Guided Math Groups
Math Journals
How and Why?

Lindsey Shannon
Describe a significant change you have made in your math practice.

- What were you teaching/doing?
- What change did you make?
- Why did you think you should make a change?
- How did you know you should be doing something differently? Was there a question that led to the change?
- How did you decide what to do?
- Was there data or evidence of some sort that made you think you should make a change?
- How did you know whether the change was successful/was working?
- Who else played a role?
- Now, what are you wondering?
Zones of Comfort Protocol

http://www.nsrfharmony.org/protocol/protocols.html
Essential Question

How can I and why should I effectively incorporate homogenously and heterogeneously grouped Guided Math groups and Math Journals to improve student engagement and student achievement?
What is our focus for today?

- Incorporating cooperative learning groups to enhance student engagement and student achievement
- Incorporating math journals to enhance students’ problem solving skills
Rationale for using guided Math Groups and Journals

- Increase number of students who score a level 2 and level 3 on the CRCT
- RBES
- Quality Plus Teaching Strategies
- Student engagement
- Increase student achievement
- Meet the needs of all students
- Opportunities for observation, communication, and collaboration
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<tr>
<th>Sentence</th>
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<td><strong>Word</strong></td>
<td>What is this article essentially about? Debrief.</td>
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Small Group Guided Instruction

- Similar to guided reading
- Homogenous grouping by ability or heterogeneous grouping by interest
- Provides scaffolding to support the learning efforts of students
- Encourages exploration and understanding of math concepts in a risk-free learning environment
- Increases teacher knowledge of students
Small Group Guided Instruction

- Work may be differentiated in procedure, level of difficulty, or by work product
- Enhanced communication which builds competent math thinkers
- Encourage use of manipulatives to increase student comprehension
- Students stay focused
- Incorrect understanding easily detected and corrected
- Cooperation among all levels of students is encouraged
Balanced Numeracy – A Framework for Mathematics Instruction

• **Balance** procedural understanding and conceptual understanding
  • **Balance** whole group and small group
  • **Balance** teacher directed and student-focused

This was created and is from the Gwinnett County Public Schools Math Department.

**Small Group Instruction/ Differentiation**

**Guided Math**
Flexible based on data

**Small Group**
Guided instruction for 3-6 students
Conferencing
Questioning
Alternative strategies
Manipulatives
Interventions (RTI)
Problem solving
Assessment

**Everyone Else**
Exemplars
Independent practice
Games
Hands on
Standards
Super Source
Workstations/ Centers
Extensions
Math-related writing activities

**Opening**

- Warm-Up
- Calendar Math
- Vocabulary Preview
- Activating Activity

**Closing**

- Journaling
- Summarizing
- Answer EQs
- Vocabulary Review

**Whole Group Instruction/ Modeling**
Mini-lesson

- Teacher focused/Direct instruction
- Practice with teacher
- Use of manipulatives
- Exemplars
- Vocabulary development
- Formative assessment

**GCPS Vision for Mathematics**: To develop students into confident and competent problem solvers who have a deep conceptual understanding of numbers, can compute, think critically, and communicate their thoughts and mathematical reasoning effectively to be successful and competitive in the global economy.
What Are The Components of Guided Math Groups?

- Classroom environment of numeracy
- Whole class instruction
- Small group guided instruction
- Assessment for Learning
- Math Centers
- Individual practice
  - Anchor Papers
  - Math Journals
  - Exemplars
  - Mountain Math
Creating a Classroom Environment of Numeracy

What are some other ways to create this environment?
How can I Form my Guided Math Groups?

- Group your students by ability
  - One-on-one interviews
  - Paper and pencil assessment
- Group your students by interest
  - Types of pet, birthday month, or by favorite sport or activity
- Number of groups is up to teacher preference
  - 3 groups
  - 4 groups
Once I have my groups set up, what can I name them?

- Coin Names
- Shape Names
- Color Names
- Animal Names

Kid choice – you can let them get together as a group and pick their name

Any other ideas?
More on Groups in the Classroom

3 Stations
1. Teacher Station
2. Seatwork Station
3. Math Tubs/Centers

4 Stations
1. Math Journals/Anchor Paper Station
2. Math Tub Station
3. Teacher Station
4. Seatwork/Anchor Paper Station
Organization and Classroom Setup

- Seatwork table with a seatwork bin - 4 group folders
- Math Journal table with a math journal bin - 4 group folders
- Readily available manipulatives
- Math tub storage and spots around the room
- Word Wall
- Area for you and your group
Folder Organization

- left side - green dot - means GO
- right side - red dot - means STOP
- Any work that is finished, goes on the red side. Any work that is not finished goes on the green side.
Math Journals

- Support a more complete understanding of concepts

- Reinforce comprehension

- Encourage use of diagrams

- Can be used for documentation of research and experimentation during investigations and to record processes, strategies, and solutions

- Use labels to print prompts or problems

- Differentiate the questions to meet the needs of each student
“Writing in math class supports learning because it requires students to organize, clarify, and reflect on their ideas—all useful processes for making sense of mathematics.”

Marilyn Burns
Article: Writing by Marilyn Burns

Inside/Outside Circles
Things to Think About Before You Implement Math Journals

- What type of format will you use?
- What organizational system will you use?
- When will you respond to children?
- How will you respond to children?
- When will children have a chance to share?
Math Journals in the Classroom

- Group folders
- Their math journal prompts for the day are in their groups folder

Math Journal Table

What do you notice that is around our math journal stations to help support student learning?
Mrs. Taylor’s children were playing outside in the snow. When she looked out the window she saw 10 boots. How many children did she see?

