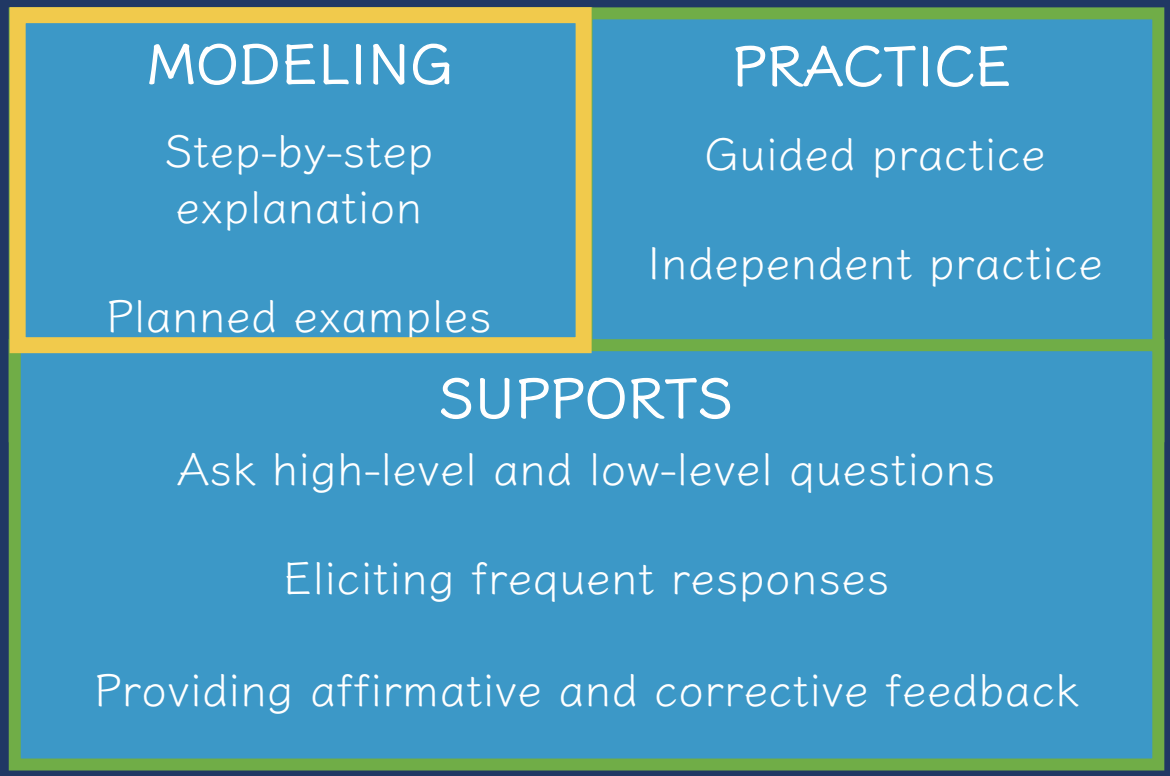
SUPPORTS

Ask high-level and low-level questions

Eliciting frequent responses

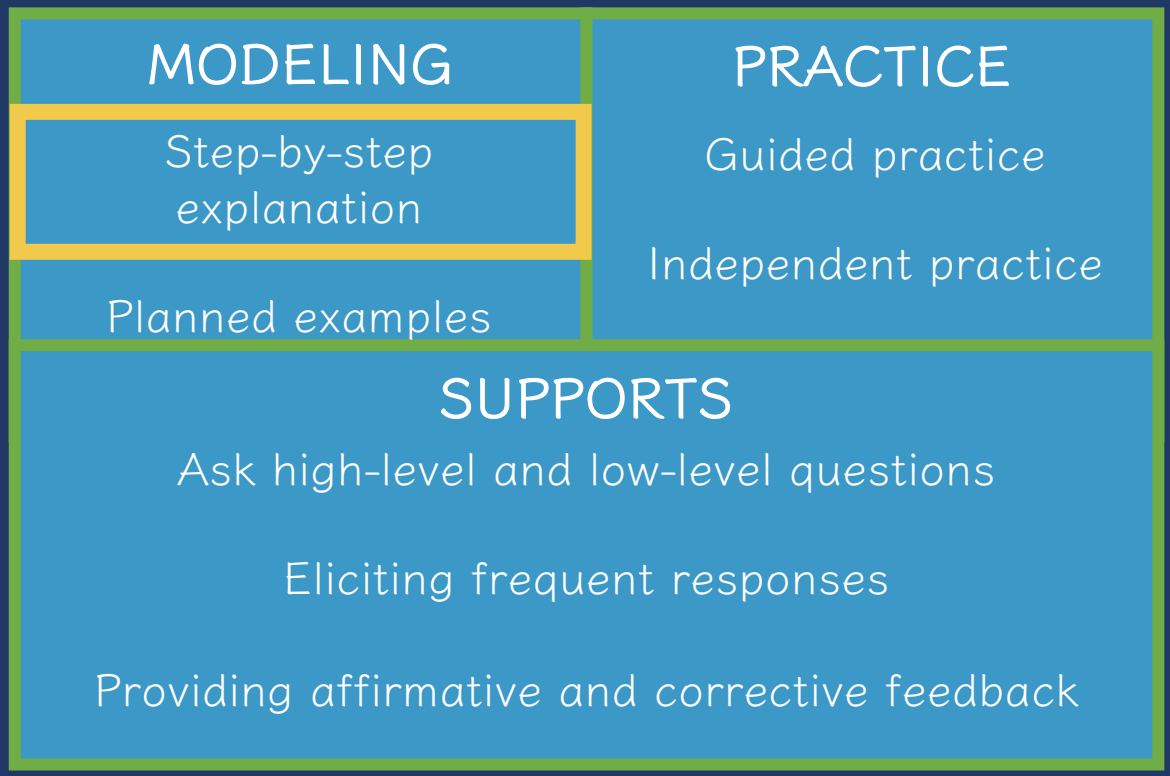
Providing affirmative and corrective feedback

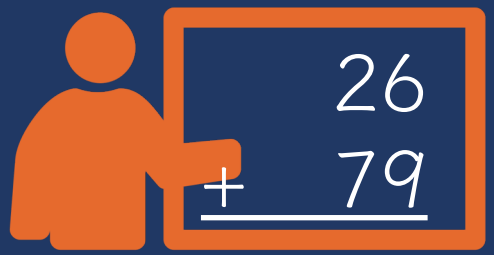
Modeling is a dialogue between the teacher and students.



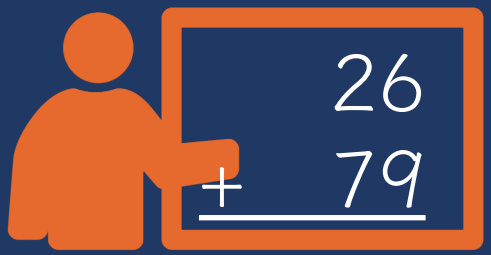
Modeling includes a step-by-step explanation of how to do a math problem.

A teacher may do 1 modeled problem or several.





"Today, we are learning about addition. This is important because sometimes you have different amounts – like money – and you want to know how much money you have altogether."



"Let's solve this problem. What's the problem?"

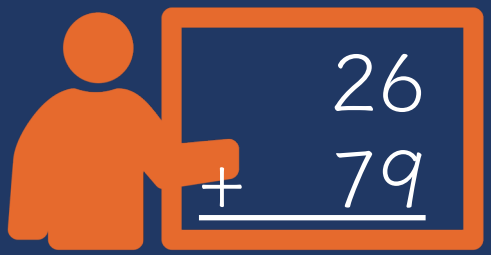
"26 plus 79."

