

Name: \_\_\_\_\_

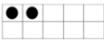
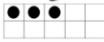
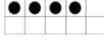
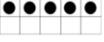
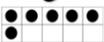
*Mathematics: The Language of STEM*  
Subitizing Numbers 1-10

**CONTENT AND TASK DECISIONS**

**Grade Level(s):** Kindergarten

**Description of the Task:** Students will show numbers 1-10 in different arrangements and display the representations on a math wall or board in their classroom. They will use the board to discuss and make arguments about how each different pattern/arrangement does show the same number and they will recognize the groups and be able to name how many without counting.

*\*This lesson is designed to be repeated over multiple days in order to create representations of all numbers 1-10. Below is a sample of how you can choose to arrange the students' representations in the classroom.*

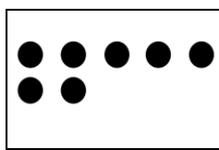
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**Indiana Mathematics Content Standards:** K.NS.6: Recognize sets of 1 to 10 objects in patterned arrangements and tell how many without counting

**Indiana Mathematics Process Standards:** PS.3: Construct viable arguments and critique the reasoning of others.

**Mathematics Content Goals:** Students will understand that numbers can be patterned in multiple ways and will be able to recognize and tell how many in groups of 1-10 without counting objects.

**Language Objectives:** Students will discuss and explain with a partner and will the whole group why two different patterns of a number are the same amount, even with different organization. They can use the sentence frame "This \_\_\_\_\_ is the same as this \_\_\_\_\_ because \_\_\_\_\_."



Example: "This seven is the same as this seven because you can see 4 on this side and 3 on the other side and this one has seven like a ten frame."

**Materials:**

Number posters (with or without ten frames)

3x5 blank note cards or sticky notes

Colored counters

Dominoes

Dot Cards

Markers

**THE LESSON**

**Before:**

Show students a domino and ask them, "How many dots are there all together?" After all students have counted, ask students to tell you their answer.

Show students a dot card or another representation of the same number of objects and ask them "How many are their all together?"

Show both examples and ask students, "Are these the same?"

Explain to the students that today, they will be looking at the number(s) \_\_\_\_\_. Students will need to come up with multiple ways to show the number(s). They can use the colored tokens to do their work, but they will need to record their idea or representation of that number on a note card or sticky note to share with the class. They can draw any object, stars, dots, squares, strawberries, ANYTHING!

- Student Actions
  - Students will count the number of dot/objects by looking at the domino/card. Some may use one-to-one correspondence; some may already know (subitize) how many are on the domino.
  - Students will show that they are finished thinking by placing their thumb up against the chest.
  - Students will explain how they came up with their number. They can demonstrate for their peers and also use words to explain how they came up with the number of objects/dots.
  - Students will turn and talk with a math partner about whether they think they are both the same or if they are different and why.
- Teacher Actions
  - The teacher will observe how students are counting the objects/dots. Are they counting

- by ones to get their answer, do they just "know" and put their thumb up quickly?
- The teacher will encourage all students to have an answer. If needed, prompt with, "do you need more time? Okay."
- The teacher will record student answers on the board when they say how many they had.
- The teacher will ask students to explain how they came up with their answer. "Show me how your brain thought about that."
- The teacher will listen in to student's conversations and discussions about why or why not the two representations are the same.

### During:

Students will work individually with colored tokens to come up with varying ways to represent the given number. They will need to choose ONE way they would like to record their answer on the note card or sticky note and put it up on a board to display for all students.

- Student Actions'
  - Students will manipulate colored tokens to come up with varying representations of a certain number between 1-10.
  - Students will record their representation on a note card or sticky note. (Students can write their name on the back side of the card)
  - Students will post their representation on a board for discussion.
- Teacher Actions
  - Observe students as they make their patterns and representations of different numbers.
  - Ask questions, "How many did you make?" "How do you know it's that many?" "Are these two the same or different?" "How are they the same or different?"

### After:

Students will gather together in front on the display of all students' representations of the given number(s) and have a class discussion about the different arrangements.

- Student Actions
  - Students will defend and explain why their representation shows a given number.
  - Students will discuss together if they notice two are the same or how two are different.
- Teacher Actions
  - Ask questions:
    - What do you notice about these representations of the number \_\_\_\_\_?
    - How do you know they are all the number \_\_\_\_\_?

## ASSESSMENT

Observe:

Ask: