

Measurement & Data: Measure It, Sort It

What we are doing:

Children can use the manipulatives to practice measuring, comparing, sorting, and counting.

For the activities, you and your child can read the books provided and use their stories for re-telling to practice ordinal numbers (first, second, third, etc.) and to practice sorting and comparison items to make collections.

Purpose of this activity:

Children gain experience with comparing sizes and weights, making observations of similarities and differences, and sorting objects by their attributes (new vocabulary word).

Children also have the opportunity to tell stories about events using ordinal numbers (new vocabulary words), which is a skill in "Learning Pathways in Numeracy."

Materials provided:

Chain links, counters, and books

What you need to gather:

- Paper
- Pencil or crayons
- A plastic hanger
- 2 identical play buckets or cups
- Yarn or string
- Other assorted collections, such as animal figures or buttons

Books for lessons & activities:

- *How Long Is a Whale?* by Alison Limentani
- *Little Red Hen*, by Jerry Pinkney
- *So Light, So Heavy*, by Susanne Strasser

Lesson 1: Measure It

ACTIVITY #1

Vocabulary builder:

First, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth, beginning, and last.

Quick start:

Read the story *Little Red Hen* to your child.

Page through the book a second time and ask your child to help re-tell the story using the pictures as clues. Introduce ordinal numbers (first, second, third) as new vocabulary words and help your child use these as they tell the story.

It is okay to shorten the story because the focus should be on using the ordinal numbers.

Show me, and show a friend:

Have your child retell the story of *Little Red Hen* on their own, or tell a story about a family routine.

ACTIVITY #2

Vocabulary builder:

Measure, length, longer, shorter, compare, and equal.

Quick start:

Look at one of the chain links and compare it to your finger. Which is longer?

Compare one chain link to your hand. Which is longer?

Will your foot be longer or shorter than one chain link? Two chain links? Try it out and discuss if your answer was correct or not.

Count out a pile of 5 chain links and a pile of 10 chain links. Connect the links in the separate piles so that you have two chains and compare the two.

Which one is longer? How many chain links will you need to add to the shorter one so that they are the same length? How do you know?

Show me, and show a friend:

Have your child demonstrate how they can measure various objects and how they can tell you the difference between them.

Other activities to try:

Find items around the house that you can measure. Using your chain links, guess if your item will be shorter or longer than your 5-chain link or your 10-chain link.

Make a list of 3 items in your house that you can measure. How many chain links long are each of those items? Draw a picture of the three items in order of size.

ACTIVITY #3

Vocabulary builder:

Measure, weigh, weight, compare, heavy (heavier), light (lighter)

Deeper dive:

Make a balance scale. Place a plastic hanger in a place where it can hang free. Using yarn or string, tie the buckets (or cups) onto each end so that they hang an equal length. If you don't have small play buckets, use a hole punch to make holes in paper or plastic cups to hang them on the hanger.

Drop one of the chain links into one of the buckets. Observe what happens. Ask your child, "What will happen if I drop a chain link into the other bucket?" Observe what happens. Count out 5 chain links and add them to the first bucket. Count out another 5 chain links and add them to the second bucket. Count out a third set of chain links and ask what will happen if we add them to one of the buckets. Continue to count and explore what happens when you add to the buckets.

Empty out all the buckets and put 5 chain links into one of the buckets. Using the counters, drop one counter into the second bucket and observe what happens each time. Estimate how many counters you'll need before the second bucket becomes heavier than the first one. Continue to hypothesize and explore with the chain links and counters

Show me, and show a friend:

Have your child be the teacher to show and explain to you what happens when different objects are put into the two buckets.

Lesson 2: Sort It

ACTIVITY #1

Vocabulary builder:

Attribute, same, different, similarities, differences, bigger, and smaller.

Quick start:

Look at the counters, and talk about all the ways they are similar and different, such as size or color. Introduce the vocabulary word "attribute." Choose one attribute and sort the counters using that.

Ask open-ended questions:

How are these the same? How are they different? How many ways can these be sorted? Are there more of one group than another?

Deeper dive:

Read the book "Sam Sorts" and talk about different collections that you have. What makes them the same? What makes them different?

Just like in the book, gather lots of objects such as buttons, blocks, Legos®, shells, cars, figures, stuffed animals, pretend food along with the counters and chain links included in this STEM bag. Pick an attribute and count out loud to 10 as you find 10 objects that fit that attribute. Pick another attribute and count another 10 items. Do this 10 times and then have your grown-up help you count to 100.

Ask open-ended questions:

Can you tell me about your groups? How many ways can you sort your objects?

Show me, and show a friend:

Have your child sort objects and explain what attribute he is using to sort them by.

Other activity to try:

Look at your 10 groups of 10. Mix them up and re-sort them in a different way.