"To solve 26 plus 79, first decide about the operation. Should we add, subtract, multiply, or divide?"

"Add."

"How did you know we want to add?"

"There's a plus sign."



"The plus sign tells us we want to add. To add, let's use the partial sums strategy. What strategy?"

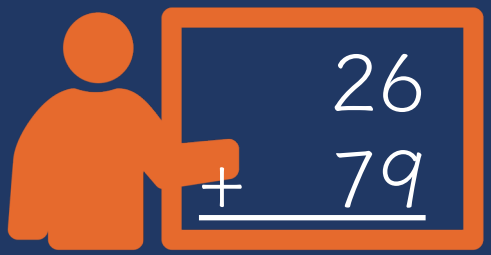
"Partial sums."

"With the partial sums strategy, we start adding in the greatest place value. What's the greatest place value in this problem?"

"The tens."

"So, let's add the tens. What's 20 plus 70?"

"90."



"20 plus 70 equals 90. Let's write 90 right here below the equal line. What will we write?"

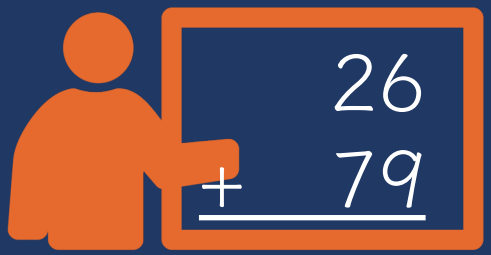
"90."

"90 is the partial sum when you add the tens. What does 90 represent?"

"It's the partial sum of adding 20 plus 70."

"Now, let's add the ones. What should we add?"

"6 plus 9."



"6 plus 9 equals what?"

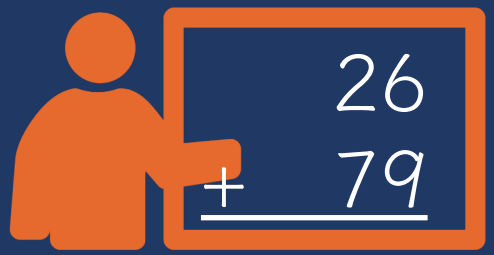
"15."

"Let's write 15 below the 90. Where do we write the 15?"

"Below the 90."

"15 is the partial sum when you add the ones. Now, let's add the partial sums together. What will we add?"

"90 plus 15."



"What's 90 plus 15?"

"How did you add those numbers?"

"So, when you add 26 plus 79, the sum is 105. Who can share how we solved this problem?"

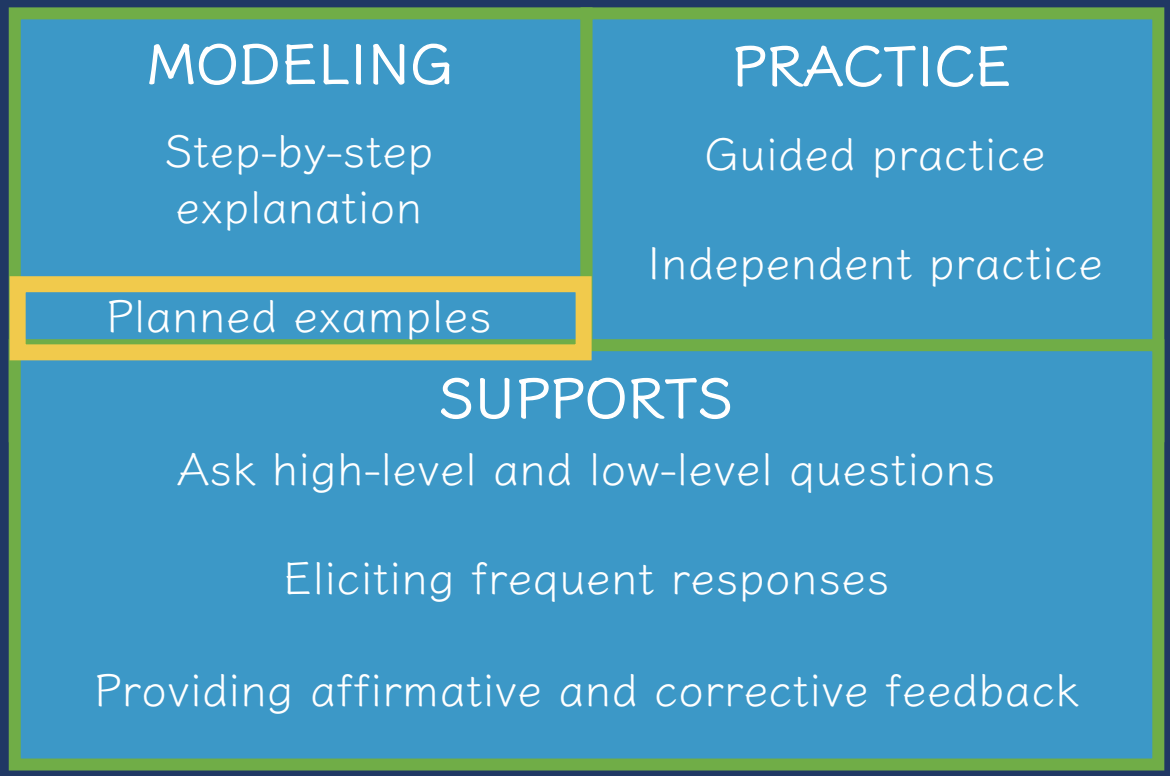
"105."

"I added 90 plus 10 then added 5 more."

"We used the partial sums strategy. We added the tens then added the ones. Then we added the partial sums."

Modeling needs to include planned examples.

These examples should be sequenced so easier skills lead to more difficult skills.



MODELING

Step-by-step explanation

Planned examples

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SUPPORTS

Ask high-level and low-level questions

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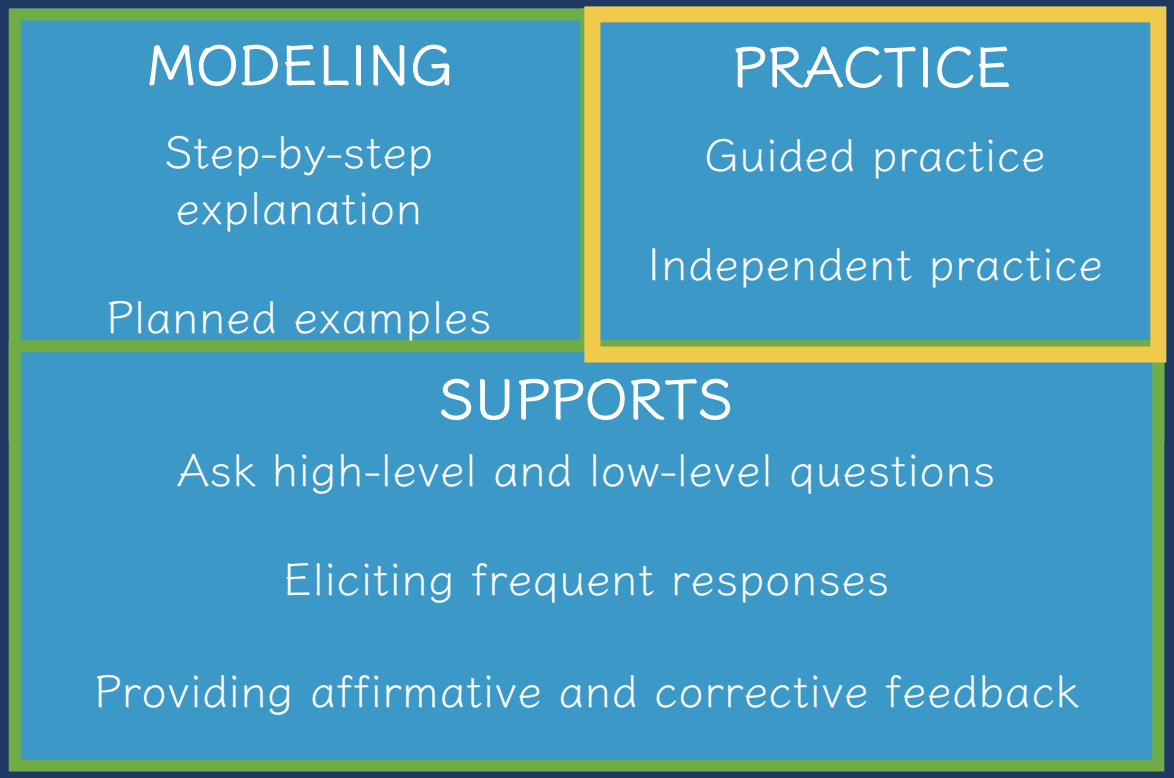
Explicit Instruction

Problem	Step-by-Step Explanation

Select a math problem.

