

Making Sense of Mathematics through Small Group Instruction

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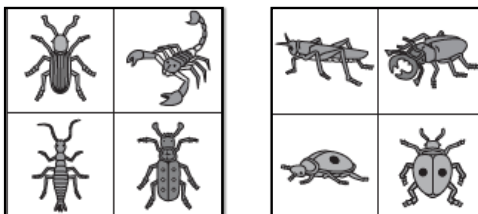


COMMON CORE STATE STANDARDS INITIATIVE 8 Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



Which One Does Not Belong?



Mathematics,

At its core,
is a constant search
for patterns and
relationships.



Mathematics is a Social Activity

Students should be encouraged to
share their discoveries,
observations, strategies, and
solutions with one another from
the earliest years.



Mathematics is...

An area in which all students can
solve a problem and have
confidence that the solution is
correct—not because the teacher
says it is, but because its inner
logic is so clear.



What is Guided Math?

Guided Math provides students with small-group learning experiences that provide multi-layered practice opportunities for all students, at all levels!



Why Use Guided Math?

- Effective mathematics teaching requires understanding what students know and need to learn and then challenging and supporting them to learn it well.

NCTM Principles & Standards, 2000



Guided Math Provides Students with:

- Personalized practice opportunities
- Support while developing fluent, efficient strategies that make sense
- Time to extend their repertoire of problem-solving strategies
- Activities that support autonomous learning.



Guided Math Sessions:

- Can be conducted at a table, on the floor, at a small group of student desks
- Are formed by a teacher's constant formative assessment of student needs
- Meet two or three times a week, while other students work at open-ended problem-solving and basic skills practice math learning centers



Teachers facilitate learning by:

- Carefully choosing appropriate activities that will challenge the chosen students
- Taking observational notes on each students' growth
- Asking genuine questions about student reasoning and understanding
- Bringing groups together to share the thinking & strategies employed



Before:

- Teacher selects three to six students for the group
- Teacher chooses a mathematical activity or problem that will support the selected focus/big mathematical idea of the session
- Teacher plans how to:
 - Model a strategy
 - Questions to ask
 - Evaluates individual student needs in the lesson



During:

- Teacher introduces problem/activity and asks genuine questions
 - What do you notice?
- Students solve the problem/begin the activity independently
- Teacher observes the group and coaches individual students
- Teacher records observations/ anecdotal notes/ formative assessments



Open Number Line

- Darrell wants to buy a ball for 92 cents. He has 65 cents.
How much more money does he need to earn in order to buy the ball?



After:



- Small group discusses the problem
- Students share strategies, partial thinking, and solutions
- Teacher clarifies, re-teaches, reviews skills or vocabulary used in session
- Teacher records observations and evaluates individual student learning
- Students self-evaluate
- Teacher plans next guided math session



Keys to Managing Math Learning Centers

- Students are involved in rich, independent activities that involve practice and problem-solving
- Open-ended (6-8) centers and may stay out for 4-6 weeks
- Students finish one center and move to another by choice or assignment



Building A Community of Learners in Mathematics

OUR FIRST GRADE CLASSROOM AGREEMENTS

- We agree to respect each other.
- We agree to respect the materials.
- We agree to be good listeners to everyone.
- We agree to use our inside voices.
- We agree to be safe.
- We agree to share.
- We agree to follow instructions.
- ALWAYS Be A Good Friend!



Math Learning Centers

Here is the website where you can download all of the math learning centers that I have shared with you today in PDF format for your use in your own classroom!

<http://mathlearningcenter.org/development/workshops.asp>

To get A Free SMART PAL Visit EAI Booth

