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1. Give (5) research based recommendations from any page(s) of this chapter and be sure to cite the source noted.
 - The counting trajectory, (Clements & Sarama, 2014)
 - Cardinality, Fosnot and Dolk (2001)
 - Thinking about Zero, (Clements & Sarama, 2014),
 - Board games, (Siegler, 2010).
 - “Subitizing, (Baroody, 1987, p. 115)
2. Write a paragraph on how to support "subitizing" in your math classroom.
 - Subitizing is the capacity to perceive an object's quantity right away without having to count it. (Baroody, 1987, p. 115) Also, it can assist students in learning important numerical properties. I believe as a teacher whose goal is to provide the best strategy for my students, with subitizing they will have the ability to acquire crucial concepts like conservation, unitizing, counting on, composing and decomposing numbers, addition, subtraction, and place value when subitizing is used in the classroom.
3. Write a paragraph or create a flow-chart showing what is involved in learning to count.

Precounter	The child in this situation is unable to verbally count. When asked how many, a small toddler
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	will respond, "ball," while gazing at three balls. A number term and a quantity are not connected in the child's mind.
Reciter	Using number words, this youngster counts aloud, though occasionally not in the correct sequence. They may skip items or repeat the same number when there are more numbers to mention than there are objects to count.
Corresponder	A youngster at this grade level is able to state one number for each object in a one-to-one correlation with numbers and things. At the end of the count, if someone asks "How many?" they might have to retell their count to respond.
Counter	This student can precisely respond "How many?" by providing the most recent number counted when counting items in an orderly display (such as a line, for example) (this is called cardinality). They might be able to speak the number immediately after or before a number by counting up from 1, write the matching numeral, and/or write the corresponding numeral.
Producer	At this level, students are able to count out things to a specific number. They are able to demonstrate five blocks if asked to do so.
Counter and Producer	When a child combines the two earlier levels, they are able to count out things, estimate the number of objects in a group, recall which objects are counted and which are not, and react to random groupings. They start to divide tens and ones, such that 23 is 20 plus three more.
Counter Backwards	At this age, a kid can count backwards either physically (by taking away objects one at a time) or orally (by saying "counting down").
Counter Backwards	This young toddler is able to count backwards from numbers other than one. They are able to state the numbers before and following a particular number right away.

Skip Counter	Consequently, the youngster is able to skip-count by groups of a certain number—tens, fives, twos, etc.—understandingly.
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4. How can a five frame and ten frame support a child's understanding of number relationships and what can you learn diagnostically from a child's use of these frames?
 - Students can see a number after five frames. Developing a solid feel of five and ten is beneficial. Children's understanding of numbers and number combinations is improved by its use.
 - Children can develop their number sense with the aid of ten frames. As a foundation for addition, it teaches kids how to subitize. Children gain expertise using numbers and receive a visual representation of them from them. It enables kids to see the box of five without stopping to count them, as well as the box of 10 since they already know it has ten.

5. What are (5) misconceptions children might demonstrate about early number concepts?

Common Challenge or Misconception	What It Looks Like	How to Help
1. The child does not know the counting sequence	One, two, four, nine, three, or five could be skipped over or spoken out of sequence by the young youngster. The child may be able to count aloud up to a particular point (for example, from 1 to 10), but after that, they may use number phrases that they have created themselves. .).	Utilize a puppet that makes a variety of counting blunders, and have students fix the errors it makes. Practice aloud counting as a group (forward and backward). • Study counting manuals. Create cards with numbers on them, then ask them to arrange them on a number line. Match the written numeral with the written number word.
2. The child counts without using a one-to-one correspondence	2.A child does not associate each thing with a single word or number in a one-to-	em from left to right, touching each item and saying each number word

	<p>one correspondence. He touches multiple objects while speaking one number word, or he double counts by using two number words for a single object. He might touch two things while saying a word with two syllables, like "seven" or "thirteen," for instance.</p>	<p>aloud, or moving each object as it is numbered over a line on a work mat or placing it in a bag or box. Work on matching the written numeral with the written number word if a child divides the count over two-syllable counting words. Encourage kids to count while touching each item with a pointer.</p>
<p>The child does not count on</p>	<p>3.</p> <p>When more objects are shown, the child counts out the first set and then starts over at one to recount it.</p> <p>The child counts 1, 2, and 3 while adding three more to the number seven instead of eight, nine, and ten.</p>	<p>Once the kid has counted out one set and stated the number of sets, cover the collection with a piece of paper or place it in a cup.</p> <p>In order to have the youngster visualize the objects, it is intended to hide them from the child's line of sight. Let the</p>

		<p>youngster to take a glance at the hidden collection if necessary, but urge them to consider how many before doing so. Work on a child's subitizing abilities with activities such as 7.2 or 7.18 that require brief pictures.</p>
<p>4. The child is confused by perceptual cues such as spacing or size of counters</p>	<p>4. With the aid of a visual signal, the child determines that a smaller set of larger counters is superior to a larger set of smaller counters. Due to the longer row, the child believes the top row contains more circles.</p>	<p>Children are lacking in the ability to preserve, which is something that can be improved with more counting experiences and activities. Encourage pupils to employ one-to-one correspondence to demonstrate that the two sums are equivalent by posing hypothetical instances. To compare sets, use matching. To match the</p>

		sets, for instance, place counters on top of pictures.
5. Child does not understand the cardinality principle	The young child answers, "How many?" by listing every item that was counted or by indicating the last item.	<ul style="list-style-type: none">• When playing board games with a linear path, leave one counter in each area rather than moving one marker along the path. For instance, if the youngster rolls a 4, she will place a counter in each of the four spaces on the board. How many spaces did you travel? Give numerous chances to count, then ask, "How many?" When adding up collections, for example "1, 2, 3, 4, 5. There are five pencils here."

References

Walle, J.A.V. D., Karp, K. S., & Bay-Williams, J. M. (2018). Elementary and Middle School Mathematics (10th ed.). Pearson Education (US).
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