Work with a partner to outline a step-by-step explanation.



Practice continues as a dialogue between the teacher and students.

MODELING

Step-by-step explanation

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SUPPORTS

Ask high-level and low-level questions

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Guided practice is practice in which the teacher and students practice problems together.

"Let's work on a problem together."

MODELING

Step-by-step explanation

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Guided practice

Independent practice

SUPPORTS

Ask high-level and low-level questions

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Independent practice is practice in which the students practice independently with teacher support.

"Now, you'll practice a problem on your own. Use your attack strategy!"

MODELING

Step-by-step explanation

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Guided practice

Independent practice

SUPPORTS

Ask high-level and low-level questions

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Providing affirmative and corrective feedback

Explicit Instruction

Problem

Practice Opportunities

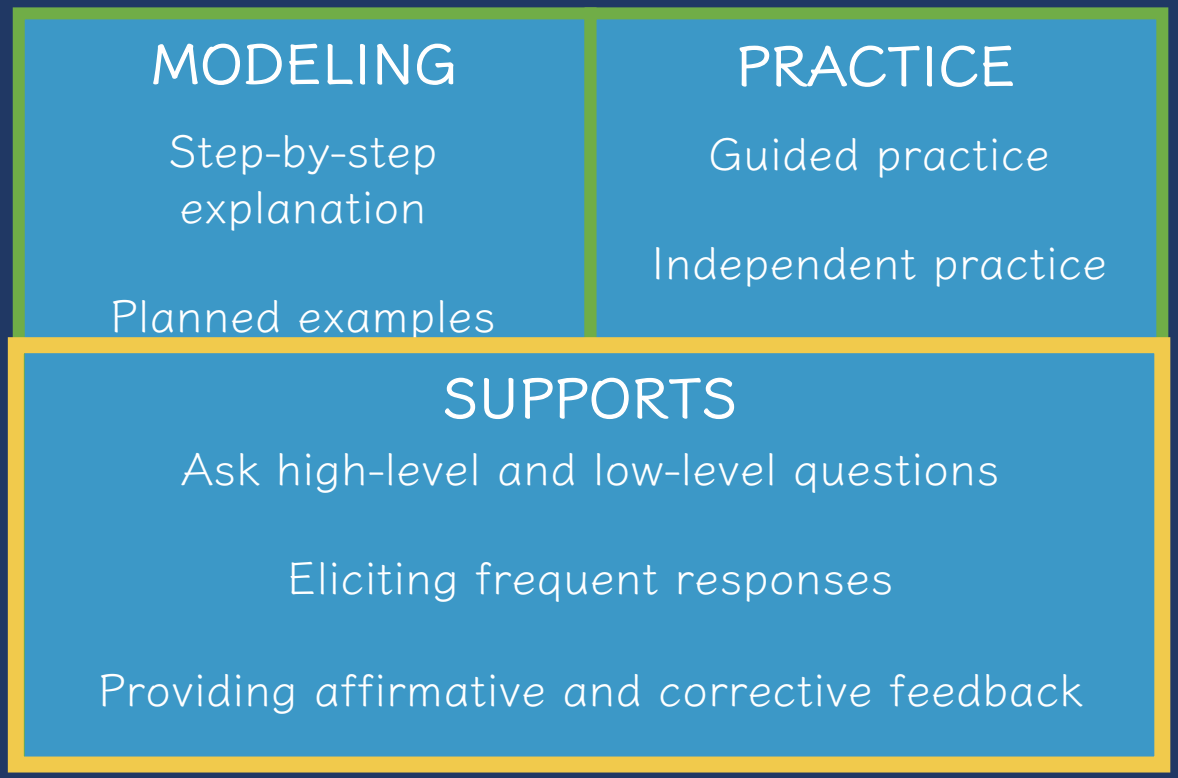
High-Level Questions

Low-Level Questions

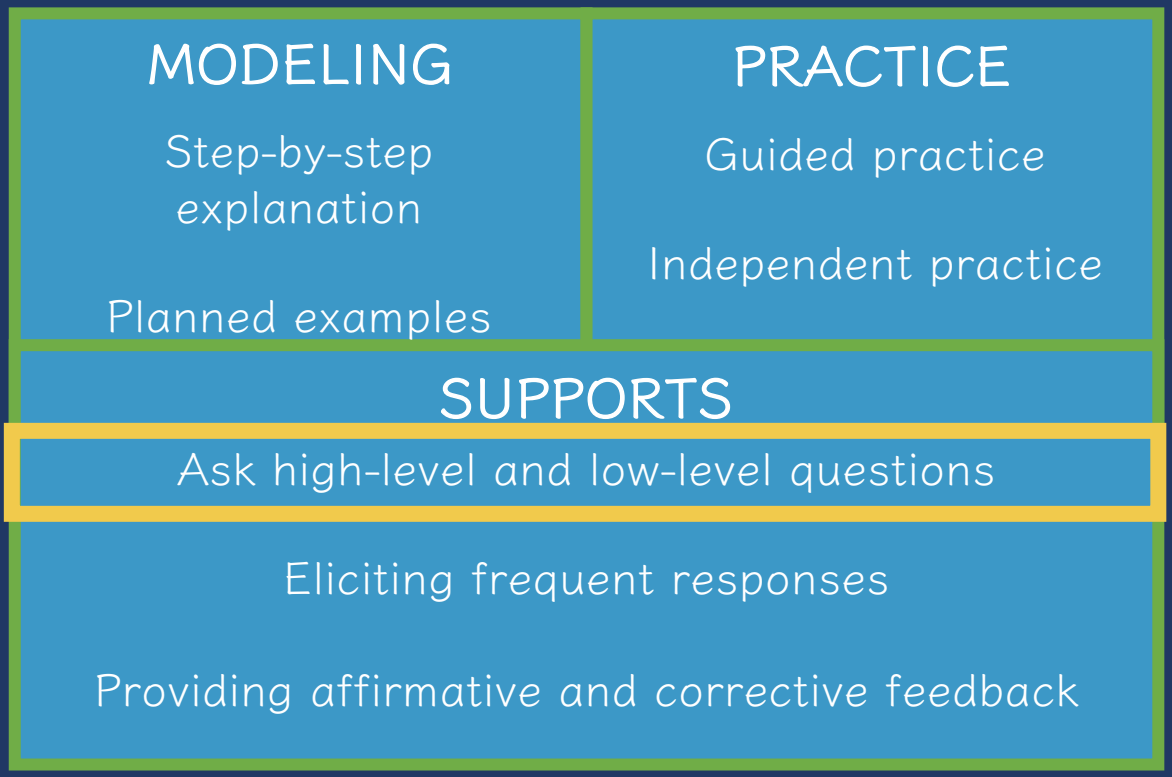
Affirmative Feedback

Corrective Feedback

Describe how you would engage students in practice.



