Learning Plan

Name: Renee Pierre	**Age of Children**: Preschool (3-5)	**Date**: 5/23/2021
Title: Bigger Than, Smaller Than, Equal To		

Learning Standards and Outcomes

Learning Standard:

Teaching Strategy Gold

Mathematics

20. Uses number concepts and operations
    a. Counts
    b. Quantifies
    c. Connects numerals with their quantities
22. Compares and measures
    a. Measures objects

Cognitive

11. Demonstrates positive approaches to learning
    a. Attends and engages

Science & Technology

28. Uses tools and other technology to perform tasks

Child Outcomes:

The student will be able to:

- Count
- Quantify
- Connect numerals with their quantities
- Measure objects
- Attend and engage in the activity
- Understand terms bigger, smaller, and equal
- Uses tools to measure

Learning Experience

Describe the Learning Activity/Opportunity:

Bigger Than, Smaller Than, Equal To is an activity that supports developing mathematical skills of measuring and comparing objects by size. As children's abilities progress, they will build upon math concepts of counting, identifying small quantities of items, and connecting the numerals to their quantities. This hands-on activity provides opportunities for children to engage using mathematical tools that encourage scientific inquiry, developing critical thinking skills.

In this activity, children will gather objects and predict whether they are bigger than, smaller than, or are equal to the measurement instrument. A standard measuring tool, such as a ruler, is too complex for the young children's level of understanding and development. Therefore, the children can choose a non-standard measurement device, such as a shoe, block, egg carton, etc., based on their interests and availability to measure their predictions.

During this activity, the children will test their theories of whether or not the items are bigger than, smaller than, or are equal to the non-standard measurement tool they choose. This allows children to compare objects by size and understand different measurements. As children's mathematical knowledge progresses, this activity can be adapted to include multiple non-standard units, such as paper clips, toys, food, etc., to incorporate skills of counting, quantifying, and number awareness. This helps to develop the foundational building blocks for future cognitive and mathematical skills necessary throughout life.

Materials Needed:

- Random sized objects
- Non-standard measuring tools
- A flat surface

Procedures:

1. ***Engage:***

I will begin this activity by seeing what the children know about size by asking, "What is something that is big/small?" I will further the conversation and question their thinking by asking, "How do you know something is big/small?" I will also introduce a new vocabulary word of measure by saying, "How can you find out the size of something? How do you know if something is bigger/smaller than something else? Can we **measure** it? Measuring can tell us the size of the object."

I will then capture the children's attention by saying, "Let's try it! What can you use to measure?" Then I will have the children choose an item that will be their non-standard measurement tool.

2. ***Explore:***

Once the children have chosen their non-standard measurement took, I will have them gather random-sized objects by stating, "What do you think you can use to compare to the non-standard measurement tool?" **Compare** is when you describe the similarities or differences. Next, I will introduce new vocabulary words and have the children place objects into piles predicting how it compares to the measuring tool by asking, "What is your guess, your **prediction**, on the size of the item? Do you think the things will be bigger than, smaller than, or **equal**, which is the same size?" After making their predictions, I will have the children test their theories by physically executing the experimentation by seeing if they are bigger than, smaller than, or equal to the measuring instrument. To extend this activity, I will have children use non-standard individual units to measure. For example, using individual toy cars to measure a book by how many car lengths long it is. If the children use four cars, then the book is four cars long. I will have the children compare the objects to see which one is bigger than, smaller than, or equal to by asking, "How much bigger/smaller is this one compared to that one?"

3. ***Make Sense:***

To make sense of this activity, I will guide the children by questioning their thinking and restating their analysis of the findings. "How do you know that this one is bigger/smaller/equal?" This allows the children to hear what they are thinking, process why their thinking is an accurate measurement, and provides them with opportunities to clarify their thoughts.

4. ***Close:***

To bring this activity to an end, I will follow the children's lead, ensuring they have had enough time to explore by comparing and learning about the different sizes of items. I will summarize the results with the children by asking, "How many total items are in each group size? How many items are bigger than the

shoe? How many items are smaller than the shoe? How many items are equal to the shoe?" I will reconnect to the children's original thoughts by asking, "How many of your predictions are correct?"
I will remind children they can practice independently measuring objects using a non-standard measuring tool.

5. ***Follow-up:***

I will further this activity based on the children's interests and understanding by asking them, "Where/what else could you measure next time? Tell me about the largest/smallest things you measured?" I will expand on including more descriptive math talk, such as the largest, smallest, more, less, same, etc., by asking, "What other words can be used to describe comparisons?" I will also meet the children's individual needs and skills, building on this lesson by extending this activity using non-standard single units to measure. I will also reinforce measurement concepts by implementing a cooking project, graphing by size, and read the story of Goldilocks and the Three Bears.

