

## LET'S PARTY!

### Performance Standard (8A/8B/8C).D

Complete a chart for seating people at a party and make predictions based on the chart accordingly:

- *Mathematical knowledge*: know how to create a table; describe the pattern and function rule for seating people at tables that seat 4 or 6 people,
- *Strategic knowledge*: use appropriate strategies to complete the seating chart, and
- *Explanation*: explain completely and clearly what was done and why it was done.

### Procedures

1. ***In order to describe numerical relationships using variables and patterns (8A), interpret and describe numerical relationships using tables, graphs and symbols (8B), and solve problems using systems of numbers and their properties (8C)***, students should experience sufficient learning opportunities to develop the following:
  - Identify a number pattern, both increasing and decreasing, and extend the number sequence.
  - Make generalizations given a specific pattern,
  - Create describe, and extend patterns,
  - Create a table that describes a function rule for a single operation, and
  - Solve problems with whole numbers using appropriate field properties.
2. Provide each student with a copy of the “Let’s Party” recording sheet and rubric. Have students review and discuss the task to be completed and how the rubric will be used to evaluate it.
3. Discuss the directions for each part of this task. Students can read this or the directions can be read to them. Explain to the students that they are looking for a pattern. They may want to draw pictures to help them see the pattern more clearly. The three parts of the task are:
  - Part A: complete a chart to show the number of people that can be seated at 1 to 7 tables when the pattern is 1 table = 4 people; 2 tables = 6 people.
  - Part B: predict how many people will be able to be seated at 11, 14, and 17 tables and how many tables will be needed to seat 50 people.
  - Part C: explain how the chart was determined and how it was used to answer the questions in Part B.

Number of Tables	Number of People
1	4
2	6
3	10
4	12
5	16

Number of Tables	Number of People
6	18
7	22
11	34
14	42
17	52

4. Evaluate each student’s work using the rubric as follows and use the guide on the rubric to determine the performance level:
  - 4 = show understanding of number pattern to complete chart; uses correct calculations to complete chart; explanation is clear and complete; show all steps used to complete chart.
  - 3 = show most of the steps used to complete the chart; minor calculation errors made; explanation only hinted at a justification of the process.
  - 2 = show no more than  $\frac{1}{2}$  of the steps used to complete the chart; use correct process to make calculations but major errors made; explanation but no justification.
  - 1 = attempt made to complete the task but major errors made.
  - 0 = task was not attempted.

**Examples of Student Work not available**

**Time Requirements**

- One class period

**Resources**

- Copies of the “Let’s Party” recording sheet
- Mathematics Rubric

NAME \_\_\_\_\_ DATE \_\_\_\_\_

### LET'S PARTY

**Part A:** You have been asked to set up tables and chairs for a party. All of the tables are square so you can seat four people at each table. However, if you put two tables together, you can now seat 6 people at that table. Using this information, fill in the following chart.

Number of Tables	Number of People
1	4
2	6
3	
4	
5	
6	
7	

**Part B:** Using the information from the chart, make a few predictions.

1. How many people will be able to be seated at 11 tables?
2. How many people will be able to be seated at 14 tables?
3. How many people will be able to be seated at 17 tables?
4. How many tables will be needed to seat 50 people?

**Part C:** Now, in words, explain on the back of this sheet how you figured out your chart and how you used that information to answer the rest of the questions.