



## ***Math Training Camp Carnival***

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Ashley Park PreK-8 School

This curriculum unit is recommended for:  
Math, Kindergarten-1<sup>st</sup> Grade

**Keywords:** join, add, altogether, separate, subtract, and, same amount as, equal, less, more, total

**Teaching Standards:** See [Appendix](#) for teaching standards addressed in this unit.

**Synopsis:** Addition and subtraction are relatively challenging skills to grasp. Because addition and subtraction are math skills that are now a part of the kindergarten common core standards, it is imperative that the kindergarteners master these skills presented. This unit will be including sports into the math activities, and the goal is to stretch the attention spans of the kindergarteners, focusing on engagement. I will do this by intertwining sports into the guided activities in the curriculum unit. Strategies such as counting on fingers, tally marks or circles on paper, and using manipulative objects are very useful; however I find that some students are more invested and engaged when the subject is dealing with a topic of interest. I have also found that physical activity time and physical education class is very important to young students, which has led me to believe that by including different sports into the addition/subtraction area of the math curriculum, it will increase student engagement, understanding, and ultimately student mastery. Kindergarteners are very interested in learning new material, however, their attention spans are short and it becomes difficult to keep that interest during the 2 hour lesson. While I plan to still use the tradition pencil and paper, and manipulative objects at different points throughout the unit, there will be a common theme through each usage: sports. Basketball, football and cheerleading tend to be very popular among my students each year, so I plan to focus the lessons and activities around those particular sports, also including active movements the students tend to enjoy as well.

*I plan to teach this unit during the coming year to 24 students in Kindergarten.*

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## **Math Training Camp Carnival: Adding and Subtracting in Sports**

**LaToya L. Scott**

### **Introduction/Rationale**

The rationale for creating my unit is to provide an engaging curriculum for my kindergarten students that will be fun and active, challenging and significant to the Common Core State Standards. Because addition and subtraction are math skills that are now a part of the Kindergarten Common Core State Standards, it is imperative that the kindergarteners master these skills. Although addition and subtraction could be considered more basic math content, compared to multiplication, division, etc., it is still content that requires understanding and dedication. My goal is to integrate a topic of interest into the addition and subtraction domain of the Common Core State Standards through my curriculum unit.

Strategies such as counting on fingers, tally marks or circles on paper, and using manipulative objects are very useful; however, students tend to be naturally more invested and engaged when the subject is aligned with a topic of interest. In order to get my students invested in the curriculum, I will integrate sports and movement into my unit. I have found that physical activity time and our physical education class is very important to my young students, which leads me to believe that by including different sports and actions into the addition/subtraction area of the math curriculum, it will increase student engagement, understanding, and ultimately student mastery.

I also believe that it is important to explore the different learning styles, because students learn in different ways, so I want my unit to inquire into the kinesthetic learning style. What this means for my unit is a lot of activities that are hands-on, action-based, movement-oriented and tactile. Sports are a great resource for teaching this learning style because of how physically active sports require one to be.

Operations of Algebraic Thinking is the last domain that we address for the school year. It consists of five standards, and I will be addressing four of the five. The first standard is CCSS.Math.Content.K.OA.A.1: Represent addition and subtraction problems with objects, acting out situations, verbal explanations and expressions. The second standard is CCSS.Math.Content.K.OA.A.2: Solve addition and subtraction problems with objects, acting out situations, verbal explanations and expressions. The third standard that I will focus on would be CCSS.Math.Content.K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation. The fourth standard I will address is CCSS.Math.Content.K.OA.A.4. For any number from 1 to 9, find the

number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

I chose this domain largely because it spirals heavily into the next grade, and because there are so many complex components within the standard the students need to have the foundations of operations and algebraic thinking mastered before the next grade. I also chose this domain because it can be very easy to simply set out a pencil and paper, or some math manipulative objects and let the students figure out addition and subtraction content. I believe it is important to explore ways to make the content more interesting for the students.

Kindergarteners are very interested in learning new material, however, their attention spans are diminutive and it becomes difficult to keep that interest during the 1 1/2 hour lesson. My goal is to inspire students to become invested in understanding the material by relating the subject to an activity of interest. My hope is that by including sports into the math lessons, I will be able to stretch the attention spans of my 5-6 year olds. By focusing on engagement, I will see increased mastery of the material in my students. Basketball and football are among the top 10 sports in America and, along with cheerleading, tend to be very popular among my students each year, so I plan to focus the strategies and activities around those particular sports. I will also include other sports and sports-related movements into the activities in the curriculum unit. This will enable my students to be exposed to a kinesthetic style of learning.

