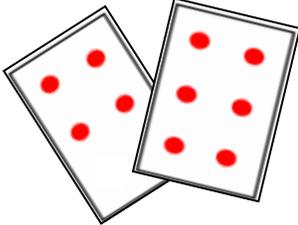
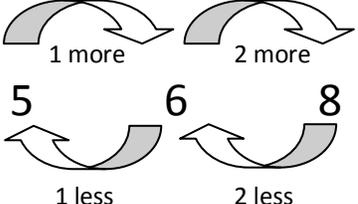
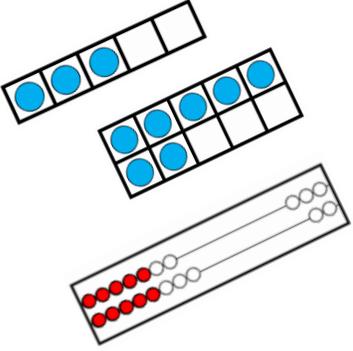
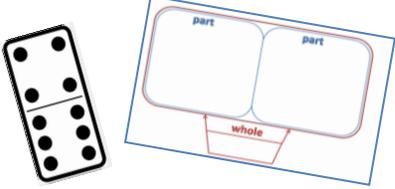


Developing Number Sense by Building Number Relationships

“Number sense is not a set of skills that children can develop in a short period of time. It is something that grows and develops over time. Howden (1989) described number sense as a “good intuition about numbers and their relationships. It develops gradually as a result of exploring numbers, visualizing them in a variety of contexts, and relating them in ways that are not limited by tradition algorithms”(p.11).” Van de Walle (2014, 107-108)

An instructional emphasis on number relationships is key to fully developing number sense. The four types of number relationships that children need to develop are listed below.

<p>Spatial Relationships</p>	<p>Children are able to recognize sets of objects in patterned arrangements and tell how many without counting the objects one by one. Instant recognition of quantities up to five is known as subitizing.</p> <p>Dot cards are one representation that can be used to develop spatial relationships.</p>	
<p>One and two more, one and two less</p>	<p>Knowing a quantity without counting begins with knowing one more and one less, two more and two less.</p>	
<p>Anchors or 'benchmarks' of 5 and 10</p>	<p>The number ten is the basis for our place value system and serves as a benchmark to which other numbers can be compared. Five serves as an important benchmark for young students and since two fives make a ten, it is helpful in developing relationships for numbers 1 to 10.</p> <p>Five and Ten Frames, as well as Rekenreks, are common models for developing the use of anchors or benchmarks to five and ten.</p>	
<p>Part-part whole relationships</p>	<p>Focusing on a quantity in terms of its parts has important implications for developing number sense. The ability to think about a number in terms of parts is a major milestone in the development of number sense.</p>	

Adapted from Van de Walle, J.A., Karp, K.S., Lovin, L.H. & Bay-Williams, J.M. (2014). *Teaching Student-Centered Mathematics: Developmentally Appropriate Instruction for Grades K-2* (2nd ed.). (Vol. II, 107-116). Pearson Education Inc.