

Critical Components of Lesson Design

*Elementary Example

Planning

Name:	Subject Area: <i>Math</i>	Lesson Date:
Unit Title (if applicable): <i>Systematic listing and Counting</i>	Lesson Plan Title: <i>Pizza Topping Combinations (lesson 2 of 3)</i>	Grade Level: <i>4th grade</i>
Time Required: <i>40 minutes</i>	Materials and Media: Whiteboard, whiteboard marker, construction paper, scissors, marker/pencil, paper	
<p>Aligned State Standards:</p> <p>AZ- Common Core State Standards (2012) Subject: Mathematics Grade: Grade 4</p> <p><i>Domain:</i> Operations and Algebraic Thinking (OA) Use the four operations with whole numbers to solve problems.</p> <p><i>Area:</i> Use the four operations with whole numbers to solve problems.</p> <p><i>Standard:</i> AZ.4.OA.A.3.1 Solve a variety of problems based on the multiplication principle of counting.</p> <p>a. Represent a variety of counting problems using arrays, charts, and systematic lists, e.g., tree diagram.</p> <p>b. Analyze relationships among representations and make connections to the multiplication principle of counting.</p>		
<p>Measurable Goals and Criteria for Mastery (quantitative and references the assessment):</p> <p>All students will work in groups of 6 to create a systematic list showing 12 of the possible 15 (80%) 2- topping pizza combinations when given 6 different ingredients.</p>		
<p>Differentiation: Remediation:</p> <p>Teacher will work with struggling students at back table offering multiple examples (modeling) and manipulatives (topping picture cards).</p> <p>Differentiation: Extensions:</p> <p>Create a systematic list from possible McDonald’s Happy Meal choices(ex. Hamburger- fries-apples-juice, cheeseburger-fries-yogurt-chocolate milk, nuggets-fries-yogurt-soda)</p>		

Assessment

Pre-Assessment Data (Optional):

Beginning of the year STAR assessment (includes skills-based test items and in-depth reports for screening, instructional planning, progress monitoring, and standards benchmarking) indicated all students need additional instruction and practice with combinations.

Post Assessment:

Teacher checklist will indicate student mastery 12 out of 15 correct combinations.

Independent Activity: Reinforce skills and synthesize their new knowledge by completing a task on their own and away from the teacher's guidance.

(Similar to pizza toppings) Students will create a minimum of 8 different 2 topping dessert pizzas (80%) using 5 of their favorite candies (ex. Snickers, M&M, Sour Patch, Starbust, Skittles)

Instructional Sequence

Anticipatory Set with Purpose:

"Who loves pizza?" Accept appropriate responses. "I love pizza and I love to make my own pizza dough at home and make my family's favorite pepperoni-mushroom. What my family likes even more than making our "family favorite" pizza is to divide the pizza dough up into smaller pieces and everyone make their very own mini pizza. Has anyone ever made their own mini pizza here?" Call on students who have their hand's raised to share their favorite kind of mini pizza. "Wow, you all have some great pizza topping combinations that sound really, really good! I can tell that a favorite pizza is cheese! Well, for today's activity you will need to pick 2 ingredients that you would put on your pizza and cheese can be one of the ingredients, but you have to choose another! Turn to your neighbor and discuss what two ingredients that you would choose to place on your own mini pizza." Give students a minute to discuss the toppings they would choose. "Now imagine that you are having a pizza party and you have asked each of your 5 guests (6 including you) to bring one topping but make sure they have enough to share with the other guests. We are going to have fun planning our pizza party here today."

Instructional Sequence:

1. "Before we begin talking about our pizzas let me show you an example of a systematic list which is what you will be creating to share your pizza topping combinations. (DI)
2. Using the whiteboard show the students an example of a systematic list (the example will be of 4th grade teacher's basketball teams) "Here is a list of the different 4th grade teams and

the schedule that will begin next week. It is important for each class to play each other so that it is fair." The teacher displays the schedule (ex. Wilson vs. Hart, Wilson vs. Stewart, Wilson vs. Sanders, Hart vs. Stewart, Hart vs. Sanders, Stewart vs. Saunders) (DI)

3. In the previous lesson we learned how to create an array chart to display our information when we were talking about smoothies. So let's quickly take the 4th grade teams and see if we can create an array chart." The teacher will quickly create a blank array chart with 7 columns. (DI, M)
4. "What are the 4 teams names that I will write in the left hand column?" Call on students to write the following names in the column; Wilson, Hart, Stewart, Saunders. "Ok, let's look at this chart and since only 2 teams play at a time let's quickly fill out the array chart as a class." Continue filling out the chart. (AE, CU, M)
5. "We are organizing our data (team names) in an array chart, can anyone remember the name of the way we organized the team names at the beginning of the lesson?" Accept appropriate answers. "You are right, a systematic list which is a way of putting information in order. (AE, CU, M)
6. "Next we are going to talk pizza! Once we break up into our teams of 6 students will work together to come up with 6 different toppings that students will bring to the pizza party. It is important that these are 6 different toppings and each student will have 5 minutes in groups to create a representation of their topping out of construction paper." The teacher will hold up an example of a green pepper made out of green construction paper. (DI, M)
7. "Next, you will work together as a team to come up with as many 2 topping pizza combinations as you can. You will display your combinations in a systematic list, just like this one." The teacher will point to the example from step number 2 from the basketball teams. (DI, M)
8. "Are there any questions before I break you into your groups?" Answer any questions students might have regarding the directions. "What is the first step in getting started?" Call on student. "Correct, each of you will come up with one topping and make sure that all 6 toppings are different. If someone already picked your favorite topping then come up with a new one." The teacher will pass out paper for the students to create their systematic list. (CU)
9. "As you begin I will be walking around the room assisting any student who need help." (GP, CU, AE)

Closure:

"First of all, who is hungry after all of this talk about pizza? I totally agree, I am ready for lunch, but before we go each of the teams are going to come up front to share out their strategy for creating their systematic list." Call on teams to come up and share how they created their list. "Great work today, now think about how easy it would be to take the same information that we gathered here today to create an array chart. Does everyone agree that it would be easy?" Accept appropriate answers. Based on the responses and if time allows the teacher could quickly create an array chart on the board.