Grade: Kindergarten	**Subject: Math and Science**
Materials: Roll it, count it, write it mats, dry erase marker, dice, objects for counting, game board	**Technology Needed: Elmo or overhead projector to help demonstrate**
Instructional Strategies: ð Direct instruction ð Guided practice ð Socratic Seminar ð Learning Centers ð Lecture ð Technology integration ð Other (list) ð Peer teaching/collaboration/ cooperative learning ð Visuals/Graphic organizers ð PBL ð Discussion/Debate ð Modeling	**Guided Practices and Concrete Application:** ð Large group activity ð Independent activity ð Pairing/collaboration ð Simulations/Scenarios ð Other (list) Explain: ð Hands-on ð Technology integration ð Imitation/Repeat/Mimic

Standard(s) **Math** K.CC.4 Domain: Counting and Cardinality Cluster: Count to tell the number of objects Understand the relationship between numbers and quantities up to 20; connect counting to cardinality. a. Use one to one correspondence when counting objects. b. Understand that the last number name said tells the number of objects counted, regardless of their arrangement or order in which they were counted. **Science** **K-LS1-1.** Use observations to describe patterns of what plants and animals (including humans) need to survive.	**Differentiation** **Below Proficiency:** **Students below proficiency will start by performing the activity with only one dice until they have mastered counting to 6. This group will also have more periodic check in question and answer from teachers or adults in the classroom. Help them recognize animals often live in groups.** **Above Proficiency:** **The students above proficiency will be challenged with four or five dice for counting so they can start counting numbers as high as 24 to 30. If the student asks for another dice to challenge themselves, they will be allowed to grab one. Ask these students to describe why animal species live in groups, how does this make them easier to count?** **Approaching/Emerging Proficiency:** **Students approaching or emerging at proficient will be allowed to count using 2 and 3 dice, so they can count numbers up to 18. Ask the students about some more examples of animals that live in groups?** **Modalities/Learning Preferences:** · **Visual:** **Visual learners will be allowed to organize their thoughts through counting dice, counting objects, counting animals, and spelling out and writing the according numbers. Visual learners will also like the technology application as the process will be simulated for them to see on the board.** · **Auditory:** **Auditory learners will have the ability to listen to the directions and simulated process with the help of technology. In addition, auditory learners will be able to count to themselves out loud which may be beneficial for their Math needs.** · **Kinesthetic:** **Kinesthetic learners will be able to get out of their desk and move to their favorite part of the room to complete the activity and they will be able to choose their most comfortable position for learning. (Standing, sitting, laying down)** · **Tactile :**

Objective(s) **The learner will identify counting numbers up to 20 and classify them using objects on a one to one basis. The learner will also prove using their objects and animals as an example how the last counting number used will show the total number.** **Bloom's Taxonomy Cognitive Level:** **Know, Comprehend, Apply**	**Tactile learners will be able to feel dice in their hands as they roll them, and they will also be able to touch the objects they are counting. This will add to their schema on one to one correspondence.**
Classroom Management- (grouping(s), movement/transitions, etc.) · **Students will be paired in pods or tables with groups of up to 5 students.** · **Teacher will be moving around the classroom while engaging the students and explaining the lesson and activity.** · **The students will be allowed grab their materials, and move around the classroom to get comfortable and complete the activity.** · **The teacher will move around the room in order to better assess student learning and understanding.** · **The students will be asked to return to their desk and put away their materials when the time for the lesson is up.**	**Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)** · **Students will be asked to not touch their materials on their desk unless they are told to do so.** · **Students will be asked to keep the noise levels low or at zero when the teacher is explaining the lesson or talking.** · **Students will be asked to answer questions when called upon, and also participate by asking or answering questions.** · **Students are expected to clean up when asked.** · **Students are expected to respect others personal space when being allowed to move around the room to complete the activity.** · **Students are expected to stay on task and give their best effort!**

Minutes	**Procedures**
	Set-up/Prep: · **Organize sets of dice, counting objects or blocks ahead of time and estimate how many will be needed for each student or pod. (For a group of 20 students you will need roughly 100 dice and 500 blocks) To be even more efficient have the number of dice already set for each student based on how well they have counted up until this point. You can also have organized each students' blocks. (in this way students in different levels of proficiency will not gloat or be offended)** · **Have roll it count it, write it mats assembled and available for students on their desk.**

	Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.) **1. Kindergarteners last night I was playing a board game with my family and it got me thinking about how we know how many spaces to move after we roll the dice?** **2. Can someone tell me how we know how many spaces to move? (count the number of dots on the dice)** **3. Ok, well once we know how many dots there are and spaces to move how do we know how many spaces we should go? (again, we count using counting numbers, one to one correspondence)** **4. *I would model the board game using technology in a way all the students could see and make sure I count aloud and use my finger to show the one to one correspondence**
	Explain: (concepts, procedures, vocabulary, etc.) **1. We have several ways of using our counting numbers including listing in ascending (moving up) order and making a set. (model each way to use a counting number)** **2. The number of counting numbers in a set tells us the number of things or cardinality in a set.** **3. A set gives a counting number a quantity that all groups with that counting number have in common. (3 blocks, 3 gumdrops, 3 dogs are all the same amount)** **4. When making a set, count a number of objects individually in order creating one to one correspondence. (count by ones in order making a list of counting numbers)** **5. The last number we count of our objects in our increasing order is the total number of objects in the set. (show students how not to count)** **6. When animals eat and drink they often do so in large groups. In fact, many animals live in large groups?** **7. Why do animals often live in large groups, and what are these groups called? (safety, security,… colony, herd, band, litter, pack) Can anyone think of a kind of animal that lives in a large group?** ***show a video of animal patterns and how different animals live in different sized groups** **8. We learn to count animals the same way we learn to count any other objects, but what makes counting animals more difficult or even more simple sometimes?** **9. Just like animals have daily patterns and routines, we can have routines in how we count and add up our counting numbers. Animals are a great object to use for practicing and mastering our counting skills.**

	Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) **· Before we begin our activity, I want to have us practice our counting using a few groups of animals. (pictures of a wolf pack, buffalo herd, flock of ducks, litter of puppies, etc.)** **· How can we organize these animals in order to count the correct number? (sets, one to one correspondence)** **· We can organize animals or whatever we intend to count in groups of 1, 5, 10, or even 100.** **· Today we will be doing an activity called Roll it, count it, write it and I have already placed the materials you need on your table in front of you.** **· In this game you will first roll the dice you have in front of you onto your sheet. Then you will use counting numbers to see how many dots there are on your dice.** **· After counting the dots on your dice, you will write out the number in word for and in digit form.** **· Last, you will take out your blocks or objects and place them out one by one individually until your set is in one to one correspondence with your dice and written numbers.** **· Consider the vocabulary we learned earlier like the words cardinality and list.** **· Model the activity using the elmo 2-3 times so the student can see** **· Are there any questions you have before we get started? The plan is to do as many rolls and counts as we can, so we can master our counting skills.** **· If it helps you to count more effectively, pretend the number of dots you roll on the dice is a group of animals. This could help us more clearly create a picture of our counting in our brain.** **· You will have approximately 20 minutes for this activity and you are allowed to find your comfortable place in our classroom. Don't be afraid to ask for help!**

	Review (wrap up and transition to next activity): · **Please return to your desk and place your materials at the side of your desk as we are done with them for the day.** · **Thumbs up, thumbs down if you became a better counter today with the help of our animal examples or our dice activity** · **Fist to five where you think you are in understanding counting (fist means I don't understand and five means I am ready to move on, it is easy Mr. Humann)** · **I hope we learned to count using counting numbers a little better today. Can anyone tell me what they learned today? Can anyone explain one of the vocabulary words we used?** · **I challenge you all to go home and do this activity with your parent using dice and similar materials. Maybe instead of blocks you could use candy or your favorite food! You could also extend your knowledge of counting numbers by playing a board game that uses a dice like I showed at the beginning of class with your family as practice… also discuss how you use your counting to find out how many of something there are such as animals at the zoo…**

Formative Assessment: (linked to objectives, during learning) **Progress monitoring throughout lesson (how can you document your student's learning?)** · **Walk around the room and check in with each student as they practice counting in the roll it, write it, count it activity.** · **Pay attention to which students and how many students are asking questions about counting or how to perform the activity correctly.** · **Thumbs up, thumbs down** · **Fist to five** · **Clarifying questions**	**Summative Assessment (linked back to objectives, END of learning)** **1. Ask a question before starting the math lesson the next day about the student's take home activity/experience from the night before.** **2. A counting practice worksheet in the coming days.** **3. Summative Math and Science assessment related to today's activity**

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

- **This is a math lesson I adapted to incorporate science standards.**
- **It could also be considered a cross-curricular or interdisciplinary lesson.**
- **This is a lesson I have not yet taught, but it has the potential to be taught.**

Here is a link to the handout I would be using to help me teach the lesson:
file:///C:/Users/Owner/Documents/Roll.pdf

Summative Assessment
Math & Science
K-LS1-1-Science
K.CC.4-Math

What sized group would best match these groups of animals?

A. 20
B. 10
C. 5

1.  _____

2.  _____

3. 

_____

Use counting strategies to find the total number of animals.

4. 
_____

5. 
_____

6. 
_____

Criteria	Proficiency Level
The learner has strategies for counting numbers up to twenty, and they can count to making few to no mistakes.	3
The learner displays the ability to accurately count around half of the time, but still lacks consistency in applying appropriate strategies.	2
The learner does not apply the correct strategies for counting and struggles to answer the questions correctly by getting less than half right.	1