## **Objectives**

I will concentrate on the Operations and Algebraic Thinking Standard and four parts of that domain. The first standard is CCSS.Math.Content.K.OA.A.1: Represent addition and subtraction problems with objects, acting out situations, verbal explanations and expressions. I will incorporate acting out a sport during the guided lessons, and have the students represent the sport using sport equipment during independent practice. Sports such as basketball and football allow students to act out and demonstrate making points in a game. Cheerleading allows students to represent the combining of numbers of cheerleaders for a particular cheer.

The second standard is CCSS.Math.Content.K.OA.A.2: Solve addition and subtraction problems with objects, acting out situations, verbal explanations and expressions. I will create two activities for the standard: one for addition and one for subtraction. Because the difference between the two standards is that one is representing and the other is solving, the strategies that I come up with will be similar to K.OA.A.1, in that the students will act out the problems, but they will also act out/demonstrate the answer as well. Again, sports such as basketball and football allow students to act out and demonstrate making points in a game, then totally them up by demonstrating the sum through acting out. Cheerleading again can be used to explore combining numbers.

The third standard that I will focus on would be CCSS.Math.Content.K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ). To teach this standard in my curriculum unit, I plan to have students focus on the scores and points of a game to help students understand how to decompose numbers and figuring out multiple ways to do so. Lastly, we will explore combinations of numbers that equal 10 through vigorous activities

The last standard I will address is CCSS.Math.Content.K.OA.A.4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. To teach this standard, I will incorporate movement and focus the activities around acting out and demonstrating the combining of two numbers to reach the sum.

### **Demographic Background**

Ashley Park Prek- 8 School, located in the Central Learning Zone, serves around 575 children on the west side of Charlotte. Our student demographic is 90% African-American, 5.8% Hispanic, 2.5% Asian, 0.7% White and 0.7% other. About 95% of our students are considered economically disadvantaged. Our students are focused on learning, achieving at high levels and attending school regularly. They are actively involved in music, art, gym, technology and hands on learning in two well developed science labs. The staff at Ashley Park is very talented and creative in the ways they approach teaching in the classroom. They accept responsibility for student learning and provide the support structures needed to ensure that every child grows and develops in their academic knowledge.

Our school utilizes the Family Model where our children are assigned a grade level family that they work with everyday instead of just one classroom teacher. The students work together in small groups that change throughout the day based upon the needs of each child. A group of teachers and staff members are assigned to work with each family grade level structure to maximize the learning that occurs daily.

Ashley Park PreK-8 School is also a part of the Project L.I.F.T (Project Leadership & Investment For Transformation), which is a public/private partnership organized as a non-profit organization. Ashley Park, along with 8 other schools on the West Corridor of Charlotte, contributes to Project L.I.F.T by committing to the goals of 90% of all student at or above grade level in reading and math, 90% of students make more than one year's growth in one year's time, which will ultimately lead to 90% of our students graduating from West Charlotte High School.

At Ashley Park PreK-8 School, we believe that our Family Model creates a successful learning environment, which teachers must work collaboratively to maximize instructional excellence and that in order for students to achieve at high levels they must feel safe and supported in their learning environment. We also believe the learning process must be exciting, engaging, and must promote higher level thinking as a way to ensure the academic needs of all students are met, along with that strong supportive communication with parents provides a positive impact on learning. It is also important for us to celebrate our accomplishments throughout the school year

Last year I had a class of extremely active and imaginative kindergartners whom inspired me to explore this seminar with the math curriculum unit. They were very passionate about playing any sport they could think of, obsessive about their physical education class and took all the brain breaks we had in class seriously. I saw the excitement that came with those areas of interest and felt that I could incorporate that into their learning somehow. This year, the 24 kindergartners that are in my class are showing that same anticipation for movement and sports. This unit will be designed to meet the needs of those kinesthetic learners through action and movement within addition and subtraction.

### **Kinesthetic Learner**

As mentioned before, a lot of my students are kinesthetically wired, always preferring to be mobile and active during class. Kinesthetic learners are able to learn through movement of their body muscles, also known as hands-on learners. These learners use their bodies and sense of touch to learn about the world around them, and typically use hand gestures and other body language to communicate. Kinesthetic learners are able to focus better with movement incorporated. You may recognize a kinesthetic learner by the way they are continuing to move even while sitting through rocking in their chair, tapping their leg, etc.