These **Supports** should be used in both **Modeling** and **Practice.**



During **Modeling** and **Practice**, it is essential to engage students and check for understanding.

MODELING

Step-by-step explanation

Planned examples

PRACTICE

Guided practice

Independent practice

SUPPORTS

Ask high-level and low-level questions

Eliciting frequent responses

Providing affirmative and corrective feedback

"What is 7 times 9?"

"63."

MODELING

Step-by-step explanation

Planned examples

PRACTICE

Guided practice

Independent practice

SUPPORTS

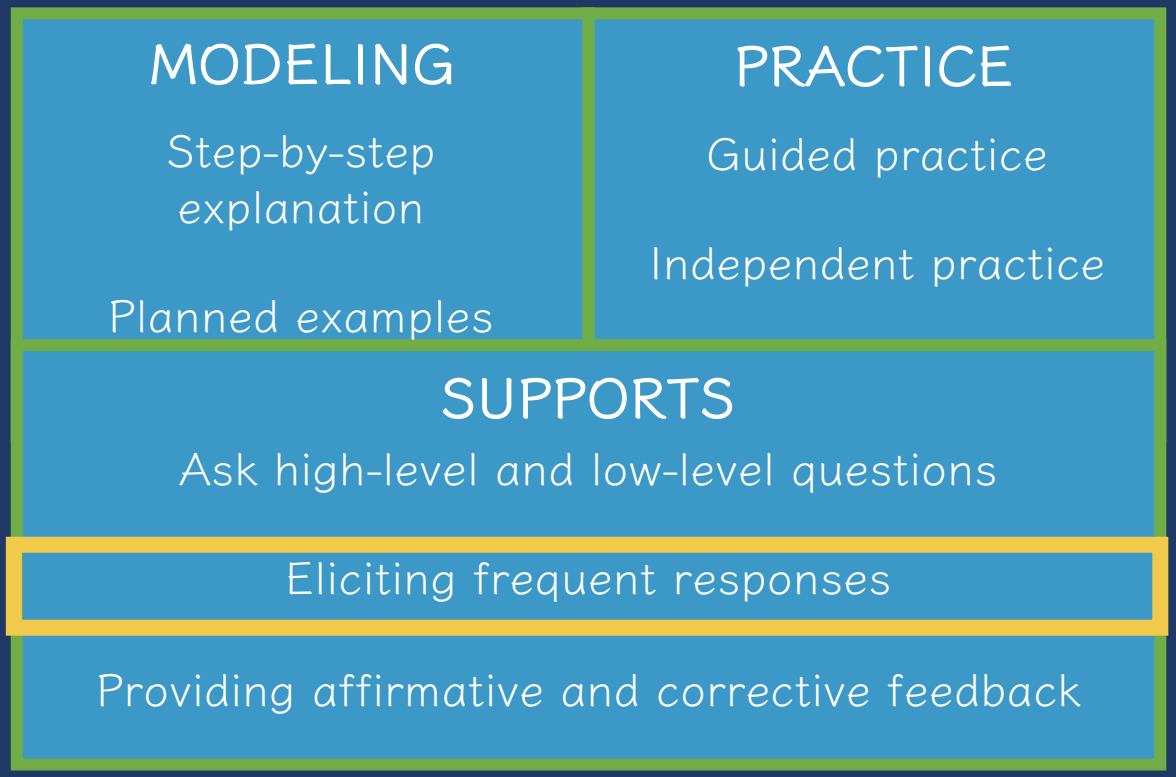
Ask high-level and low-level questions

Eliciting frequent responses

Providing affirmative and corrective feedback

"Why do you use zero pairs?"

"Because a positive 1 and a negative 1 equal 0. I use the zero pair to help me subtract."



During **Modeling** and **Practice**, students should frequently respond. The frequent responses keeps student attention and keeps student learning active.

MODELING

Step-by-step explanation

Planned examples

PRACTICE

Guided practice

Independent practice

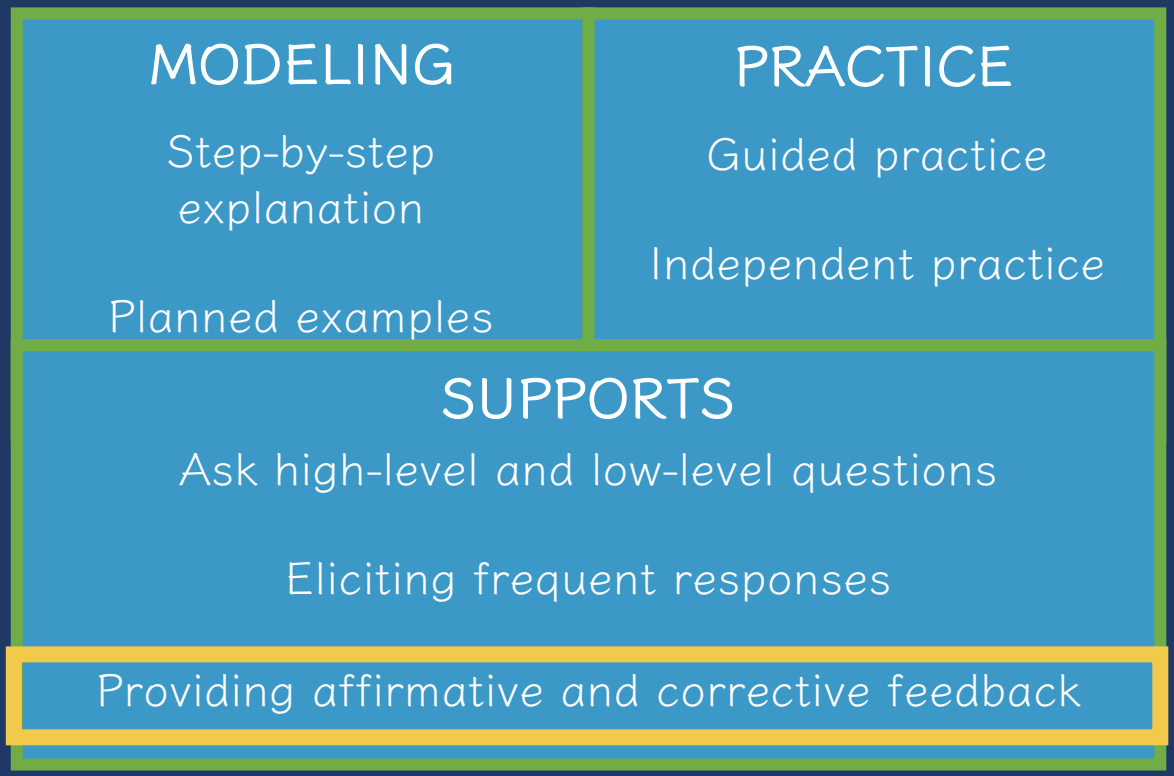
SUPPORTS

Ask high-level and low-level questions

Eliciting frequent responses

Providing affirmative and corrective feedback

- Oral
- Written
- With manipulatives
- With drawings
- With gestures



During **Modeling** and **Practice**, students should receive immediate feedback on their responses.

MODELING

Step-by-step explanation

Planned examples

PRACTICE

Guided practice

Independent practice

SUPPORTS

Ask high-level and low-level questions

Eliciting frequent responses

Providing affirmative and corrective feedback

"Nice work using your word problem attack strategy."

MODELING

Step-by-step explanation

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Independent practice

SUPPORTS

Ask high-level and low-level questions

Eliciting frequent responses

Providing affirmative and corrective feedback

"Let's look at that again. Tell me how you added in the hundreds column."

