Creating a Learning Environment

How to Plan and Execute

Essential Question

What do we need to know and do to help students become deep, independent, critical thinkers in math, who value their own thinking and that of others, and become persistent in their own problem solving?

Essential Content Standards

Achieve the Core - Student Achievement Partners

Kindergarten

First Grade

Second Grade

Standards of Mathematical Practice

1. Make sense of problems and persevere in solving them
6. Attend to precision

2. Reason abstractly and quantitatively

3. Construct viable arguments and critique the reasoning of others

4. Model with mathematics

5. Use appropriate tools strategically

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.

Reasoning and explaining

Modeling and using tools

Seeing structure and generalizing

Overarching habits of mind of a productive mathematical thinker.

The Eight Mathematical Practices

| 1	I can solve problems without giving up.	
2	I can think about numbers in many ways.	
3	I can explain my thinking and try to understand others.	
4	I can show my work in many ways.	
5	I can use math tools and tell why I chose them.	
6	I can work carefully and check my work.	
7	I can use what I know to solve new problems.	
8	I can solve problems by looking for rules and patterns.	

WYR - Would You Rather?

Teacher Moves

What did the teacher do and say?

What did the students do and say?

How did learning happen?

WODB - Which One Doesn't Belong?
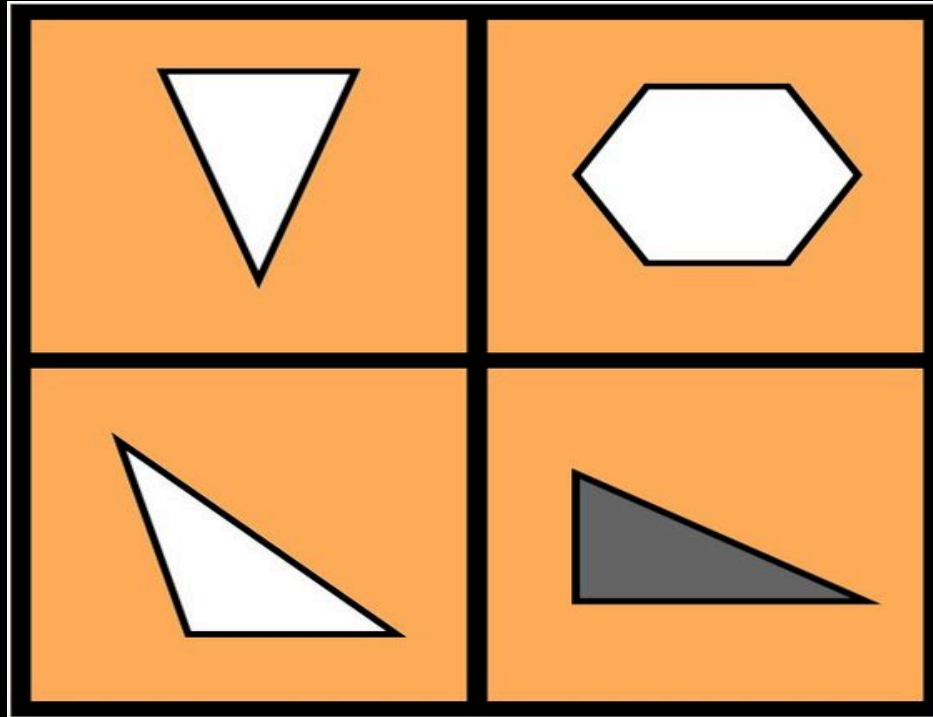
Teacher Moves
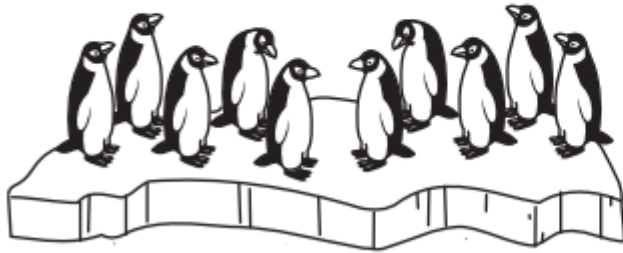
What did the teacher do and say?

What did the students do and say?

How did learning happen?

Word Problems

Here is huddle of 10 penguins. Six penguin pals are swimming toward the huddle, but they are too far away to see. How many penguins will there be in all when the 6 penguins join their friends? Write an equation to show.

What are some teacher moves that could be used for this problem?

Math Journals to Make Connections

Use sentence frames: "I will write the expression ___ + ___ ."

Encourage them to think about other ways to solve: "Another strategy to solve the problem is _____ ."

Extend Student Thinking

The Eight Mathematical Practices

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2	I can think about numbers in many ways.	
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4	I can show my work in many ways.	
5	I can use math tools and tell why I chose them.	
6	I can work carefully and check my work.	
7	I can use what I know to solve new problems.	
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What about English Learners?

ELA/ELD Framework

ELD Proficiency Level Descriptors
   Emerging, Expanding, Bridging

Integration of ELD Standards with Math and Science

More information to support ELLs

[Unlocking Language for ELLs](#)

[Collaborating to Support Newcomers](#)

[English Language Learners and Academic Language](#)

Resources

[CA Mathematics Framework](#)

Standards for Mathematical Practice
[Comments and Elaboration for K-5](#)
[A Guide to the 8 Mathematical Practice Standards](#)

[MTBoS - Math Twitter BlogOSphere](#)

About Me

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Striving constantly to improve my teaching and learning to grow with the teachers and students around me.

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