They are also excellent with their hands, being able to fix things easily. A hands-on learner, more frequently, is well-coordinated and has a good sense of timing and body movement. When learning a new skill or topic rather than listening to a lecture, read a book, or look at diagrams a kinesthetic learner would prefer to physically work out the activities. The thought of sitting in a lecture listening to someone else talk is detestable. In those circumstances, this type of learner will fidget or can't sit still for long and would want to get up and move around. (LeHigh)

Learning can be described as “the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (Kolb, 1984, p. 41). It is meant to be explorative and ever-changing because there is not just one way to learn. “Howard Gardner (1983) explained his theory of multiple intelligences (MI) as opposed to one static intelligence; Intelligence Quotient (IQ).

He proposed that people have a mixture of kinesthetic, linguistic, mathematical, musical, spatial, interpersonal, and intrapersonal ways of processing new information. Dunn & Dunn (1985) developed a learning style model that includes 21 different learning preferences separated into the stimuli categories of environmental, emotional, physiological, psychological, and sociological. It is the physiological and environmental categories that pertain to the types of kinesthetic learning this paper explores. Kinesthetic learning contexts are one approach students can utilize to process new information. Finally, Eric Jensen (1998) proclaimed that educators need to teach with the brain in mind.”(Davis, 2007)The critical review of research studies showed that some students benefit significantly from kinesthetic learning opportunities. This means that it is important to include movement into some learning activities.

### **Strategies and Activities**

Welcome to Math Training Camp Carnival! Here, you will go through eight intensely fun, rigorous and active training stations that will prepare you for the Kindergarten Math Common Core State Standards. We will be training in Operations and Algebraic Thinking, which is all things addition and subtraction! In order to help us train, we will bring in different sports and movements. To represent addition and subtraction, there will be integration of basketball and football. To tackle solving addition problems, our sport of choice is baseball and to solve subtraction problems we will use our juggling skills. For decomposing numbers to ten, we will venture into the worlds of cheerleading and bowling. Lastly, we will explore different combinations of numbers to make 10 through two extremely active movements—jumping rope and frog leaping. So get ready to be amazed by these extraordinary math and sports-centered activities.

For standard CCSS.Math.Content.K.OA.A.1: Represent addition and subtraction problems with objects, acting out situations, verbal explanations and expressions. The strategy for teaching this skill would be to act out and demonstrate each sport. For instance, with basketball, the students would be presented with an addition word problem such as, “A group of friends were playing basketball. Tony made 4 baskets. Maria made 3 more baskets. How many baskets were shot altogether?” The students would shoot the baskets with an actual object to represent the number of baskets being made. Not all students will be equally skilled at making baskets. Depending on the group, one could use hula hoops and crumpled pieces of paper or beanbags. In this way, there is still some challenge but an environment where students of various skill levels can succeed.

Activity #1:

Toss the Basketball

*Activity Logic:*

Basketball and addition go hand-in-hand. When I think of basketball, I think of how the game is scored. You are essentially accumulating points based on the number of shots, which is the skill of addition. It is easy for the student to grasp the skill of throwing a ball into a basket. In this activity's case, the students will aim for a hula-hoop instead of an actual basketball hoop, which will make it easier to gain points and add. Instead of using one ball and counting each shot individually, the students will be given enough balls so that they are able to count the shots altogether. If possible, try to allot no more than 2 different colors of balls to each pair so that the students are able to keep track of both sets of numbers.

*Grade level:*

Kindergarten and First grade students

*Formation:*

The teacher will place hula hoops on the floor, around the room, spaced out. A pair of students will be at each hula hoops

*Length of Activity:*

Toss the Ball can last 20-30 minutes

*Equipment/ Materials:*

Hula Hoops (enough for each pair of partners to have one to share)  
Ball-like objects (beanbags, erasers, etc.)

*Opening:*

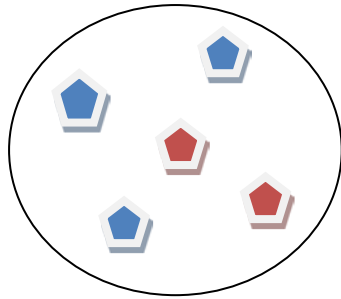
We will be pretending to play basketball. The hula hoops are the baskets, and the beanbags are the ball. You and your partner will each take turns throwing the correct number of beanbags to make the addition problems.

*Instructions/Rules:*

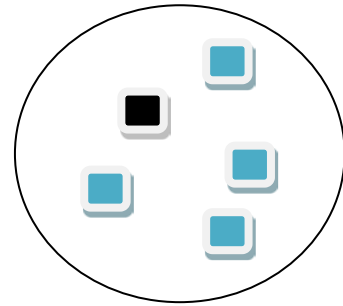
1. Partners will share 10 beanbags (or similar objects) no more than 2 colors
2. You will need to watch the teacher.
3. When I write the problem on the board partner 1 will show the first number in the basket (hula hoop) using the basketball (beanbags) and partner 2 will show the second number of the problem using the basketballs. (example below)
4. The students will each record the findings onto worksheet (attached).