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Step-by-step explanation

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Guided practice

Independent practice

SUPPORTS

Ask high-level and low-level questions

Eliciting frequent responses

Providing affirmative and corrective feedback

Explicit Instruction

Problem

Practice Opportunities

High-Level Questions

Low-Level Questions

Affirmative Feedback

Corrective Feedback

Provide several of your questions.

Provide examples of your feedback.

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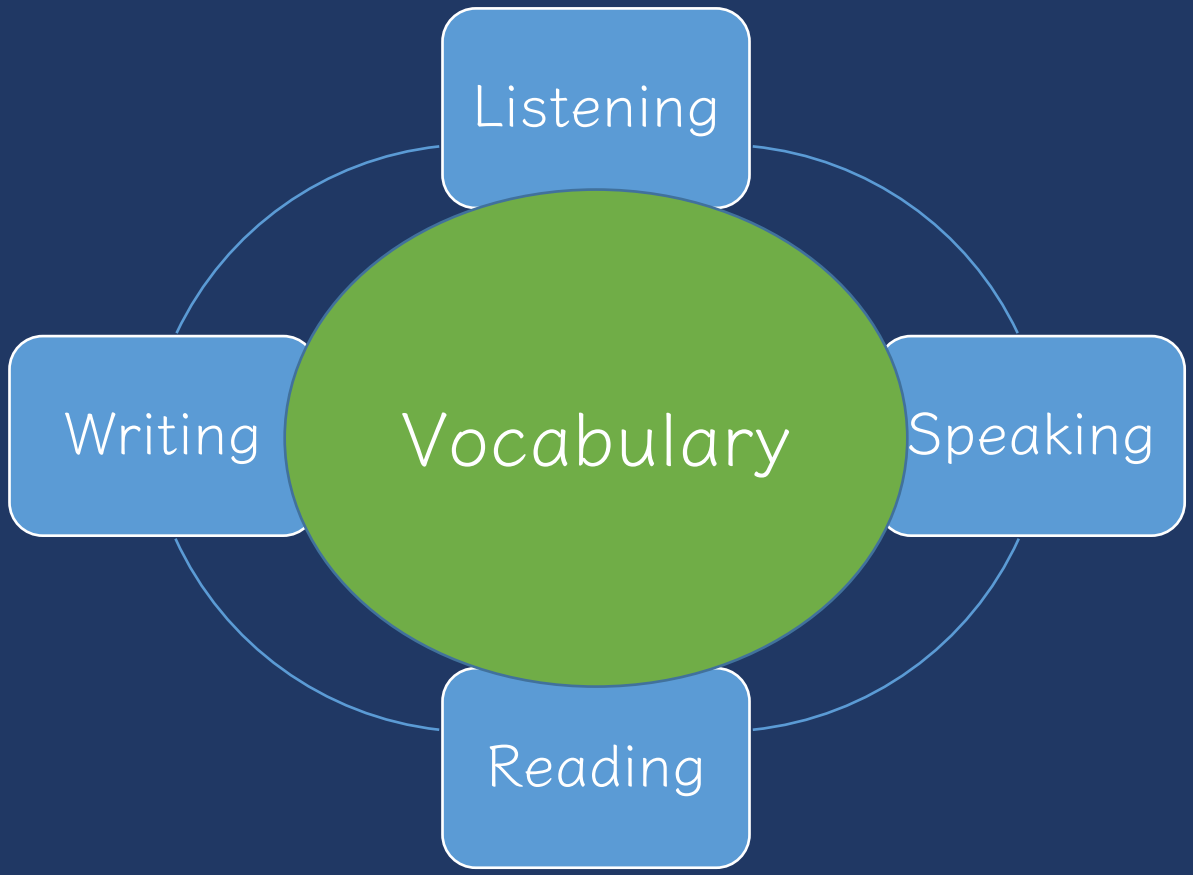
Mathematical Language



Use formal math language

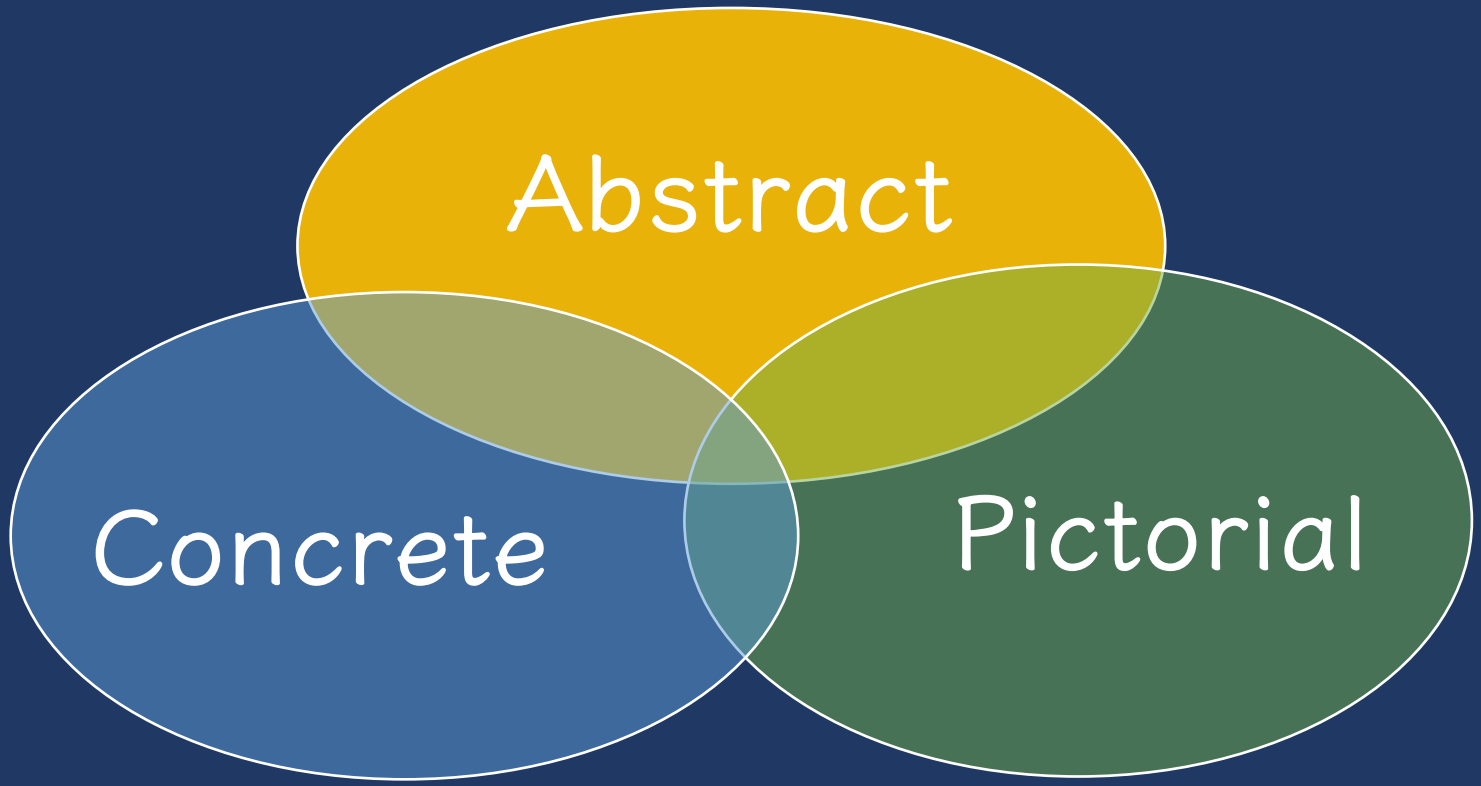
Use terms precisely

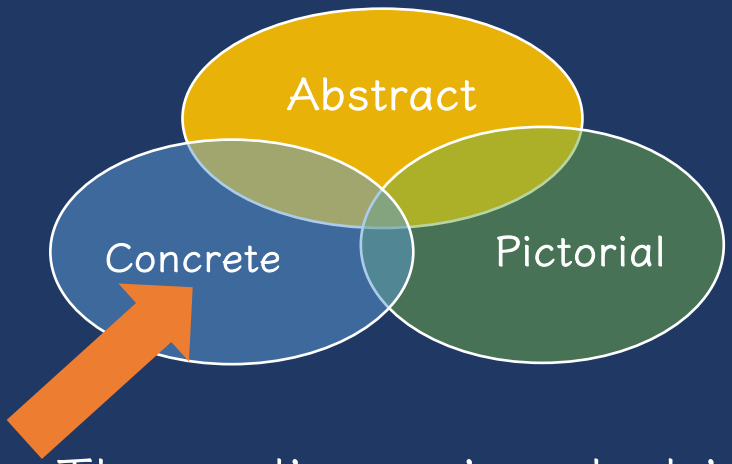
What is your mathematical language goal for the next 4 weeks?

