

Kindergarten Numeracy Development: Comparing and Ordering

Developmental aspects	Emerging With direct support...	Developing With guided support...	Applying With minimal support...	Extending
The Child	With direct support, and teacher modeling, may participate and may attempt to make sense of mathematical experiences.	With guided support, demonstrates a willingness to explore mathematical ideas while participating in problem solving experiences. Is beginning to show an awareness of numbers, space and time used in everyday life.	With minimal support, demonstrates interest in and a willingness to explore mathematical ideas while purposefully participating in problem solving experiences. Communicates an awareness of how numbers, space, and time are used in everyday life.	Shows interest and curiosity while purposefully exploring mathematical problem solving experiences. Perseveres. Makes and explains connections to numbers, space and time as used in everyday life.
Understanding Shape and Space				
Comparing and ordering	With direct support, may compare and order materials on the basis of e.g. length.	With guided support, compares and orders materials on the basis of e.g. size.	With minimal support, compares and orders materials on the basis of e.g. size and shape.	Compares objects, describes differences, orders/sequences e.g. day plan.
The Support/Scaffolding*	The Model: showing, instructing, explaining, directing, making explicit, demonstrating, giving examples	The Coach: structuring, sequencing, focusing, cueing, guiding, organizing, supporting	The Advisor: suggesting, reminding, prompting, monitoring, asking for elaboration	The Mentor: extending, stretching, wondering aloud, exploring, "what if-ing"
<i>*a variety of supports (teachers, peers, environmental, etc.) can be provided at any stage of development</i>				

Scenario: This teacher has recently read *Goldilocks and the Three Bears* with his class. They have discussed finding things that are bigger, smaller, and just about right, or "middle size." The teacher has explained the concept using school chairs to talk about size, and about what makes one chair bigger than another. He has asked each student to choose one object in the classroom, and then look for something smaller and something bigger. He reminds the class that they will each need three things in all to share with the group in the math circle.



Direct Support

A resource teacher is also in the classroom, giving direct support to a group of children for whom English is an additional language. Using a step-by-step approach, she first *models* the language for these students, and then *instructs* them to find examples from the classroom. As they bring back their choices, she *shows* them how to practice talking about their objects using the words she has modeled.



Guided Support

As the children look for things to compare with what they have selected first, the teacher provides guided support to those who need help finding things that are smaller and larger than their chosen object. He *structures* his *support* by *focusing* them first on making a choice, then on comparing and describing. "I see you have chosen an apple. Here is an eraser that is smaller than your apple. Can you find something else that is smaller than the apple?"



Minimal Support

Children who need minimal support are finding their own sets of three objects. The teacher *monitors* their activities, and *prompts* them to talk about their objects using comparative language. "What can you tell me about the size of the apple compared to the size of the eraser?" When necessary, he *suggests* that they could use words such as, "The eraser is smaller than the apple."



Without Support

One small group of children has combined their objects without support, and is excitedly making spontaneous comparisons using the appropriate comparative language. "Wow! Look...I have the biggest of all the things. And Desmond has the smallest!"



Spatial sense is an intuitive feel for one's surroundings and the objects in them. To develop spatial sense, children must have many experiences that focus on geometric relationships; the direction, orientation, and perspectives of objects in space; the relative shapes and sizes of figures and objects; and how a change in shape relates to a change in size.

