STEM 433/533 Lesson Planning Template

(Complete answers in Purple font)

Name: Nijeeia Farland	**Grade:** Kindergarten	**Topic:** Numbers and Number sense

Brief Lesson Description: Students will investigate and describe part-whole relationships from numbers up to 10 with fluency by creating a problem using pizza slices. They will be given slices of different kinds of pizza and the students will need to recognize the number of each kind of slice they have and then figure out the whole. Students will participate in a series of formative assessments to determine student understanding. This three-day lesson plan will feature videos and include activities both hands-on and collaborative.

Specific Learning Outcomes:

- Recognize and describe with fluency part-whole relationships for numbers up to 5 in a variety of configurations. (a)
- Investigate and describe part-whole relationships for numbers up to 10 using a variety of configurations. (b)

How did this lesson develop as a result of your examination of research and data about employing culturally sustaining pedagogical strategies? (Think equal opportunity, student interests, race, gender, disabilities etc.)

This lesson considers all students learning levels and needs. Students will be placed in tabled groups for collaboration and all necessary materials will be brought to the students at their tables. All students will be provided with the same materials for each assignment to ensure equitable learning opportunities.

Narrative / Background Information

Prior Student Knowledge: Students should apply their knowledge of numbers and number sense to recognize and describe a variety of problems. Students will need to know how to count to 10 and combine/separate groups to create a number. Students will be given a part-whole mat as a visual aid. Students will need to know how to recognize and name the number of objects without counting.

Math VA SOL:	**Visual Arts VA SOL:**	**NCTM Standard:**
K.4 The student will a) recognize and describe with fluency part-whole relationships for numbers up to 5 b) investigate and describe part-whole relationships for numbers up to 10	K.4 The student will describe personal connections to and interests in visual art.	Grade K-2 Expectations: In grades K-2 each and every student should- develop a sense of whole numbers and represent and use them in flexible ways, including relating, composing, and decomposing numbers

Specific Problem-Solving Strategy being used:

- Students will apply their understanding of numbers and number sense to recognize and describe a variety of problems.
- Students will accurately apply their strategy.

Possible Preconceptions/Misconceptions:

- Students will not apply for numbers in the correct places.
- Students may not understand how to write out problems from part-whole mat to number sentence.

LESSON PLAN – 5-E Model

ENGAGE: Opening Activity – Access Prior Learning / Stimulate Interest / Generate Questions: (Discrepant events are awesome to use here)

Day 1

Approximate Time: 10-15 minutes

Students will be introduced to part-whole with an activity that uses zero numbers. We will utilize images of everyday objects to teach the concept of placing a "part" in one box and the "whole" in another. This will help students visualize parts and whole before throwing in numbers.

Approximate Time: 10-15 minutes

Students will color code their own part-whole mat. This allows the students to visualize the different areas on the

mat by associating them with a color.

- What color is the "whole"?
- What color is the "part"?
- What is a "part"?
- What is a "whole"?
- Give me an example of a "part."
- Give me an example of a "whole."

Approximate Time: 3-5 minutes

Students will watch the video, "I know my Number Bonds 10| Number Bonds to 10|Addition Song for Kids Jack Hartmann" (3:00) introducing them to the concept of part and whole while adding numbers. This video will further introduce them to the idea of splitting part and whole even without a part-whole mat.

https://www.youtube.com/watch?v=lD9tjBUiXs0 (I know my number bonds 10|number bonds to 10|Addition song for kids Jack Hartmann)

EXPLORE: Lesson Description – Materials Needed / Probing or Clarifying Questions:

Day 2

Approximate Time: 30 minutes

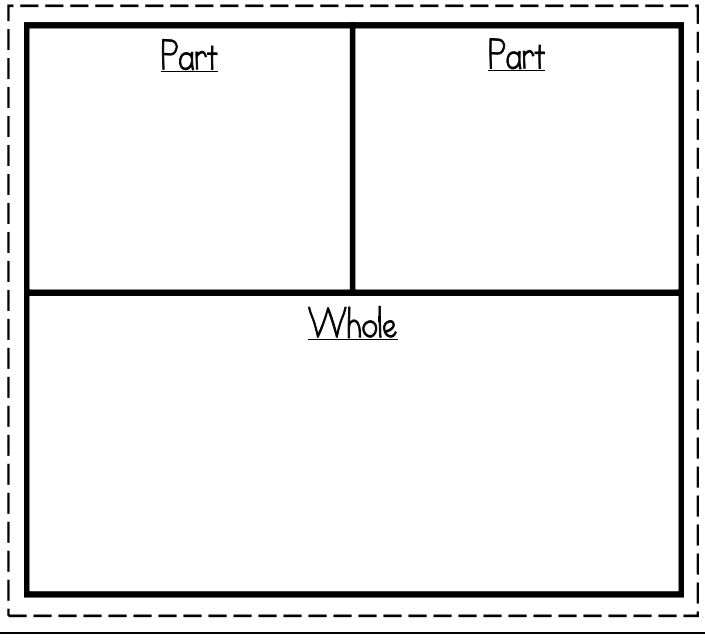
Materials Needed:

