

Math Activity Plan

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Curriculum Topic: Math- Data Analysis (Fruits and Vegetables)

OVERVIEW/FRAMING									
<p>TOPIC <i>Explain how the topic of this activity is developmentally and culturally appropriate for the group of learners for whom you are designing it.</i></p>	<p>During this activity students will focus on being able to sort different fruits and vegetables, not only by color, but also by size, and adding them to the corresponding group. While doing this, students will also be tallying up how many of each item they see and putting it in a bar graph, which will make this into a data activity. Students will also engage in being able to count different items while learning to recognize numbers 1-5.</p> <p>This activity is culturally appropriate for children in this specific group as it not only names the items being used but also has a picture of what the item is. This activity can also be translated to Spanish for the students who speak both languages.</p>								
<p>BIG IDEAS/OVERARCHING QUESTIONS <i>What kinds of questions will be explored and/or what new connections and ideas will be engaged through this activity?</i></p>	<p>Some of the questions will be:</p> <ul style="list-style-type: none"> - Which one/ bar has more/less? -Can you sort the items by size, name (group), color, shape. -How many of each? -Which item is the biggest/largest? -Which item is the smallest? <p>Students will be able to make connections with items found at their house, school, grocery store or even farmer's market. They can begin to apply the different fruits to different activities in dramatic play, such as playing super-market, cashier, farmer, or even just a costumer.</p>								
<p>CONTENT FOCUS: <i>Identify which content area(s) will be addressed in this activity</i></p>	<table style="width: 100%; border: none;"> <tr> <td style="background-color: yellow; padding: 2px;">Visual Arts</td> <td style="padding: 2px;">Music</td> <td style="padding: 2px;">Movement/Dance</td> <td style="padding: 2px;">Drama</td> </tr> <tr> <td style="background-color: yellow; padding: 2px;">Emergent Literacy</td> <td style="background-color: yellow; padding: 2px;">Mathematics</td> <td style="padding: 2px;">Science</td> <td style="padding: 2px;">Social Studies</td> </tr> </table>	Visual Arts	Music	Movement/Dance	Drama	Emergent Literacy	Mathematics	Science	Social Studies
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KNOWING THE LEARNERS	
AGE RANGE:	

<p>CURRENT DEVELOPMENT: <i>What do you know about the current growth of learners in this age range for the content focus?</i></p>	<p>Children in this age group are learning to identify both the physical appearance of numbers as well as quantity. They are learning about different amounts being 1:1 correspondence, while making connections with real life events.</p>
<p><i>What misunderstandings might children in this age range have about the topic/content and how do you plan to address this?</i></p>	<p>Young children may assume or interpret numbers and amounts differently, trying to understand and follow the exact amount counted by the amount shown with physical materials. Children this age may also misunderstand how to show the numeric form with a corresponding material representing the same or equal amount.</p>
<p>SOCIO-CULTURAL CONTEXT: <i>What do you know about this group of children in terms of their cultural backgrounds, learning styles, languages spoken, and learning experiences to date?*</i></p>	<p>Students in this class represent different cultural backgrounds, speaking different languages as well as learning to speak English. A few of the student's area dual language learners, who come from Central and South America, Honduran and Ecuador. While others have English as their first and only language, one student in the classroom is of Chinese descent.</p>

<p align="center">MATERIALS & LEARNING ENVIRONMENT PREPARATION</p>		
<p align="center">MATERIALS</p>	<p align="center">LEARNING ENVIRONMENT</p>	<p align="center">EVENTS/RESOURCES</p>
<p><i>What materials will you need to teach this activity?</i> <i>List all books and materials, including any used during the launch/reflection and during set up and cleanup</i></p>	<p><i>What modifications will you need to make to the classroom to support this activity? (e.g., centers, bulletin boards, meeting spaces)</i></p>	<p><i>What events or resources, including people, might you need to arrange in advance?</i></p>
<p><u>Materials:</u> Large Graphing Paper Markers Fruits/ Vegetables (apples, bananas, tomatoes) Baskets/Containers (optional)</p>	<p>Meeting Rug: This area will have to be cleared of all other projects or materials surrounding it, as well as moving come chairs and tables. These items will have to be move in order to provide students with adequate room to move around during the activity. Fruits and Vegetables will have to be brought into the classroom in order to facilitate the activity. On the graph paper pictures of the designated fruits/vegetables will be</p>	<p><u>Grocery Store/Farmers Market trip:</u> in aiding students to familiarize themselves with the different types of produce that is offered to the community. <u>Community Helper:</u> such as a volunteer from either the grocery store or farmers market to discuss with the class the different types of produce they provide.</p>

* Note: You are designing this activity for the three children observed for your Student Profiles assignment.

	drawn to facilitate full participation and understanding.	<u>Books:</u> The very Hungry Caterpillar by Eric Carle La Oruga My Hambriente by Eric Carle Eating the Alphabet Fruits & Vegetables from A to Z by Lois Ehlert
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THE LEARNING EXPERIENCE

The launch

How will you engage the children in this learning experience? How will you introduce the concepts and vocabulary of the topic? How will you describe the procedures of the learning activity? What will you say and do?

