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* Assessment sheets provided

What Is Guided Math?

As the name suggests, guided math is a strategy paralleling guided reading. Both guided math and guided reading are strategies that differentiate instruction to better meet the needs of all learners. During my guided math block, I have shifted the focus away from whole group instruction. I now spend the majority of time on small group instruction and practice opportunities—both essential for success. Whole group instruction still occurs, but in a much smaller chunk of time, serving as the springboard (or foundation) for the small group instruction and independent practice that follows.

A major difference between guided math and guided reading is the type of assessment necessary to determine the learners' needs. In guided reading, there are many types of assessments for determining reading levels. Your district probably has embraced a particular type. Generally speaking, once a reading level is determined, the growth of a child's reading ability is somewhat predictable (of course, there are always exceptions!). Groups formed during guided reading are usually based upon a child's reading level.

The assessment process is not as definitive for guided math. For example, a child may be very proficient in the area of number and operations but still lack the geometric concepts that are typical for that age level. Another may be able to use standard measurement yet lack algebraic patterning skills. Although a beginning-of-the-year math inventory provides an overriding sense of a child's math ability, it is not the most effective tool. Instead, individual pretests addressing particular units or content are more effective. Therefore, groups formed during guided math are usually based upon a child's content knowledge in a particular unit of study.

Guided Math Components	Balanced Reading Components
Whole group instruction	Shared reading
Individualized or small group instruction	Guided reading
Independent practice	Independent reading
Math activities/centers	Literacy activities/centers

Many of my guided math components are similar to those found in my balanced reading program.

Regardless of the assessment used, the purpose is clear: Teachers must first determine the needs of the students. This, in turn, determines the type of small group instruction that will occur. The flow of children in and out of groups based upon their needs is what we refer to as flexible grouping. It may be obvious, then, that your flexible grouping within the guided math framework is usually much more fluid than that of guided reading.

I have found that a natural transition for my guided math approach occurs once students learn the guided reading procedures necessary for independent and small-group learning and practice.

Pretesting: An Essential in Guided Math

Pretesting is a crucial step in the guided math process. It helps to determine what your students do or do not know in a particular content strand of math. As mentioned earlier, this information is essential in order to place students in the most effective instructional grouping situation. The best way to do this is by administering a pretest for each upcoming unit. If you have a textbook series, pretests may already be available to you as part of the resource package. If not, an alternate form of a chapter test may serve as a pretest. Otherwise, you will need to develop one yourself based on the unit you are about to teach. Despite the time and effort it takes to make your own pretesting tool, the time you save in the long run is invaluable.

How to Begin

As you can imagine, it is very important to explain the purpose of a pretest to students. Without doing so, they may become overwhelmed and stressed. In child-friendly language, let students know that the pretest will drive your instruction.

Administration

A few days before you begin a math unit, give the pretest to students. Explain that if they are unable to complete a problem, they should put a question mark by the problem rather than leave it blank. That way, you are assured that they saw the problem and did not skip it accidentally.

Correcting the Pretest

Using a highlighter, circle incorrect answers and question marks. Do not fill in the correct answers for them and do not put a score on the pretest (you will hand it back to students toward the end of the unit so that students may correct their mistakes).

Compiling the Information

On your own copy of the pretest in the top right hand corner, list the names of any students who got the entire pretest correct. Next to each test question, list the name of any student who got the respective question wrong or did not answer the question. In essence, you are doing an item analysis of the test.

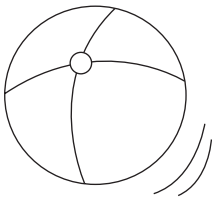
Using the Information to Drive Instruction

Taking the compiled information from the pretest, you may want to make notes in your teacher or curriculum manual. For example, on the pretest it may become evident that three of your students are struggling with coin identification. List their names on the respective lesson that addresses this concept. It will prompt you to pay careful attention to them during your whole group mini-lesson. You may even want to prepare reteaching worksheets for them to use in the event they struggle during the mini-lesson. On the flip side, you can prepare enrichment activities for those children who passed the entire pretest.

LEARNING GOALS

Number and Operations: basic facts

Beach Ball Fun



Materials

inflatable beach ball, permanent marker or adhesive numbers, record sheet (page 22)

Set Up

Place a number on each colored section of the beach ball.

Center Guidelines

Children toss the ball in the air. When they catch it, they "read their thumbs," using the numbers in the two panels where their thumbs are resting. Determine the number of times the children may toss the beach ball.