What are successes you can share related to this goal?

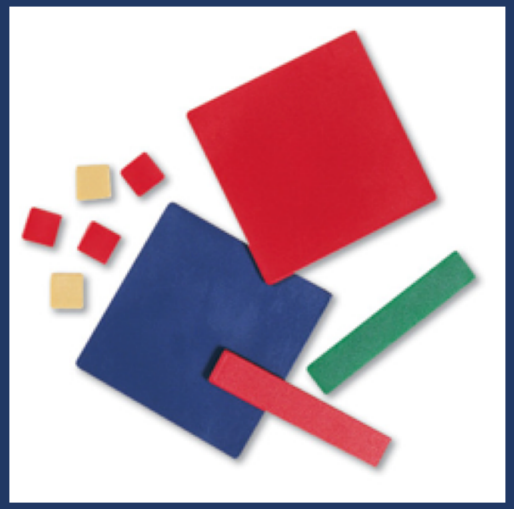
Multiple Representations

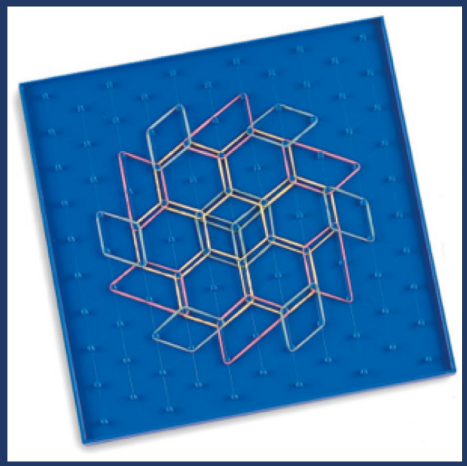
Multiple Representations

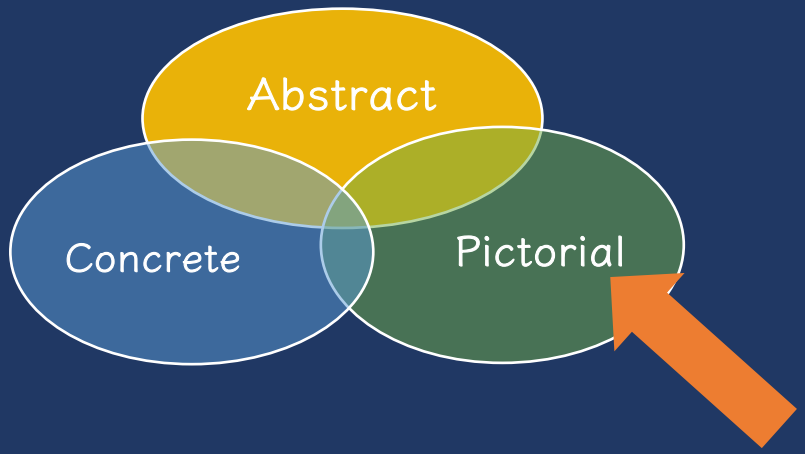




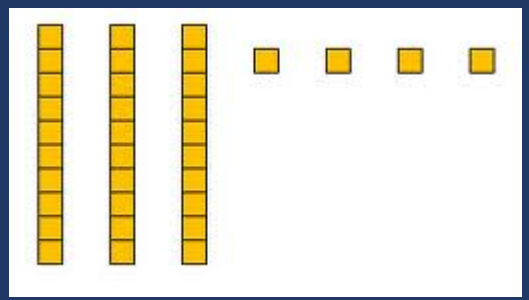
Three-dimensional objects

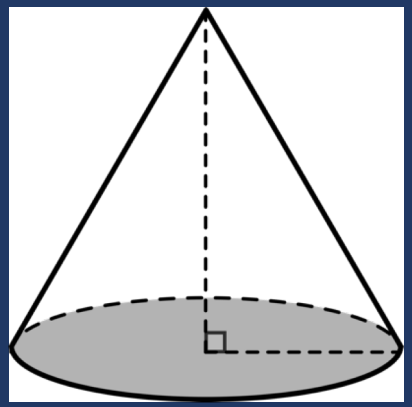


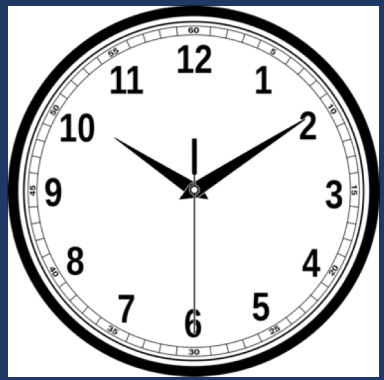


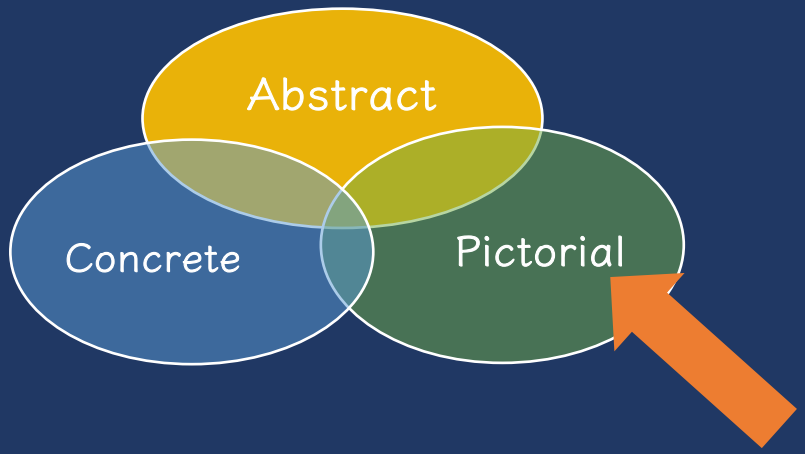


Two-dimensional images









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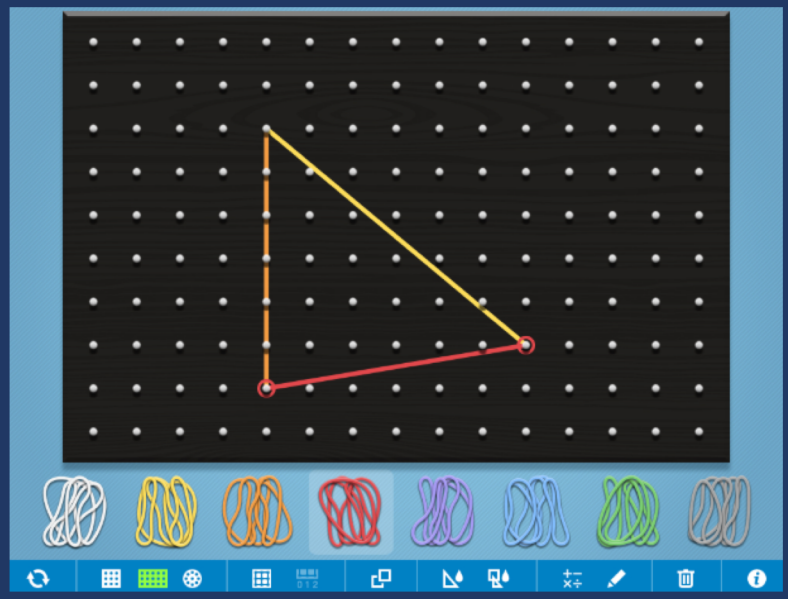

