Let's "Half" a Celebration!
Amy Gervasi

CONTENT AND TASK DECISIONS

Grade Level(s): 2nd (can also be used in 1st and 3rd)

Description of the Task: Students will explore the concept of fractions by partitioning cakes into halves of different shapes. Student will develop a working definition for equivalent parts.

Indiana Mathematics Content Standards:
1.G.4: Partition circles and rectangles into two and four equal parts; describe the parts using the words halves, fourths, and quarters; and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of, the parts. Understand for partitioning circles and rectangles into two and four equal parts that decomposing into equal parts creates smaller parts.

2.G.5: Partition circles and rectangles into two, three, or four equal parts; describe the shares using the words halves, thirds, half of, a third of, etc.; and describe the whole as two halves, three thirds, four fourths. Recognize that equal parts of identical wholes need not have the same shape.

3.G.4: Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole (1/2, 1/3, 1/4, 1/6, 1/8).

Indiana Mathematics Process Standards:
PS.1: Make sense of problems and persevere in solving them.
PS.2: Reason abstractly and quantitatively.
PS.3: Construct viable arguments and critique the reasoning of others.
PS.4: Model with mathematics.
PS.5: Use appropriate tools strategically.

Mathematics Content Goals: Students will understand that when we partition a whole into two parts of equal size, we have created halves. These two halves form one whole. As long as these criteria are met, the shape of the pieces will not have to be the same every time.

Language Objectives: Students will write the results of their partitioning of the cakes and what patterns or problems they encountered during the activity. Students may also use pictures and symbols to represent their observations.

Materials: our class mascot Checkers the Clown (can be any real or imaginary person), 10 rectangular cake cutouts per group, 10 circular cake cutouts per group, extra cake cutouts for mistakes, scissors for each students, Math Journals, mentor text—*Give Me Half!* by Stuart J. Murphy

THE LESSON

Before:
- Student Actions
    1. Watch a short clip inviting the class to a birthday party for our mascot Checkers. This can be

teacher- or student-created previous to the lesson. I have my students from the year before make a video for my current students.
2. Turn and talk to your partner about your most recent birthday party. Discuss the essential components of a great birthday party.
3. As a class discuss the elements of a great birthday party.

- Teacher Actions
  1. Show pictures of birthday parties.
  2. Ask: How do you know that these are pictures of birthday celebrations? What clues are shown?
  3. Briefly discuss the idea of birthday party supplies, especially birthday cakes.
  4. Record ideas on the board or chart paper, much like a shopping list.

During:
- Student Actions: Stage 1
  1. Students will "share" the cake cutout with their neighbor by cutting the cake into halves. Students will be given time to explore different ways of halving the cake.

  2. Turn and Talk: Did you share fairly with your partner? What does "fair" really mean? How do you know if the parts are halves?

- Teacher Actions: Stage 1
  1. Ask: How many ways can you share or cut the cake with your partner?

  2. Wait for 3-5 minutes! Do not move around the room, yet. Allow students to think for themselves without teacher hints of help.

  3. After the initial "free think", travel among your groups asking open-ended questions about fairness, equal parts, and halves. Example: How do you know that you have been fair in the sharing of your cake? How many parts of the whole cake are there? Do you know of another way to describe a whole cake cut into two parts? (halves)

After:
- Student Actions
  1. In their Math Journals, students will demonstrate with words, pictures, and symbols the different ways to cut their cake in half.
  2. Students will orally share their findings with the class.
  3. Encourage students to ask each other questions about their ideas.

- Teacher Actions
  1. Ask: What determines that a piece of the cake is called a half? What must be true of the pieces of cake?
  2. Read aloud the mentor text *Give Me Half!* by Stuart J. Murphy.

ASSESSMENT

- Students will apply their understanding of halves to a new cake shape—a circle!
- Students will "cut" their cake into as many different halves as possible.
- Ask: How did the new shape of the cake affect your outcomes? What challenges did it pose? Did it affect our definition of halves? Why or why not?
- Students will complete an exit slip.

Name: _____

Draw a picture of a cake cut into halves.

How do you know it is partitioned into halves?