New vocabulary words that children will develop as part of this learning plan:

1. **Measure:** to find the size
2. **Equal:** same size, amount, or measurement
3. **Compare:** to describe the similarities or differences
4. **Prediction:** a guess; to say what you think before you measure

Open-ended questions for each lesson phase that you can ask children as part of this learning plan:

Before the activity:

1. How can you find out the size of something?
2. What can you use to measure things?
3. How do you know if something is bigger/smaller than something else?

During the activity:

1. What is your prediction on the size of the item?
2. What do you think you can use to compare to the non-standard measurement tool?
3. How much bigger/smaller is this one compared to that one?

After the activity:

1. Where/what else could you measure next time?
2. Tell me about the largest/smallest thing you measured?
3. What other words can be used to describe comparisons?
4. How many of your predictions are correct?

This activity is developmentally appropriate for preschool-age children:

Age-appropriate:

- This activity is developmentally appropriate for preschool-age children because children learn through hands-on exploration. Using real-world items, children connect to what they already know from past experiences. Children are curious by nature and hunting for objects to measure and compare sizes initiates this natural skill making learning fun.

Individually appropriate:

- This activity is individually appropriate because children can engage at their level of skill and abilities by adapting the complexity. The adult can individualize the activity by increasing the challenge and language as the children are ready. The materials in this activity can also reflect children's interests increasing curiosity and engagement.

Culturally appropriate:

- This activity is culturally appropriate by using materials from their own environment that they are familiar with. They can also engage in the exploration using their home language, which will create a more meaningful and authentic learning experience.

Describe how in this activity you promote the following:

Promoting Analysis and Reasoning:

Why and how questions:

- Ask questions that provoke thought about different sizes. "Tell me why you think this is going to be bigger/smaller/or equal to?"
- Question the children's thinking to learn what they already know or how they are processing their thoughts. "How do you know which one is bigger/smaller/or equal to?"

Problem-solving:

- Ask questions that will stimulate inquiry skills for children to think outside the box. "We do not have a standard tool of measurement, such as a ruler. What do you think you can use to measure with?"
- Model how to question thought to extend their think on solving the problems. "How are you going to find the items to measure?"
- Promote ideas on how to make decisions to build problem-solving skills. "How are you going to decide what to measure first?"

Prediction and experimentation:

- Create a list with the children that predicts what items could be bigger than or smaller than their non-standard measurement. "Which item do you think will be longer than the shoe?"
- Provide questions that will offer opportunities for experimentation, either thought-provoking or hands-on. "What do you think will happen if you changed your non-standard measurement from a shoe to a different item?" "Now that you have a different measuring tool, how has the outcome changed?"

Classification and comparison:

- Create conversations that discuss the differences or similarities between the measurement and the item being compared. "Tell me about the differences."
- Model the placement of how to measure items, such as placing them both on a flat surface. "I wonder does it make a difference where I place the objects when I am comparing them? Why do you think so? How would I position it to begin measuring at the same point?"

Promoting Opportunities for Creating:

Brainstorming:

- Create a list with the children of what things are bigger or smaller than the measuring tool. "What things do you think are bigger or small than a shoe?"
- Ask the children what other items can be used as non-standard measuring tools. "What else can you use to measure with?"

Planning:

- Discuss what type of non-standard measuring tools would be ideal to use, ensuring there are opportunities for comparisons. "What item could you use as a non-standard measuring tool?"
- Ask the children plan out what order they will measure the items. "Which item will you measure first? Second? And so on."

Authentic production:

- Encourage the children to be active participants in their learning by gathering materials to measure. "I wonder what items you will go find to measure."
- Incorporate different levels of play, increasing the challenge by adding in the use of counting in measuring units, such as "How many blocks big is the shoe compared to the bigger/smaller item?"

Promoting Opportunities for Integration:

Connecting concepts:

- Point out anything can be measured with standard or non-standard tools, such as visually or physically. "Who do you think is bigger, John or Jose?"
- Read a book about size comparisons to introduce the language needed to measure.

Previous knowledge:

- Observe the children to see what they already know about measuring and comparing objects.
- Ask probing questions that promote thinking about differences to learn what they already know. "Tell me what you see?"

Promoting Opportunities for Connections to the Real World:

Real-world application:

- Use real-world materials that the children are familiar with. "What can you use from around the room?"
- Measuring and understanding sizes are skills needed to solve real-world problems. "How big do you think your block tower will be before it falls over?" "How big do you think the base of the tower needs to be for it not to fall over?"

Relation to children's lives:

- Provide opportunities for children to use measurement language in everyday activities. "What size paper do you think you will need to paint your whole family on?"
- Incorporate names of the objects being measured in their home languages. "How do you say this in your home language, the language your family speaks at home?"

I certify that the lesson I am submitting does not utilize a worksheet or rote learning experience. My lesson focuses on promoting concept development through high-quality interactions and everyday materials easily obtained in a family's home or surrounding outdoor environment. The outcome of my lesson is not a "cookie-cutter" product.

✔ Yes

__ No