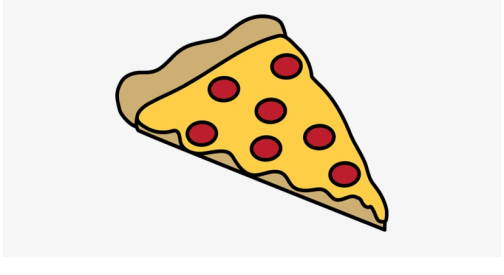
- Pepperoni Pizza Slices
- Cheese Pizza Slices
- Part-Whole Mat
- Dry erase marker
- Dry erase eraser

The teacher will distribute whole pizza with different pizza slices (Cheese and Pepperoni) to each student. The students will place the whole pizza on "whole" part of the mat. Students will then place a number of each slice in the "part" area. Students will practice counting and seeing how parts make the whole by using different variations of pizza slices in each part area. Once students have done this a couple of times the "whole" pizza will be taken away and the students will get to pretend they are at a pizzeria. The teacher will explain the directions as follows:

- Welcome to Ms. Farland's Pizzeria! I will be coming around to take your pizza orders so we can figure out our "whole".
- After you received your order, I want you to check and make sure it is correct. What part of your pizza are your two parts?
- Correct excellent! Now figure out how many cheese slices you have and write that number in a "part" area of your part-whole mat, then you will do the same with the pepperoni slices.
- Now it's time to put your pizza slices together and see how many slices you have to create your "whole" pizza.
- Once you have figured out your "whole" number you should write it in your "whole" box
- Great job! Now you may pick a partner and discuss.

Below are some examples of the worksheets needed.





EXPLAIN: Concepts Explained and Vocabulary Defined:

Approximate time: 3-5 minutes

Students will watch the video, "I know my Number Bonds 10| Number Bonds to 10|Addition Song for Kids Jack Hartmann" (3:00) introducing them to the concept of part and whole while adding numbers. This video will further introduce them to the idea of splitting part and whole even without a part-whole mat.

https://www.youtube.com/watch?v=lD9tjBUiXs0 (I know my number bonds 10|number bonds to 10|Addition song for kids Jack Hartmann)

The teacher will then pull out a part-whole map and go into further detail on where each number goes and how to break it down. Once the teacher has done this the students will have an open discussion about it and practice understanding the vocabulary and how to dissect the problem.

Vocabulary: number, part, whole, zero, one, two, three, four, five, six, seven, eight, nine, ten

ELABORATE: Applications and Extensions:

Day 3

Approximate Time: 20 minutes

Students will complete a part-whole blooket. The teacher will help students get set up to start the blooket and will use the data to determine what levels the students are on.

Approximate Time: 25 minutes

The teacher will facilitate small group instructions for any struggling students, students who seem to be on track and gifted students. The students will take turns in small groups play a part-whole game. The first group will be the gifted students and those who seemed to be on track. The second group will be the ones who are struggling, they will be doing the same activity just simplified and focusing more on placements instead of numbers.

EVALUATE:

Day 4

Formative Monitoring (Questioning / Discussion):

Approximate Time: 15 minutes

Students will complete the worksheet bellow to further practice part-whole relationships. While the students are completing this The teacher will be walking around observing the students. Students who finish the work early will be able to read at their desk, will be in small groups with teacher, or play a part whole game.