Use the chart paper to solve this problem. Be ready to share!
Modeling and Expectations

Use a big class math journal, a place where you put your modeled prompts for students to go back and refer to

Have an anchor chart with student samples and expectations the students can use

Have strategy posters the students can use
Math Journal Prompts

- Addition or subtraction word problems
- Number study problems
- Place value questions: 33 skittles. How many tens and how many ones? _____tens + _____ones = ______
- What do you know about ___________ so far?
- What do like about ___________?
- What did you think about math groups yesterday?
- What do you think about Frank’s math thinking during calendar?
- Show any image. Students write about all of the math that they find in the picture.
Seatwork

- Follow-up work from small group lesson
- Independent work
- Provides practice of current targets or review skills
- Differentiated activities
anchor papers

- A collection of mathematics practice printables
  - Harcourt practice book
  - Teacher selected printables

- Student or teacher selected pages

- Early finishers work or easily managed station

What are some other ways we can incorporate anchor papers?
Math Tubs or Centers

- Students work independently or in pairs
- Procedures and routines must be established and practiced
- Activities should provide opportunities for exploration and practice of mastered skills
- Review of previously taught skills or practice for new targets
Teacher Station

- Have a designated area where you will meet with your groups
- Make sure you can see the whole room
- Have manipulatives and materials close to your area

What do you notice in this teacher’s area?
I Can Chart

- It is very important that the students understand your expectations during small group instruction.
- Ask the students to think about what they can be doing during math groups.
- Record their thoughts on chart paper.
- Take their ideas and write them on a poster to display in your room.
- Review the I Can chart every day before math groups.
- It truly makes the students responsible for their learning and for their behaviors.
Math vocabulary words should be posted somewhere in the room

Why?

How can I do this?
What does each day look like?

3 Groups

Rotation 1
Mrs. Shannon: Dimes
Seatwork: Quarters
Centers: Nickels

Math Tubs

Seatwork

Rotation 2
Mrs. Shannon: Nickels
Seatwork: Dimes
Centers: Quarters

Rotation 3
Mrs. Shannon: Quarters
Seatwork: Nickels
Centers: Dimes

Fridays: assessments, Exemplars, literature, partner games, or computer lab for math activities.
What does each day look like?

Monday: Rotation 1:
Mrs. Shannon: Nickels
Math Journals: Quarters
Math Tubs: Pennies
Seatwork: Dimes

Mrs. Shannon: Nickels
Math Journals: Quarters
Math Tubs: Pennies
Seatwork: Dimes

Monday: Rotation 2:
Mrs. Shannon: Dimes
Math Journals: Nickels
Math Tubs: Quarters
Seatwork: Pennies

Mrs. Shannon: Quarters
Math Journals: Pennies
Math Tubs: Nickels
Seatwork: Quarters

Tuesday: Rotation 1:
Mrs. Shannon: Pennies
Math Journals: Dimes
Math Tubs: Nickels
Seatwork: Quarters

Mrs. Shannon: Quarters
Math Journals: Pennies
Math Tubs: Nickels
Seatwork: Quarters

Wednesday looks like Monday and Thursday looks like Tuesday. Fridays: assessments, Exemplars, literature, partner games, or computer lab for math activities.
What do I do to get my room ready?

- Meeting areas in which students gather
- Manipulatives that are easily accessible
- Calendar Math bulletin board
- Math Tubs
- Math journal area
- Seatwork area
- Anchor papers
- Math vocabulary
- Timer/bell/xylophone

Use Checklist!
I think I am ready to start guided math in my classroom, now what?

First 10 days in our 1st grade classrooms
Review Detailed Lesson Plans
Quinn’s Six Questions Protocol

http://www.nsrfharmony.org/protocols/protocols.html

Be a reflective teacher, and now think about Guided Math... with a new partner discuss and answer the following 6 questions on chart paper. Be prepared to share!

1. What am I teaching and to whom?
2. Why am I teaching it?
3. How am I teaching it?
4. Why am I teaching it that way?
5. What evidence will I collect to show my kids are getting it?
6. How will my students know they are getting it?
Professional Resources and References

- Teaching Student Centered Mathematics by John Van de Walle and Lou Ann H Lovin
- About Teaching Mathematics - A K-8 Resource by Marilyn Burns
- Guided Math by Laney Sammons
- Good Questions for Math Teaching (K-6) by Peter Sullivan & Pat Lilburn
- Comprehending Math by Arthur Hyde
- The Differentiated Classroom by Carol Ann Tomlinson
- Number Talks by Sherry Parrish
More Professional Resources and References

- Now I Get It by Susan O’Connell
- Number Wonders by Catherine Jones Kuehns
- Fundamentals by Brian Tickle and James Burnett - Origio Education
- National Reform Faculty: http://www.nsrfrharmoney.org/protocol/protocols.html
- Number Corner - The Math Learning Center
Thank you!

Please take the time to fill out the 3,2,1 Ticket out the Door!

- 3 Things you will do to prepare for Guided Math in your classroom
- 2 Things you discovered about Guided Math
- 1 Question you still have

Please do not hesitate to contact me with any questions!

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