Read Aloud: *The Very Hungry Caterpillar* by Eric Carle.

In order to earn the student's attention, the read aloud provided above would serve as an introduction to different kinds of fruits and vegetables that can be eaten or acquired by students. During this introduction period during a class discussion, we would introduce the vocabulary words *more/less* as well as *big/small* and *sorting*. In order to do so the group discussion will be open to the students to make connections with the vocabulary presented to them or to ask questions regarding the topic. Alongside with the discussion as a class we would define the vocabulary that has been introduced and clarify what they mean while tying them to our read along and parts in the story where they can be applied, or where they are represented in the story.

During our discussion we would also touch base on the activity, acknowledging the different types of fruits and vegetables that were mentioned in the story. Tying this with our new vocabulary word, *sorting*. Students would then be instructed to sort the materials provided into their corresponding group. Teachers would demonstrate how to do so with a few markets and crayons, sorting them, followed by counting them and finally adding them to the graph. Students would watch the demonstration of how to accordingly plot the graph by the corresponding amount.

The activity

List the step-by-step procedures. What will the children be doing? What will you say or do to facilitate and scaffold their learning? Be specific and detailed in your description.

The students will be sorting the different fruits/vegetables provided to their corresponding group, attempting to determine which material has more and which has less. During the activity in order to scaffold their learning, I'd ask them if they are sorting by which they think looks like it may have more to their size or if they are sorting by what they just see visually have more. I'd also mention if two groups have the same amount but have different sizing if they think one of them has more than the other after mobbing them around from a straight line, to mixing them up in no order and then again rearranging them in a different order. During this time, I'd ask the students what they notice is the same and what is different about the materials they are working with, as well as what makes them different.

- read aloud- The Very Hungry Caterpillar by Eric Carle
- discuss vocabulary, more, less, sort
- break students up into group at the rug or table if applied to student
- hand out fruits/vegetables in baskets/bins
- provide certain students with bins/ baskets for materials
- ask students to discuss with group what they notice about their materials
- inform students they must all be able to participate in having their voice and ideas heard
- pass out premade graphs to each group- with names of fruits/vegetables in English and Spanish
- remind students they should have different groups at their station
- give students a 5-minute reminder before coming back as whole class to the rug
- ask students to look at my graph that I will be holding up demonstrating my plotting of materials
- give students markets
- ask students to take turns graphing their corresponding manipulative
- ask students to discuss which one of their materials has more
- ask students to discuss which one of their materials has less
- ask students to discuss with one of their bar graphs has more and why
- provide students with the opportunity to present their work to other groups or have a teacher help them do so
- ask all groups to make their way back to the rug to discuss what was noticed during the activity

<p>Reflection <i>As the activity wraps up, what opportunities will you offer the children to respond to and reflect on this activity?</i></p>	<p>As a reflection of the activity students will be able to respond to which one of their items had less and more, and why they believed so, as well as knowing how to correspond 1:1. Student will be able to reflect on different quantities and being able to graph. Students will also be able to reflect on different aspects of sorting, by shape, size, color or corresponding groups.</p>
<p>Possible Extensions <i>What could you do on another day to build on this activity?</i></p>	<p>To build on this activity on a different day student will be able to graph their materials once more, however, this time it would be done by how many of their materials are sweet, bitter, or sour. They would group/sort their manipulatives according to their taste. This can be done by having a community helper come to the classroom and show them the different produce and speak about their different tastes.</p>
<p>Multimodal Engagement <i>Identify and explain the ways in which this activity offers opportunities to use at least three different learning modalities (kinesthetic, tactile, linguistic, visual/spatial, auditory, musical)</i></p>	<p>Visual/spatial- students will be able to observe and differentiate different groups of foods during read aloud as well as when viewing the graph with corresponding pictures. Students will also be practicing visual/spatial intelligence while sorting the materials visually and studying them before plotting them on the graph.</p> <p>Linguistic- students will explore how to add and define the new vocabulary definitions presented to them at the beginning of the lesson. Students will explore with their linguistic skills while communicating with their group how they knew words fit into the vocabulary and find the correct way to use them once they solve their activity.</p> <p>Logical/ Mathematical- students will explore numbers, and how putting them together increases the value of the objects being studied. Students will also explore this intelligence as they explore 1:1 correspondence while graphing their end result, understanding numbers hold a value.</p>
<p>Differentiation <i>How will you modify this activity for learners with different learning styles and/or special needs (SLLs, physically active, etc.)?</i></p>	<p>This activity will also have the Spanish names of the fruits and vegetables that will be on the graph. Additionally, adding a corresponding picture of the manipulatives, this would aid students in making a visual connection while filling out the data. This would also help our dual language students to follow the activity visually, if auditory is out of their comfort zone.</p> <p>Students working on their gross motor skill will be instructed or given the opportunity shift their group to the further corner of the rug in order to have enough space to move around.</p>

