Daily Math Review

Daily Math Review (DMR) is a systematic method to deal with student misconceptions using error analysis, specific feedback, and reflection.

Key Components:

1. Student Collaboration
2. Key Statement Ideas
3. Error Analysis
4. Student Reflection

Overview

- Occurs the first 10-15 minutes of class or math daily
- 2-3 problems are written on the board and students copy them in journals and solves (or teacher can prepare sheets ahead of time)
- Each problem represents a different strand
- Reinforce prior learning and provide daily practice to strengthen gaps
- Teacher-directed feedback at first and moves to student-directed feedback
- Students work independently and **with a partner to collaboratively** solve problems
- Students discuss the reasonableness of answers and estimation when appropriate to foster Students' mathematical reasoning and number sense

Preparation

- Key Idea Statements
- Notebook or prepared sheets/packet
- Marking pens or colored pencils
- Manipulatives when appropriate
- Teacher-designated partners (recommend changing partners every 3-4 weeks)
- Biweekly quiz

Daily Math Review
Kindergarten

Set Up:

- Students sit on the rug close to the teacher.
- Students have a designated partner.
- Categories and problems based on number sense.
- Students have the necessary manipulatives for categories.

Categories are completed one at a time using the following sequence:

1. The teacher reads problems problem number one to the student and then the student and teacher read the problem together.

2. Students try the problem independently for a couple of minutes using available manipulatives.

3. Students turn to face their partners and discuss what they tried and what they think the answer is.

4. Students turn back to face the teacher and the class solves the problem together. This provides timely and specific feedback for the students.

5. Students turn back to their partner and participate in reflection by sharing how they did on the problem.

6. The class says they key statement for the problem together 2 times.

7. The same sequence in followed for the next problem(s).

Daily Math Review
1st Grade

Set Up:

- Students sit on the rug close to the teacher.
- Students have a designated partner.
- Categories and problems based on number sense.
- Students have the necessary manipulatives for categories.
- Students have a paper template to record work.

Categories are completed one at a time using the following sequence:

1. The teacher reads problems problem number one to the student and then the student and teacher read the problem together.

2. Students try the problem independently for a couple of minutes using available manipulatives and paper and pencil.

3. Students turn to face their partners and discuss what they tried and what they think the answer is and record on their paper what they tried.

4. Students turn back to face the teacher and the class solves the problem together, providing timely and specific feedback for the students. The students star work that is correct on their paper and circle and fix work that is incorrect or incomplete.

5. Students turn back to their partner and participate in reflection by sharing how they did on the problem.

6. The class says the key statement for the problem together 2 times.

7. The same sequence in followed for the next problem(s).

At the beginning of the year, first-grade math review may look like what was described for kindergarten math review to build student capacity for the process.

Adapted from Five Easy Steps to a Balanced Math Program by Ainsworth and Christinson

Daily Math Review
Grades 2-8

The teacher directs the students to do the following:

1. Students will number and copy the problems
2. Students will give thumbs up when completed (or other signals of active engagement)

Independent Work Time

Time: 2-3 minutes	**Purpose:** Students begin to solve problems.

Students Actions

- Students work on the math review problems for 2-3 min. independently, getting as much finished as they can, but completion is not expected in this time frame

Teacher Actions

- Walking around
- Monitoring student work

Collaboration (Partner Work)

Time: 4-5 minutes	**Purpose:** Students collaboratively solve problems.

Students Actions

- Students work with their designated partner to complete the math review problems

Teacher Actions

- Walking around
- Listening to student explanations for the purpose of:
    - Identifying student misconceptions
    - Choosing students who may need additional help (small group)

Processing of Error Analysis and Reflection

Time: 5-6 minutes	**Purpose:** Students affirm correct answers. Students find errors. Students reflect on learning.

Teacher Actions

- "Star the vocabulary word for the problem if you wrote it on your paper. If you didn't write it, you can write the vocabulary word now."
- *"Star the first part of the problem if you have it correct. If you don't have it correct, circle it and fix that part of the problem now."*
- *Repeat the above steps for each part of the problem, until all parts of the problem have been processed.*

Adapted from Five Easy Steps to a Balanced Math Program by Ainsworth and Christinson

Students Actions

- Actively correct DMR --correcting working step by step

Reflection

- Write a reflection on how you did on the problem. It needs to be a complete specific sentence. (I had trouble with… or I understand…)
- Students stand up after writing reflections and then share with a partner. This shows student understanding of the concept. Listen to students and ask one with a specific reflection to share with the class.

Key Statement

- The student states or records the key concept statement
- Students restate concept statements together
  Example: The value of a digit is determined by its position.
  Repeat concept statement (partner and as a class)
- Repeat procedures for all of the math review problems

Daily Math Review Quiz

The Math Review Assessment

Timing	About every 10 days (ex. Every other Friday)
Number of Problems	2-4 problems for each category that has been on the Daily Reviews
Correcting the Assessment	Teacher corrects - **specific and timely feedback should be given** Student correct ○ provide immediate and specific feedback. ○ Have students star for correct answers and check for incorrect answers. ○ Collect and review assessments
Student Reflection and Plan *This will need to be modeled.*	Students write a reflection on the back of their assessment based on how they did. They should focus on what they did well, as well as, what areas they need to improve on. **Improvement Plan** Students write underneath the reflection their plan for improvement on the areas they need to work on.
Teacher Analysis of the Assessment	**Category Determination** 80-90% of the students scored 100% on a category then the category will not be in Daily Math Review during the next cycle.

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Daily Math Review

Sample Key Statements

When creating key statements remember:

- Use student-friendly language (not all examples below are student-friendly).
- The statements are the conceptual reasoning behind the skill.

Category	Key Idea
Expanded Notation	• The value of a digit is determined by its position.
Scientific Notation	• Powers of 10 move the decimal point. • Scientific Notation is used for very large or very small numbers.
Regrouping	• A quantity can be rearranged in different ways and it is still the same quantity.
Multi-Digit Multiplication	• Partial products can help determine an answer to a multiplication problem. • The value of a digit is determined by its position.
Multiplying Decimals	• Multiplying the whole numbers helps place the decimal. • A reasonable answer helps place the decimal.
Division	• Division indicates the number of equal pieces in a given quantity.
Division with Remainder	• A remainder is part of the divisor expressed as a fraction or a decimal.
Adding Unlike Fractions	• A common denominator shows same-size pieces.
Equivalent Fractions	• A fraction can be represented in various equivalent ways.
Telling Time	• A clock uses a base of 60. • Each number on a clock represents a group of 5.
Money	• Counting money involves skip counting by 1's, 5's, 10's, and 25's interchangeably.
Geometry	• Shapes are classified by their attributes. • The area is the measure of covering expressed in square units. • Perimeter is the distance around a shape expressed in linear units.
Area	• The area formula comes from the perpendicular relationship of base and height.
Algebra	• An equation shows two equivalent quantities.
Integers	• Adding the opposite helps with subtracting integers.
Data	• Mean, median and mode tell about the center of data.