Activities

One-to-One Correspondence Using counting objects such as base ten blocks, beads, beans, or buttons, children count out the same number of objects that represent the numbers under each of their thumbs.
Whole Number Computation Children add the two numbers together or find the difference between the two. Provide counters for students who may struggle with this. More advanced students can multiply the two digits or demonstrate repeated addition.
Odd and Even Students identify their numbers as odd or even.
Place Value Students make all the digits possible by combining the numbers. Then they can put them in order from least to greatest. (Example: With a 2 and a 7, all possible numbers are 2, 7, 27, and 72.)
Number Sentences Children write number sentences using the two digits they read. (Example: $2 < 7$)
Number Words Students write the corresponding number words.

Extensions

Algebra Children use all the numbers from three tosses to create a number pattern.

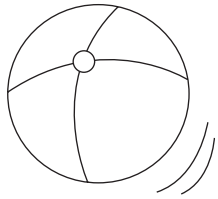
Geometry Children draw two shapes using their numbers, which determine the number of sides of each polygon. (This will only work for 3 or greater.)

Measurement Children find an object that comes between the measurements of the two digits (either with nonstandard or standard units).

Data Analysis and Probability Students use tallies to represent the digits.

Name _____ Date _____

Beach Ball Fun



First Toss:

Second Toss:

Third Toss:

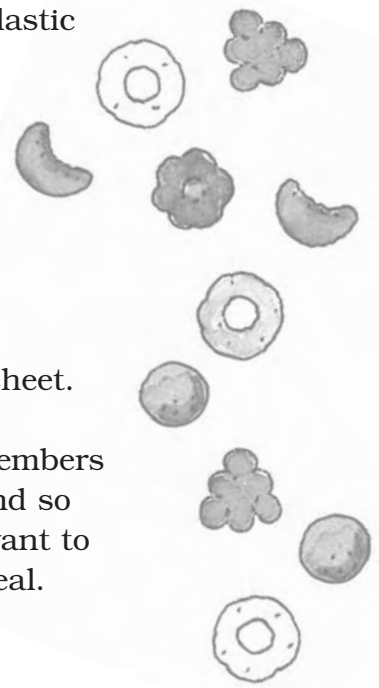
LEARNING GOAL

Algebra: color patterns

Cereal Patterns

Materials

various colors of cereal rings, 3-oz. paper cups, record sheet (page 42), crayons, glue, pencil, gallon size plastic bags (optional)



Set Up

Pour cereal into cups.

Center Guidelines

Read the record sheet directions aloud.

Activities

Have students follow the directions on the record sheet. At the end of your guided math or center time, ask students to show their sheets to the class. Have members of the class name the patterns (AB, AABB, ABC, and so on). Before taking the sheet home, students may want to place it in a gallon bag to help avoid losing the cereal.

Extensions

Number and Operations Have students assign a number to the corresponding cereal colors to create a number pattern. More advanced students may want to make a pattern number sentence and figure out the sums.

Geometry Use cereal with different shapes.

Measurement Students can measure the lengths of the cereal patterns.

Data Analysis and Probability Children can graph or tally the total number of each color in a completed cereal pattern.

Name _____ Date _____

Cereal Patterns

Use two different colors of cereal to make a pattern. Use crayons to show your pattern.

Now try making a different pattern using three different colors. Draw your patterns using crayons.

Make a different pattern than above. Glue the cereal to show your pattern.

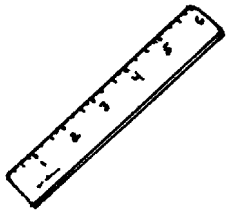
LEARNING GOALS

Measurement: linear

Measure the Room

Materials

4 12-inch rulers, 4 infant or toddler size flip-flop sandals (available at a discount store), glue gun, record sheet (optional)



Set Up

Attach a flip flop to the 12-inch end of each ruler using hot glue. Having this sandal will not only serve as the pointer for the activity, but also it will help students remember that 12 inches equal 1 foot.

Center Guidelines

Demonstrate the center during whole group instruction.

Activities

This activity is the math version of "Reading the Room" that is popular with guided reading. Students use the ruler to point out objects in the room. Students may also use it to measure the objects. Decide whether you want children to use the record sheet. You also may want to change the intent for each center visit. For example, the first time they "Measure the Room," you might ask students to find three objects that are greater than one foot. The next time, they may find three objects less than one foot. Another time they may find objects greater than six inches but less than a foot, and so on. Children may record their answers on the accompanying record sheet (page 68) by either writing the name of the object or drawing a picture of it.

Extensions

Number and Operations Ask students to find objects using fractional terminology (such as one-half of a foot, one-fourth of a foot, three-quarters of a foot).

Geometry After measuring their objects, students determine the two- or three-dimensional shapes that they can find in the objects.

Data Analysis and Probability After measuring their objects, students put them in order from smallest to largest or largest to smallest.

Name _____ Date _____

Measure the Room

First Measurement:

Second Measurement:

Third Measurement: