

Teacher Guide

BMC Issue: #54, Partitions

Subjects: Set Theory, Number Theory

Grade Level: 4th grade and up

Topics: Parity, Subsets

Lesson Aim/Objectives:

- Partitions of maps and sets
- Develop terminology for set theory
- Observe the partitioning of natural numbers
- Use properties of numbers for forming subsets

Common core standards:

CCSS.MATH.CONTENT.6.SP.5.a Statistics and Probability Summarize numerical data sets in relation to their context, such as by: Reporting the number of observations.

HS Modeling with Geometry G-MG Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

The Real Number System N-RN Extend the properties of exponents to rational exponents. Rewrite expressions involving radicals and rational exponents using the properties of exponents.

CCSS.MATH.CONTENT.HSN.Q.A.2 Define appropriate quantities for the purpose of descriptive modeling.

CCSS.MATH.CONTENT.HSA.SSE.A.1 Interpret expressions that represent a quantity in terms of its context.

Practices

2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
7. Look for and make use of structure.

Materials:

- Print
 - BMC issue
- Bring
 - Pens or pencils
 - Any paper
 - Number cards - numbered 1 - 20 (optional)
 - Scissors (optional)

Terms:

Set Theory: partition, set, subset

Number Theory: parity, even-odd, divisible, multiple

Instructions:

1. Read activities in newsletter
2. Register for BMC meeting to get Zoom link
3. Instruct students to consider the hosts as guests in the classroom.
4. Pass out a copy of newsletter to each student.
5. Tell students we encourage participation; they should share results, drawings, and ask questions. They can show their papers to the camera.

Notes:

- Test technology; if problems arise, please let hosts know.
- Use the recap issue to revisit problems in the classroom
- Provide feedback