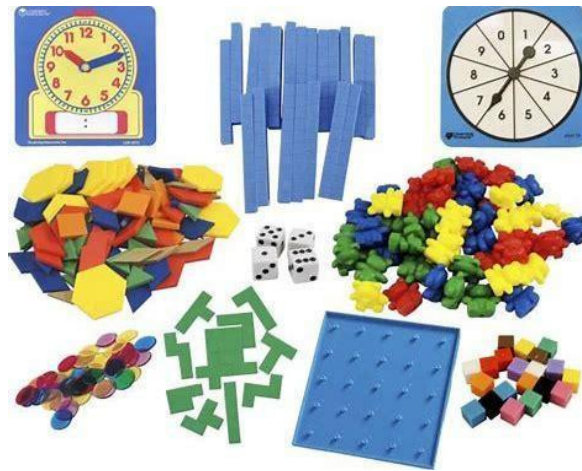




MISSISSIPPI
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Ensuring a bright *future* for every child

Mississippi Mathematics Manipulatives Manual Featured Activity



“Edible Base 10”

2.NBT.1

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As we continue our efforts to develop high-quality instructional materials (HQIM) and resources, the Mississippi Department of Education (MDE), through the Academic Education Office, would like to showcase instructional practices and activities that foster conceptual understanding through the use of manipulatives in the mathematics classroom.

The **Mississippi Mathematics Manipulatives Manual** features activities meant to serve as short, hands-on procedures that may be implemented before, during, or after a lesson to support the teaching and learning process of the Mississippi College- and Career-Readiness Standards (MCCRS) for Mathematics. Alignment with the MCCRS Scaffolding Document has been included for additional support. Teachers may contact staff at the MDE if they would like to borrow manipulatives for classroom use.

Teachers may modify these activities to meet the needs of the students they serve and their instructional delivery model (virtual, in-person, or hybrid).

Special Thanks:
Lori Hamill
Pontotoc City School District

Edible Base 10



MANIPULATIVE(S):

- Glue
- Graham Crackers
- Miniature Marshmallows (any color)
- Pretzel Sticks
 - **Note:** Teachers must follow all district /school guidelines & protocols as it relates to providing food to students. This includes, but is not limited to, advanced written parental and administrative approval, and confirmation of any food allergies for all students if they decide to provide UNTOUCHED food items for snacking at the conclusion of the Activity.

GRADE LEVEL OR COURSE

TITLE:

CCR Mathematics Grade 2

DOMAIN AND CLUSTER HEADING:

Number and Operations in Base Ten (NBT):
Understand place value

STANDARD(S):

2.NBT.1: Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones, e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:

- a. 100 can be thought of as a bundle of ten tens — called a “hundred.”
- b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundred (and 0 tens and 0 ones).

PREREQUISITE SKILLS:

1. Be able to model place value of ones, tens, and hundreds.
2. Recognize the value of a digit.
3. Use two-digit numbers to represent tens and ones.
4. Make a bundle of 10 ones.
5. Know the numbers 10, 20, 30, 40, 50, 60, 70, 80, and 90 refer to one, two, three, four, five, six, seven, eight, and nine tens and 0 ones.

ACTIVITY:

Note: Activity Sheets Attached

1. Write a number on the board. (Consider starting with a two-digit number). Then have students model it where each pretzel stick represents a ten, and each marshmallow represents a one. (For example: $36 = 3$ pretzel sticks and 6 marshmallows).
2. Once students are comfortable modeling two-digit numbers, write a three-digit number on the board. Ask students to say the number. Then ask them would they represent 100 using their food materials? Look for students to answer "10 tens or 10 pretzel sticks." Try another example, like the number 213. Which would be represented by 21 pretzel sticks, and 3 marshmallows.

3. Next, have students line up two sets of 10 pretzels, then lay out 1 ten/pretzel stick, and 3 marshmallows. Model that each group of ten pretzels can be traded for a graham cracker (hundred). *For example: 213 is 2 graham crackers, 1 pretzel stick, and 3 marshmallows.*
4. Have students to continue practicing other 3-digit numbers. Remind students to always trade 10 marshmallows for a pretzel stick, and if they get 10 pretzels, they can trade those for a graham cracker.
5. Once students have mastered the concept, they may use their Activity Sheet to model their own 3-digit numbers, and to glue the food items down to represent hundreds, tens, and ones.

QUESTIONS TO CONSIDER:

- How many units or ones (miniature marshmallows) does it take to make a "rod" or a 10 (one pretzel stick)?
- How many "rods" or tens (pretzel sticks) does it take to make a flat or a hundred (graham cracker)?

RESOURCES:

- [Mississippi Mathematics Scaffolding Document](#) (Grade 2, Page 5)
- [2016 MCCRS for Mathematics](#)

Optional: The University of Mississippi's Center for Mathematics and Science Education has an extensive inventory of math (and science and technology) tools and manipulatives that teachers may borrow for classroom use at no charge. Click the link below to access the inventory list and complete a check-out request.

- [CMSE Manipulatives](#)

BEYOND THE ACTIVITY:

- **Assessment(s):** Prior to the start of class, create several number models using the food items listed in the Manipulatives section above and have students identify the number that is represented.
- **Extension(s):** Have students work together to identify how they would use their food items to represent a number above 999.

Activity Sheet

Edible Base 10

Student Name: _____

My Number _____

Flat/Hundred



Rod/Ten



Unit/One



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