

UNIT 4: *World of Color* Where's the Math

Parts and Wholes

The ability to think about a number in terms of parts is a major milestone in the development of number Van de Walle & Lovin, 2006. *Teaching Student Centered Mathematics*. page 48

While fractions and plane geometry are skills for mid to late elementary years, the foundations of part/whole understandings are appropriate to preschool math curricula. Identifying parts of objects, and dividing objects up into parts occur naturally as we observe the world around us. As in many early math concepts, it is important to recognize the beginning stages of parts/wholes understandings, use appropriate math language, and allow experimentation and exploration into the different types of part/whole (also called part-part whole, and parts/whole). Identifying the “hidden” numbers inside of other numbers, for example 2 and 4 are numbers “hiding” within in 6, help children begin to compose and decompose numbers before advancing to using symbols to represent operations.

For young children, learning about parts and wholes is best facilitated through naturalistic experiences, such as when you cut apples up into parts and share them with the children at snack time, or you sort and organize toys. Making and forming groups, such as creating blue, green and red “teams” of children from the entire class is another way of helping children understand parts and wholes. Cooking activities and art activities such as paper folding are also excellent ways to introduce parts/wholes concepts.

Three Types of Parts/Wholes Understandings

There are three major types of parts/wholes understandings. *Math for ME* includes all three types, embedded into activities, and the concepts are featured in the Strategies sections of the selected activities. Here are the 3 types and common preschool activities that illustrate those understandings:

Parts Whole Understandings	Sample Activities
Objects are made up of unique parts.	Identifying parts of a vehicle, the human body, assembling or building toys, block structures, collages or drawing. Example from Unit 4: Mouse Shapes shape collage

<p>Groups of things can be divided</p>	<p>Sorting like objects into color by attribute, making sets based on an attribute, dividing groups into sets</p> <p>Example from Unit 4: Grouping Learning Links into color groups</p>
<p>Whole things can be divided into parts</p>	<p>Cutting an apple or orange, breaking down 2-D shapes into parts, such as dividing a circle into halves</p> <p>Example from Unit 4: [Resource book: Perfect Square by Michael Hall; Grid games, where the entire board is divided into equal parts with 1 object per square.</p>

For additional reading, see *The Big Ideas of Early Mathematics: What Teachers of Young Children Need to Know*. (2014). Early Math Collaborative, Erikson Institute.