	<p>These students will also be given the option of sorting and arranging their manipulatives at a table. In either the rug or the table, the students working towards strengthening their gross motor skills will also be offered containers or baskets for them carry and move around their station as needed. This would aid in not only moving their lower limbs but also using their arms to carry objects to different areas.</p>
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<p>GROWTH AND LEARNING</p> <p><i>How will this learning experience support the children's growth and learning in the following domains? Use your knowledge of child development.</i></p>	
Cognitive/thinking	Students will be able to understand and work with new vocabulary words and put them to use as they work on the activity.
Physical	Students will develop fine motor skills as they sort the materials, fill in the graph and use fingers to or hands to count each square on the graph to fill it in.
Social/emotional	Students will explore their own ideas, while listening and understanding others also have an opinion and voice. Students will have to work together in order to finish activity, this means, taking turns, bouncing ideas of each other and working together as a team to finalize the activity. Students will be able to work on relationships with their peers.
Language/literacy	During our book discussion students will be able to discuss and define the vocabulary words presented to them as well as define different fruits and vegetables. Students will explore how to integrate new vocabulary presented to them. Students will work on literacy as they observe the teacher during the read aloud as well as then they graph their materials and as they study the chart with different pictures.
	List 10-15 target vocabulary words: less, more, big, small, sorting, tall, short, same, equal to, shape, size, color, graphing, recording, plotting
Content Area(s)	Visual arts, math, emergent literacy

STANDARDS/GOALS

What Pre-K Common Core Learning Standards are addressed in this activity?

Use the PKFCC to respond.

*Be specific—choose those standards that are **actually targeted** by this learning activity (e.g., can development in regard to the standard be measured by the evidence gathered (authentic assessment) during this learning activity?)*

Domain 1: Approaches to Learning	Identifying number by name and being able to write it as well Understand more, less, big ,small, taller, shorter, same equal to
Domain 2: Physical Development and Health	Understanding how the different materials provided can and will aid their growing bodies.
Domain 3: Social and Emotional Development	Students will learn to problem solve, not just math but also with their peers. Their emotions or attitudes will change during the activity depending on how and if they feel they are being heard or if they fell as if they understand the activity. They will have to be able to communicate their feelings and emotions regarding this. This will also help the dual learning students to feel confident in working alongside others.
Domain 4: Communication, Language, and Literacy	Students will learn to communicate with their peers all while taking turns when communicating, being able to discuss as a group how and why they solved and sorted their materials the way they did. This also aids in them being able to picture read, by looking at the pictures provided and being able to match the items. Students will also explore numbers, both verbally and by writing them down, followed by graphing them in order to represent the quantity in that form. Students will also be able to do this by having a translation of each produce on the hart in their given language, as well as having books read regarding the topic in their language.

<p>Domain 5: Cognition and Knowledge of the World</p>	<p>Students will be able to look at their surroundings and sort on their own, this can be done at their house, school, or anywhere in their community. This also goes for knowing when there is more or less of something and knowing why, problem solving.</p>

AUTHENTIC ASSESSMENT	
<p><i>What will you do to gather evidence to assess each child's developmental progress?</i></p> <p><i>How will you determine whether or not individual children are getting the Big Ideas and/or exploring the Overarching Questions?</i></p> <p><i>Evidence may include responses recorded during a group discussion, a visual arts project, a performance, etc.</i></p> <p><i>Your assessment activity MUST be connected to the Big Ideas and Overarching Questions.</i></p>	<p>Observe and listen to the students count, how they keep track of what they are counting, ex: are they using count and say, move and say. As well as how many times they have to count in order to know the quantity of and item when they are asked. I will also rearrange specific materials when speaking to students once they have counted their materials, in order to see if they understand that the amount does not change even though the materials have been moved around.</p> <p>In order to know if the students are understanding the targeted area, I will ask them questions such as, "the bananas seem bigger than the apples, does that mean there are more bananas than apples?". This will allow me to see if students understand the concept of quantity rather than size.</p> <p>I will keep a response record as well as a check list to keep track of each students doing during the activity. Such as are they using the new vocabulary given to them, how are they counting, to they understand quantity versus size. In the check list it will also ask if the student can count 1-5 and 1-10, recognizing each number. As each student will be graphing their own items this will serve as another form of record to look back on for each student.</p>

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