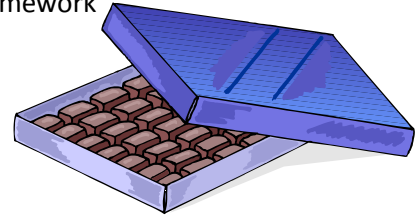# Performance Task: The Candy Box

Approximately 2 days

STANDARDS FOR MATHEMATICAL CONTENT

MCC2.OA.3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.

MCC2.OA.4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

STANDARDS FOR MATHEMATICAL CONTENT

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Mathematical Practices 1 and 6 should be evident in EVERY lesson

BACKGROUND KNOWLEDGE

Students should have had multiple experiences with repeated addition. This task serves as the final opportunity for students to express their understanding of the connection between arrays and repeated addition.

ESSENTIAL QUESTIONS

- What is an array?
- What is repeated addition?
- How can rectangular arrays help us with repeated addition?
- How are arrays and repeated addition related?
- How does skip counting help us solve repeated addition problems?
- How can we model repeated addition on the number line?
- How can we use model repeated addition equation with an array?

MATERIALS

- Task Description
- Half a sheet of chart paper per student.
- Various 1inch by 1 inch construction paper squares

GROUPING

Individual

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Part I
Bring in various containers from home that utilize arrays, including candy boxes, egg cartons, etc. Show these containers to students. Have students discuss why they think the boxes are organized in this way.

Give students this task:

The candy store wants to package candies in different sized boxes. The owner is thinking about the different rectangular boxes he could use. How do you think the owner should organize the candy? Show the different ways that the candy store owner could package __ candies in a rectangular box and construct a viable argument to persuade the owner to organize the candy the way that you selected.

Part II
Give students materials and allow for students to come up with as many ways possible for their number. Encourage students to use the chart paper to demonstrate the ways and their strategy use. Have students demonstrate the candy boxes they would create and describe them in rows and columns, repeated addition, and skip counting. Ask students questions from the formative assessment list.

Part III
After students have completed the task, choose students who used a variety of strategies to share with the class. Keep a class chart to document the different ways the candy store owner could arrange his box. Ask students what they notice about their number.

FORMATIVE ASSESSMENT QUESTIONS

- How many total candies does the candy store owner want in each box?
- How have you arranged your squares?
- How many rows do you have?
- How many columns do you have?
- How can you show this through repeated addition?
- Is there another way you could arrange the candy box?
- Is there only one way to arrange the candies?

DIFFERENTIATION

Extension
- Allow the students to create a 3-D model of one of their candy box designs. Then, allow students to imagine that they are trying to sell the box model to the owner. Have them write a proposal explaining their model and why it is the best choice for the candy store.

Intervention
- Some students may need to use the example boxes that you brought in from home to gain ideas about the arrangement of the candy box.

One Inch Grid

Name: _____

The candy store wants to package 24 candies in every box, with each box holding a perfect array of candies. The owner is thinking about the different rectangular boxes he could use and how the candies would be arranged. How many different boxes can the owner use? Explain using numbers, pictures, and words.