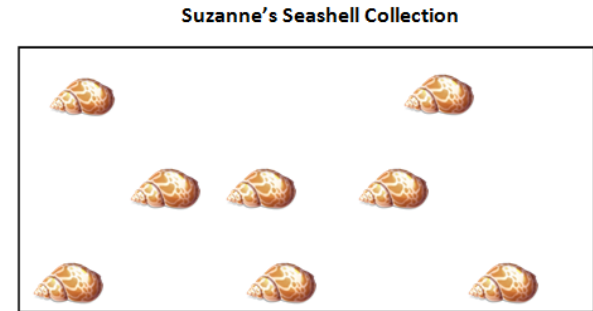


Task: The Seashell Collections **Kindergarten**

Carrie, Ashley, and Suzanne are collecting seashells. Each collection is shown below.



Count the number of shells in each girl's collection. How many shells are in each collection?

Suzanne thinks she has the most seashells. Do you agree or disagree with Suzanne? Explain your answer.

Teacher Notes:

A student page is provided so that students may have easy access to count the number of shells in each collection. The seashell collections contain the same number of shells but are arranged in a line, a rectangular array, and a scattered configuration. Students should understand that the arrangement of the objects in a set does not affect the number of objects in the set. Students should also realize that another important part of counting accurately is being able to keep track of what has already been counted and what remains to be counted.

If students should have trouble understanding that all of the seashell collections contain the same number of shells, you might suggest that they cover the seashells with counters, using a different color for each girl. Students can then determine that the number of objects is the same by matching the counters with a one-to-one correspondence or rearranging the counters to make 3 identical sets with the same arrangement.

Common Core State Standards for Mathematical Content	Common Core State Standards for Mathematical Practice
<p>K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality.</p> <p>K.CC.B.4a When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.</p> <p>K.CC.4b Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.</p> <p>K.CC.4c Understand that each successive number name refers to a quantity that is one larger.</p> <p>K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.</p> <p>K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.¹</p> <p>¹Include groups with up to ten objects.</p>	<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Essential Understandings	
<ul style="list-style-type: none"> Counting tells how many things are in a set. When counting a set of objects, the last word in the counting sequence names the quantity for that set. (Van de Walle) Counting includes one-to-one correspondence, regardless of the kind of objects in the set and the order in which they are counted. (NCTM) The relationship between one quantity and another can be an equality or inequality relation. (NCTM) 	
Explore Phase	
Possible Solution Paths	Assessing and Advancing Questions
<p>Student accurately counts the number of shells in each seashell collection and determines that each collection has eight shells. Student recognizes that the number of shells in each collection is equal and Suzanne is not correct that she has the most seashells.</p>	<p>Assessing Questions</p> <ul style="list-style-type: none"> How did you count the number of shells in each collection? How do you know there are eight seashells in each collection? How do you know the number of seashells in each collection is the same? <p>Advancing Questions</p> <ul style="list-style-type: none"> How is it possible that each collection has eight shells when the collections look so different? What if each collection contained different kinds of shells, would they still have the same number?
<p>Student counts the number of shells in each collection. Student matches the number of shells in each collection using one-to-one correspondence to determine that the number of shells in each collection is the same. Student then determines that Suzanne is not correct that she has the most seashells.</p>	<p>Assessing Questions</p> <ul style="list-style-type: none"> How did you count the number of shells in each collection? How many seashells are in each collection? <p>Advancing Questions</p> <ul style="list-style-type: none"> How is it possible that each collection contains the same number of shells when the collections look so different? If each set contain eight shells, are they equal? How do you know?
Possible Student Misconceptions	
<p>Student does not accurately count the number of shells in each collection.</p>	<ul style="list-style-type: none"> How did you determine the number of shells in each collection? Count the shells again. Did you get the same number?
<p>Student does not understand that the number of shells in each collection is the same. Student thinks that Suzanne’s collection contains more because the collection is scattered and covers a greater area.</p>	<ul style="list-style-type: none"> How many shells are in each collection? How does the number of shells in the collection help us determine who has the most shells? Does the arrangement of the shells affect the number of shells in the collection? Why or why not?
Entry/Extensions	Assessing and Advancing Questions
<p>If students can’t get started....</p>	<p>Assessing Questions</p> <ul style="list-style-type: none"> How can you determine the number of shells in each collection? What number begins the counting sequence?
<p>If students finish early....</p>	<p>Assessing Questions</p> <ul style="list-style-type: none"> How many more shells does each girl need to have a total of 10 shells in her collection? How many shells do the girls have altogether?

Discuss/Analyze**Whole Group Questions**

- How did you determine the number of seashells in each collection?
- Did the arrangement of the seashells make a difference or change the number of shells in each collection?
- How did you determine whether or not Suzanne had the most shells?

The Seashell Collections Task

Carrie, Ashley, and Suzanne are collecting seashells. Each collection is shown below.

Carrie's Seashell Collection



Ashley's Seashell Collection



Suzanne's Seashell Collection



Count the number of shells in each girl's collection. How many shells are in each collection?

Suzanne thinks she has the most seashells. Do you agree or disagree with Suzanne? Explain your answer.