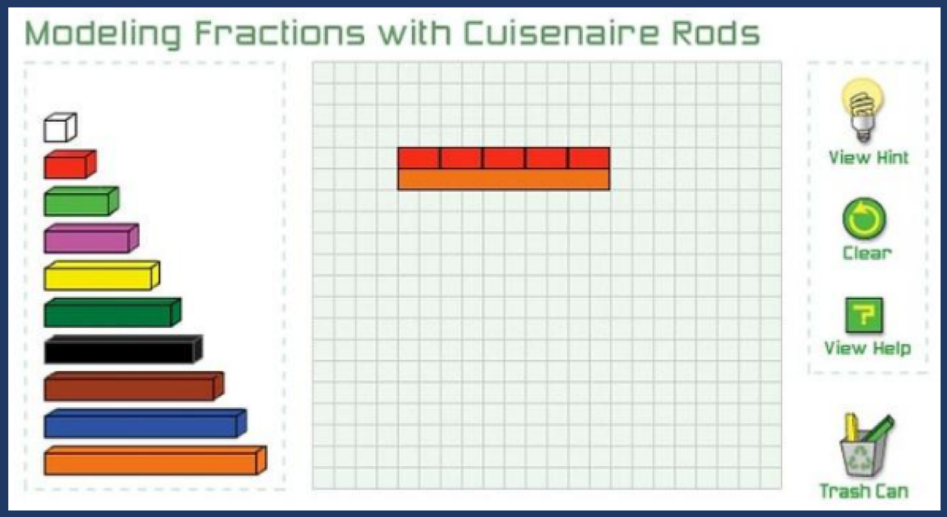

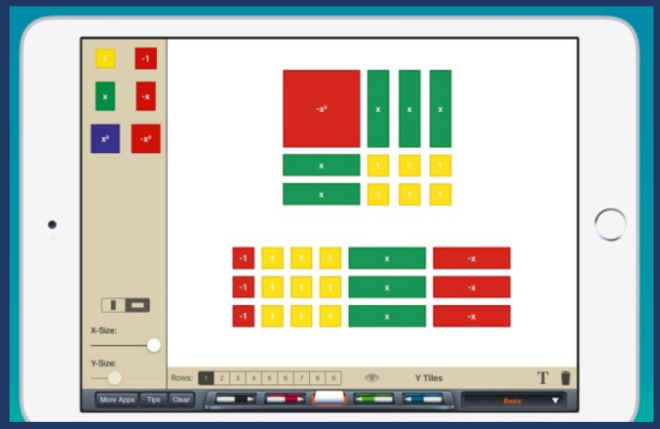

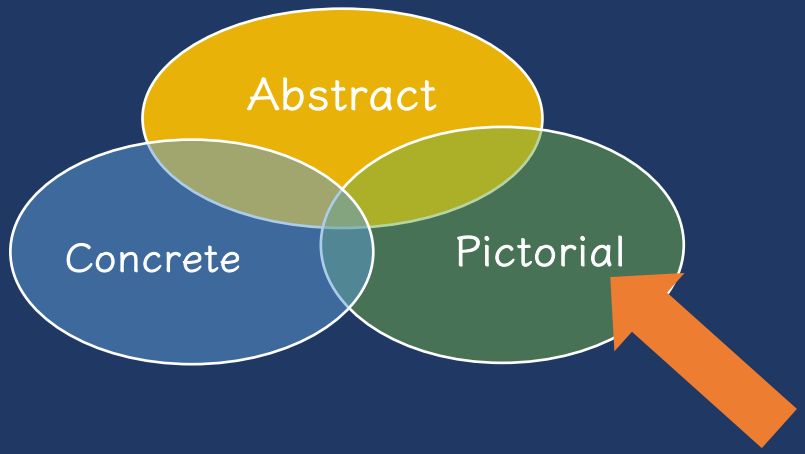

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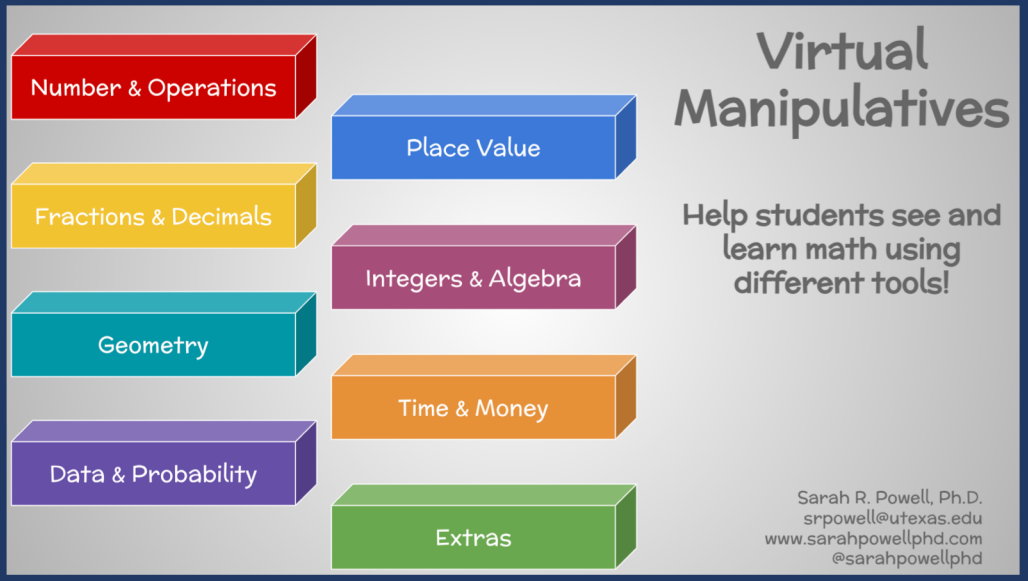
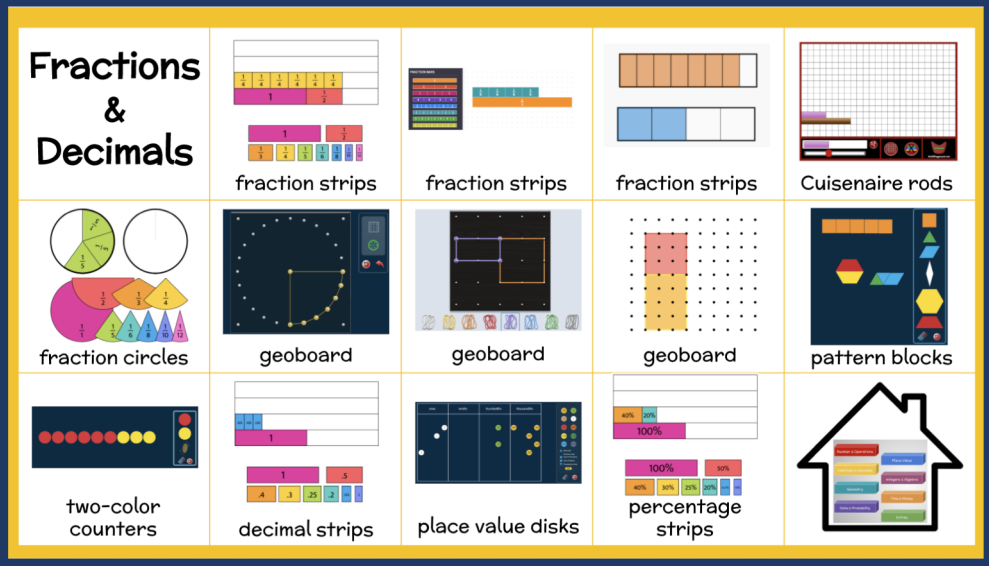
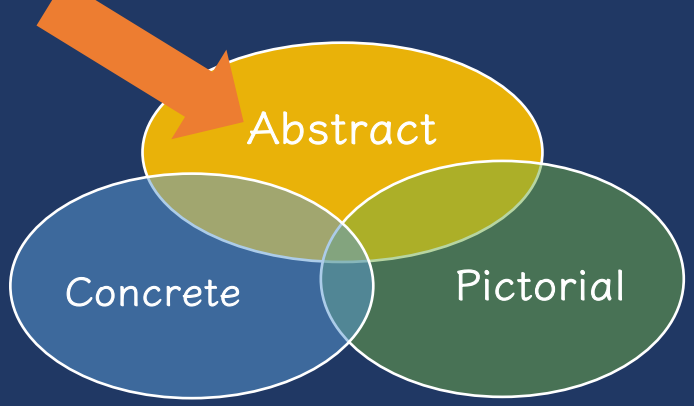






