**Grade Level and Unit:** Grade 2; Unit 7

**Session and Description of Lesson Tasks:** Session 2.1

**Materials needed:**

* Square pieces of paper (3 per student)
* Crayons
* 4 Quarters
* Clock
* Chart: “Different Ways to Show Fourths”

**Grouping Decisions:** Students will collaborate in pairs, but independently create their own models of ¼.

**Mathematical Objective(s)**

What are your core mathematical ideas for this lesson? What do you intend all students to know and understand about mathematics?

* Students will be able to explore different ways to make fourths of a square.
* Students will be able to recognize the equivalence of different fourths of the same object.

**Language Objectives:**

What mathematical language will you model during the lesson? What mathematical language do you expect to hear during student discourse?

* Students will be able to verbally use the term ‘one fourth’ when explaining equal parts of a square.
* Students will be able to write the notation ¼ when recording shaded regions of a square.

**Connect and Anticipate: In what ways does the lesson build on students’ previous knowledge? What student strategies and responses do you anticipate? What misconceptions and struggles might students have?**

* Builds upon students’ knowledge of one half and the idea of dividing a square and circle into equal parts.
* Students may struggle with the notation portion of the lesson.
* Students may also struggle with recognizing that ¼ of a square that is divided in half horizontally is THE SAME amount as ¼ of a square that is divided in half diagonally.

**Focus Questions**

Consider what questions you will use to focus on students’ thinking to encourage sense-making and discourse.

“*What does it mean to divide something in half?*”

“*If I want to share my sandwich with another person, why is it ‘fair’ the break it in half?”*

**LAUNCH: To introduce the activity**

* Distribute a piece of square paper to each student and ask students to fold it so that is makes two equal pieces.
* Guiding questions: *“What shape are your halves?” “Did your fold divide the square into equal triangles or equal rectangles?”*
* Students make predictions about what their squares will look like when they fold them in half again.
* “*When something is dividing into four equal pieces, each piece is called one fourth”*
* “½ is how we write one half, so ¼ is how we write one fourth”
* Students label each of the fourths in their square as 1/4 THEN color each piece a different color.

**EXPLORE: To assess students’ understanding and to advance their thinking as they work independently, in partners or small group**

* Students create additional ways to create ¼ using additional squares.
* Challenge students to work through new ways using the co-created chart as a model.

**SUMMARY: To facilitate the analysis and synthesis of ideas shared at the end of the lesson**

* Gather as a class to discuss the chart “Different Ways to Show Fourths.”
  + *Do you think you would get more of sandwich if you took ¼ of this sandwich (point to the one divided into 4 rectangles), or this one (point to the one divided into 4 squares)?*

**Evidence: How will you know what students understand? What evidence will you collect?**

(If there is an exit task, what will be its focus to inform your instructional next steps?)

* Take a poll of students based on the questions above. Record the results on “It would be the same amount of sandwich” and “No, one is bigger than the other.” This information will be used to inform the next steps. Teacher can see what students need additional support to understand that ¼ no matter what the shape is an equal amount of area

**Notes and Reflections:**