

Lesson 21: Game Night Seating Plan (Optional)

Standards Alignments

Addressing 3.MD.B.3, 3.OA.A, 3.OA.A.3

Teacher-facing Learning Goals

- Make choices and assumptions.
- Represent data using scaled bar graphs to communicate results.
- Solve real-world problems involving equal groups.

Student-facing Learning Goals

- Let's plan a game night.

Lesson Purpose

The purpose of this lesson is for students to use their understanding of equal groups to solve a design problem.

This lesson is optional because it does not address any new mathematical content standards. It does provide students with an opportunity to apply precursor skills of mathematical modeling.

In previous lessons, students created scaled bar graphs and solved problems involving equal groups. In this lesson, they use these ideas as they make a seating arrangement.

Students first examine a diagram showing equal groups and consider the situations it could represent. Upon learning that the diagram represents a seating chart, they consider the information needed to set up the seating arrangement for a game night. Students then plan a seating arrangement given some constraints—the total number of game tables and a combination of games that each involve a certain number of players—and create a display to present their solution. Finally, students create a scaled bar graph to represent the number of players that can play each game in their seating solution. Throughout the lesson, students make sense of problems and persevere in solving them (MP1).

Students model with mathematics as they define quantities and variables that are relevant in the situation, communicate their solution, and translate a mathematical solution back into context (MP4).

Access for:



Students with Disabilities

- Representation (Activity 1)



English Learners

- MLR8 (Activity 1)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes or counters: Activity 1
- Inch tiles: Activity 1
- Tools for creating a visual display: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	25 min
Activity 2	10 min
Lesson Synthesis	10 min

Materials to Copy

- Centimeter Grid Paper - Standard (groups of 2): Activity 1
- Centimeter Grid Paper - Standard (groups of 2): Activity 2

Teacher Reflection Question

How did the modeling task support collaboration between students?
