



MISSISSIPPI
DEPARTMENT OF
EDUCATION

Ensuring a bright *future* for every child

Mississippi Mathematics Manipulatives Manual Featured Activity



“Domino Distributions”

S-ID.1

Spring 2021

Carey M. Wright, Ed.D.
STATE SUPERINTENDENT OF EDUCATION

Nathan Oakley, Ph.D.
CHIEF ACADEMIC OFFICER

Wendy Clemons
EXECUTIVE DIRECTOR
Office of Secondary Education, Dropout Prevention, & Professional Development

Marla Davis, Ph.D.
STATE DIRECTOR OF CURRICULUM AND INSTRUCTION
Office of Secondary Education

Tommisha Johnson
K-12 MATHEMATICS CONTENT DIRECTOR
Office of Secondary Education

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:
Elise Brown
University of Mississippi/Mississippi Department of Education

Domino Distributions

MANIPULATIVE(S):

- Chart/Poster Board Paper
- Dominos
- Markers



GRADE LEVEL OR COURSE

TITLE:

CCRS Mathematics Algebra I

DOMAIN AND CLUSTER HEADING:

Statistics and Probability - Interpreting Categorical and Quantitative Data (S-ID)*:

Summarize, represent, and interpret data on a single count or measurement variable.

*Modeling Standard

STANDARD(S):

S-ID.1: Represent and analyze data with plots on the real number line (dot plots, histograms, and box plots). *

PREREQUISITE SKILLS:

- Know how to determine the mean, median, mode, and range for a set of data, and decide how meaningful they are in specific situations.
- Know how to identify trends in data.
- Know how to perform basic operations involving rational numbers.
- Know how to identify limitations, or misuses, of visual representations of data.

ACTIVITY:

Note: Prior to this activity, students should have a solid foundation of drawing and labeling dot plots, histograms, and box-and-whisker plots.

1. Group students into teams and ensure students have access to a set of dominoes (*see the "Resources" section below for printable or virtual dominoes*), chart/poster board paper, and a marker.
2. Assign each team a different data representation (i.e., dot plot, histogram, box-and-whisker plot) in which they will display their data set.
3. Allow teams time to explore the dominoes, and to assign a numerical value to each domino based on the dot pattern. *For example: The domino displayed in Image 1 has seven (?)*

on one side and one (1) on the other. Students can assign this domino a value of seventy-one (71).

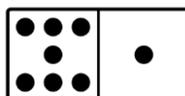


Image 1

4. After students have created their data set by assigning numerical values to each domino, have them create their data representation as assigned. This will be done on chart/poster board paper. Then have students to post their assigned data representation to the classroom wall (or where the remainder of the students may view their work).
5. Once all teams have completed their work, have students complete a Gallery Walk and visit other teams' "posters" to compare their data sets with others. *Note: To guide the whole group discussion in step 6 below, provide students with a list of purposeful questions/prompts to answer as they conduct their Gallery Walk.*
6. Have a whole group discussion with students on the use of each data representation such as similarities and differences. (See the "Questions to Consider" section below for additional possible discussion items.)

QUESTIONS TO CONSIDER:

- Which representation made it easiest to identify trends? Justify your response.
- Was one representation more useful than others? Justify your response.
- Did the way you selected your dominoes' value make a difference in your final representation? Justify your response.
- How might your representation change if you flipped the domino value (use 17 instead of 71) or used it as a fraction ($\frac{7}{1}$ or $\frac{1}{7}$) instead of a whole number? Justify your response.

RESOURCES:

- [Mississippi Mathematics Scaffolding Document](#) (Algebra I, Pages 78-79)
- [2016 MCCRS for Mathematics](#)
- [Virtual Dominoes](#)-Nrich
- [Printable Dominoes](#)-Studenthandouts.com
- [Dominoes Flash Cards](#)-Mathwire.com

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:

- **Accommodation(s):** Decrease the number of dominoes for students in need of intervention.
- **Extension:** Once students have completed their distribution of the data, have students extend their thinking by writing a final reflection about the benefits of using each representation (dot plots, histograms, and box-and-whisker plots).