Numerals and symbols and words

$2 + 8 = 10$

34 = 3 tens and 4 ones

$x - 6 = 8$

$$\begin{array}{r} 4{,}179 \\ +\quad 569 \\ \hline \end{array}$$

Explore 3 virtual manipulatives.

Share in the chat.

Fluency

Building Fluency

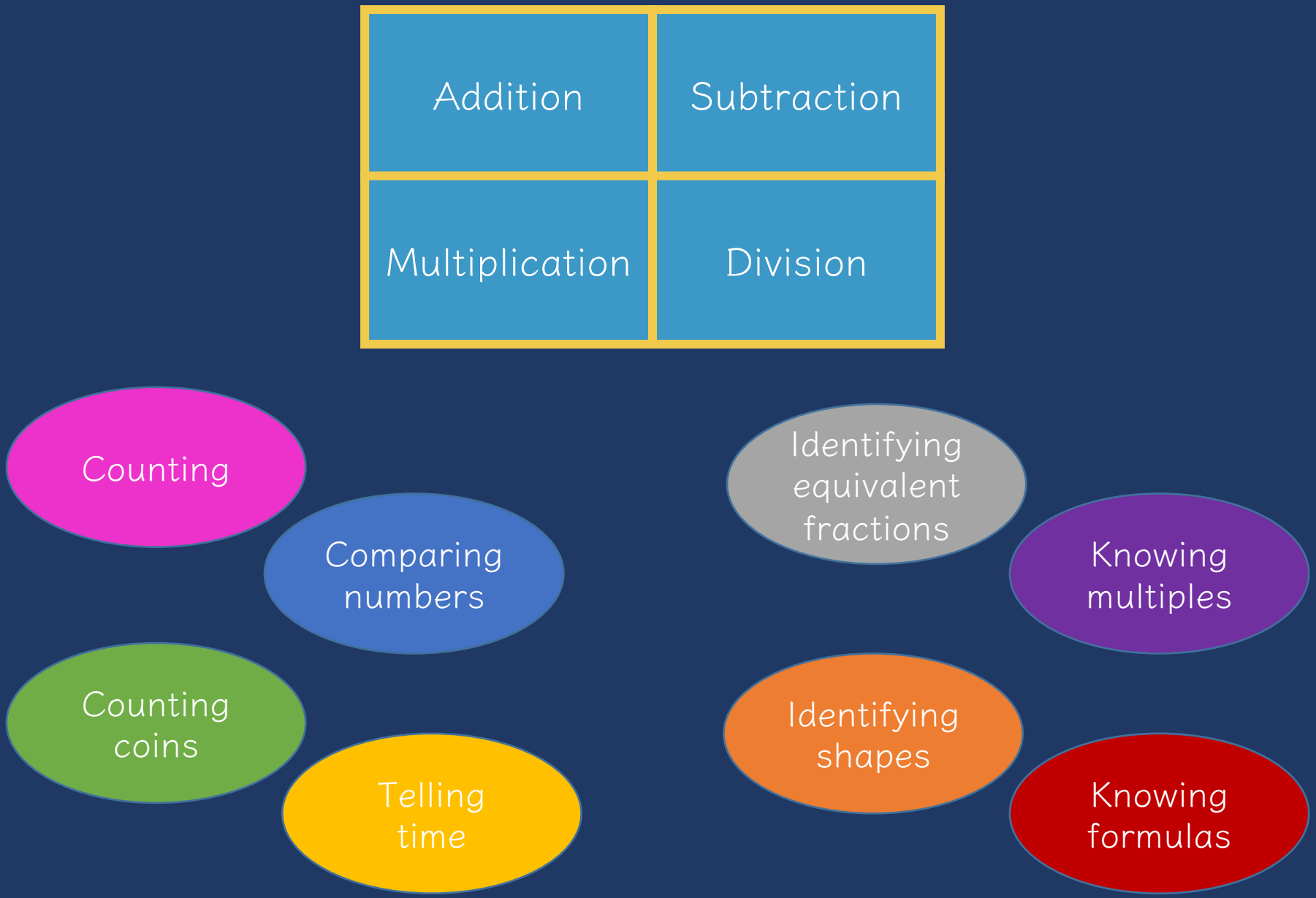
Fluency is doing mathematics *easily and accurately.*

Fluency in mathematics *makes mathematics easier.*

Fluency provides less stress on working memory.

Fluency helps students build confidence with mathematics.

With fluency, it is important to emphasize both *conceptual learning and procedural learning.*



Addition	Subtraction
Multiplication	Division

Build fluency with math facts.

- Addition: single-digit addends
- Subtraction: single-digit subtrahend
- Multiplication: single-digit factors
- Division: single-digit divisor

$$\begin{array}{r} 5 \\ +\ 8 \\ \hline \end{array} \qquad \begin{array}{r} 9 \\ -\ 4 \\ \hline \end{array} \qquad \begin{array}{r} 6 \\ \times\ 7 \\ \hline \end{array} \qquad \begin{array}{r} 56 \\ \div\ 8 \\ \hline \end{array}$$

Addition	Subtraction
Multiplication	Division

Build fluency with whole-number computation

$$\begin{array}{r} 15 \\ +\ 28 \\ \hline \end{array}$$

$$\begin{array}{r} 23 \\ \times\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 1009 \\ -\ 724 \\ \hline \end{array}$$

$$\begin{array}{r} 7250 \\ \div\ 15 \\ \hline \end{array}$$

Addition	Subtraction
Multiplication	Division

Build fluency with rational-number computation

$$\begin{array}{r} 1.4 \\ +\ 3.9 \\ \hline \end{array}$$

$$\frac{2}{3} \times \frac{3}{4}$$

$$\frac{9}{4} - \frac{3}{8}$$

$$\begin{array}{r} 7.892 \\ \div\ 0.14 \\ \hline \end{array}$$

What is your fluency goal for the next 4 weeks?

What are successes you can share related to this goal?

Word-Problem Solving

Teach an attack strategy

Teach about schemas

Instructional Platform

INSTRUCTIONAL DELIVERY

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INSTRUCTIONAL STRATEGIES

Fluency building

Problem solving instruction

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