Director’s Corner: How Frequent?

Next for consideration in our series on ways to encourage children’s interest in and exploration of foundational math concepts is learning about how frequently people, objects and events occur in the world. Humans naturally notice patterns of data in their lives and set expectations or choose actions based on the probabilities they discover. Basically, we do statistics all the time. Statistics is the domain of mathematics that includes classifying and organizing data via varied representations and then using the information to make decisions. Even 8-month-old infants express surprise when an adult repeatedly draws white balls from a container that they can see contains mostly red balls and 15 month olds use similar probabilities to form expectations about what type of actions to use with certain objects (see an interesting TED Talk by Laura Schultz at https://www.ted.com/talks/laura_schulz_the_surprisingly_logical_minds_of_babies - t-1057552).

In early childhood, we begin explorations by noticing properties of people, objects, and events in our everyday lives and then using those features to categorize them. The 3’s sort toys during cleanup time, count friends’ characteristics, notice when there are more sunny days than cloudy ones, etc. Preschool 4’s begin to use graphing strategies to organize birth months, name length, family size, and other data about the friends in each class. By kindergarten, the entry routine includes a “Question of the Day”, and the weekly “Clipboard Helper” takes a survey of the class, being careful to note who has already been asked, and then reports the results to the group. The kindergartners typically get so interested in the surveys that they start inventing their own by second semester!

At home, families can promote this early data collection and analysis in both fun and useful ways by sorting dishes, clothes, and recyclables, considering the chances of rolling certain numbers or drawing certain cards during games, comparing choices and preferences of friends and family members while taking beverage or dessert orders, etc. Even in the car, children can tally the color of vehicles they pass and use the data to predict what they are most likely to encounter next. Clipboards and graph paper with large squares enhance the intrigue for children. As with arithmetic and geometry, varied opportunities for practice helps solidify concepts, so offer lots of chances and follow the children's lead in terms of which ones to pursue in the most depth.

Remember to reinforce the effort required to complete a task and do it well, as well as the ways hard work helps us to improve and keep learning. Such a “growth mindset” prepares children to persevere through challenges and take in initiative to seek new learning opportunities. As with all aspects of math, the possibilities are endless so use whatever resources you and your family have to invent your own ways to explore statistics. I’d love to hear about your math adventures!