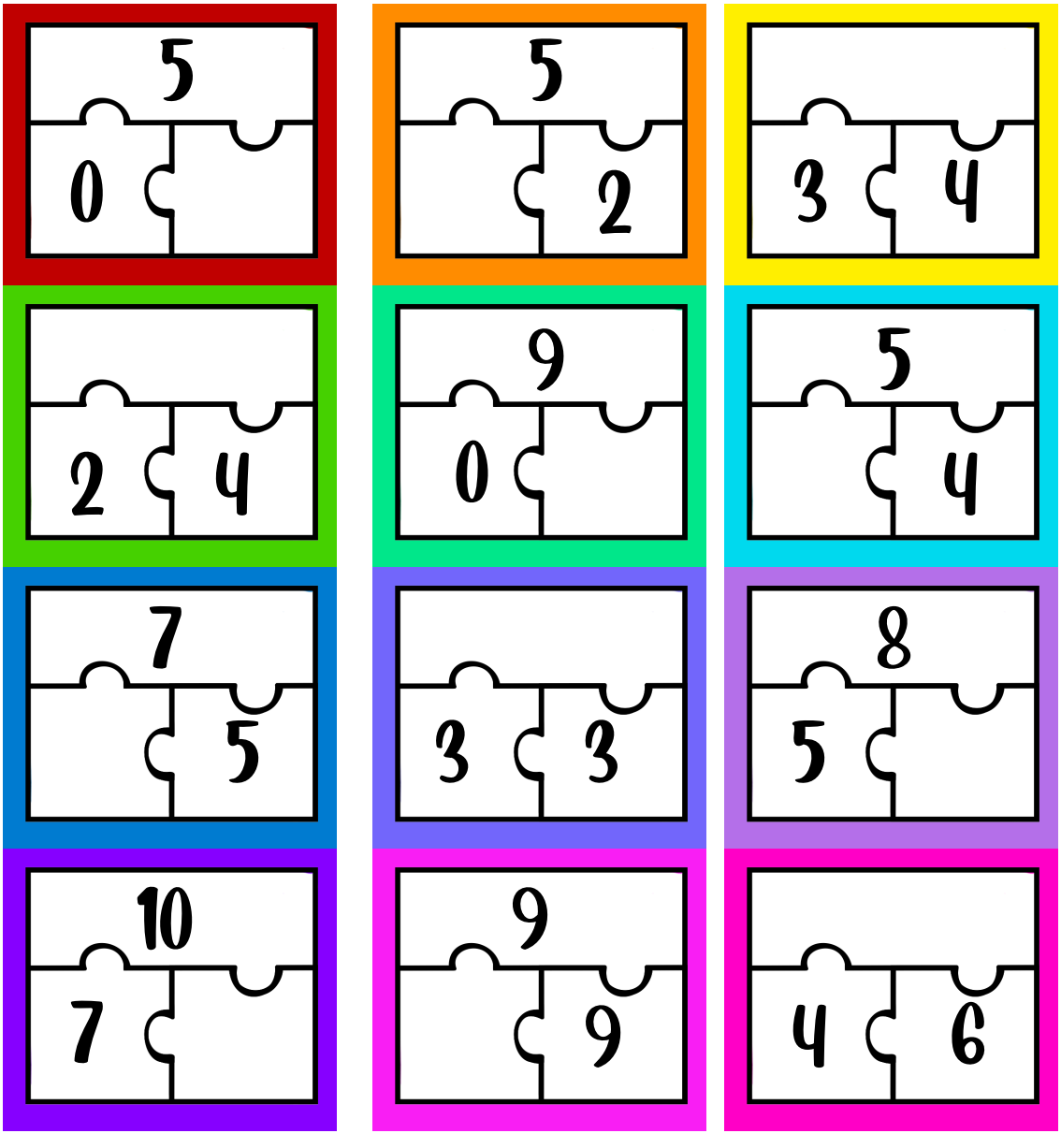
Summative Assessment (Quiz / Project / Report) (Include a rubric):

Approximate Time: About 25 minutes

Students will be pulled to the table one on one with a blank part whole sheet. I will give the students manipulatives and then I will give my students a number either the "parts" or the "whole" then I will observe them solve the problem on their own to measure their knowledge.

NAME:

PART PART WHOLE



Plan for differentiation: (Be sure to specifically address the following learners)

- Students with high-incidence disabilities (e.g., autism, ADHD, mild learning disorders)
  Students with high-incidence disabilities will work in groups when working with this assignment. Students with high-incidence disabilities will be given extra activities that allows them to use different types of manipulatives and will be allowed to use them during the assessment. I will follow all 504 and IEP plans to ensure I am providing the best educational opportunities.
- ELL
  ELL students will be provided with a translator or translating software for some parts of the lesson. ELL students will also work

with their peers for extra help and a chance to pick up on some more English. I will communicate and work along sides a ELL specialist to create the best plan for the ELL learners.

- Gifted learners
  Gifted learner will be given a more challenging activities to challenge their level of learning. When pulled to small groups they will be given a more challenging version.

Elaborate Further / Reflect: Enrichment:

- How will you evaluate your practice?
  After teaching my lesson I will closely observe my students and look over their work after completing independent work. I will also pull students for one on one or small groups to see if they understand or need the information delivered in a different way.
- Where might/did learners struggle in the lesson?
  Some learners may find it difficult understanding the difference between part and whole. This is why I plan to have the students do several activities without numbers to show the relationship and provide a part-whole map. Part-whole maps give students a visual and a way to breakdown the problem.
- How can the lesson be strengthened for improved student learning?
  There are so many resources available to choose from for part whole. I decided to use some of those resources instead of creating my own. This lesson can be strengthened by making sure it engages the students and looking at it from the student's point of view. It is important as educators that when teaching lessons, we look at the lesson from the eyes of the students and how they feel learning this new topic. Also, keeping this lesson engaging will also allow the students to be excited about the content they are learning.
- Did the lesson reflect culturally sustaining pedagogies? If not, how can this be enhanced?
  Our students will come from different backgrounds and experiences, and I feel it is important to foster collaborative learning in class. Adding more engaging questions for the students to express themselves and ideas. The probing question could be," Share a time when you had to have a "part" of a "whole".