\*\*After representing the given problems, students will use their new knowledge of how to create addition problems, and give their partners addition problems to represent.

EX.  $3+2$



$4+1$



Addition Problems for Activity 1:

1+3	6+4	0+4
2+1	7+1	8+2
3+2	5+2	9+0
4+3	3+3	5+5
5+4	4+4	2+6

*Finish:*

As your students are making shots, these are some things that you will want to look for, for understanding. Are your students able to keep track of the number of balls thrown? If not, try to see that those students are given a set of balls that have only two colors, so that one color represents the first number and the other color represents the second number. Do the students struggle with creating the addition problem on the dry-erase board? If this is something you find, you will want to have some dry-erase boards already prepared with the addition problem formula (i.e.  $\_\_ + \_\_ = \_\_$ ) for them to fill in until they become comfortable with writing out the problem themselves.

Activity #2:

Subtraction Football

*Activity Logic:*

I have related subtraction and the number line to the sport of football because when I think of football, I envision the field. The football field, with the yards labeled, is reminiscent of a number line. I personally like to use a number line when teaching



kindergartners subtraction because I think it is important for them to have a visual when counting backwards. This is the reason I felt an activity on subtraction would connect well with football. It gives the students a chance get comfortable with counting backwards and more practice with the order of numbers. It also helps them keep track, so this will help the activity flow instead of them having to constantly start over and get bored or frustrated with the activity. We want our students to not only be learning, but to also be engaged and inspired to learn.

*Grade level:*

Kindergarten and First grade students

*Formation:*

Teacher will use the sidewalk/playground and mark the sidewalk to look like a number line.

*Length of Activity:*

Subtraction Football can last 20-30 minutes

*Equipment/ Materials:*

Chalk  
Football (or other ball)

*Opening:*

We will be pretending to play football using the number line on the sidewalk. The football field is reminiscent of a number line, so we will imagine the number line is our football field. Each number represents a yard on the football field. Number lines come in very handy when we subtract because it helps us keep track of what we have already taken away.

*Instructions/Rules:*

1. I will first say the entire subtraction problem and you will only listen. (ex. Four take away three)
2. I will repeat the first part of the problem and you will show it by walking the number line. (EX. Four)
3. I will repeat the last part of the problem and you will go backwards on the number line. (take away 3)

4. I will say the problem one more time, but this time you will see how quickly you can represent the subtraction problem. It will be a race against another classmate.
5. You may not skip any numbers, you must step on each number in order for it to count
6. The students will each record the findings onto worksheet (attached).

Example of Sidewalk Number line

**1      2      3      4      5      6      7      8      9      10**

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Subtraction Problems for Activity 2:

3-2	8-4	4-1
6-1	7-1	8-2
3-2	5-2	9-7
4-3	3-3	5-5
5-4	4-4	10-6

*Closure:*

As your students are working out the subtraction problems, there are some things you want to look for to check for understanding. Are they able to count and move with ease without relying on the numbers on the number line? Or are they moving slowly and having to depend on the numbers written on the sidewalk? I imagine when first introduced, the majority will rely heavily on the number line, however, after more practice with counting backwards, they should slowly be able to glide across the number line with ease. To enrich this activity, you will want to erase the numbers from the line, and use problems with numbers up to 20.

The second standard is CCSS.Math.Content.K.OA.A.2: Solve addition and subtraction problems with objects, acting out situations, verbal explanations and expressions. The strategy for teaching this skill would also be through acting out the addition and subtraction problems, but focusing on the solution. An example of that would look like a couple of students paired up and while the teacher is reading the problem, one student is acting out the problem and solution, while the other is checking the work (number of baskets made altogether) by using tally marks on a white board to make sure it all adds up.

Activity #3:

Pitch the Baseball

*Activity Logic:*

When thinking up activities for this standard, I wanted to use a sport in which the movements are predictable and repetitive. Baseball immediately came to my mind because of the pitching movements. Instead of including the pitch of the ball, the hit of the ball and finally the race around the bases, you will focus on the pitching portion of the game. The students can take the act of pitching and repeat that movement to create addition problems and solve them. Another reason I chose to use baseball as a sport of interest is because the students in my class are not as familiar with the game of baseball, so I saw this as an opportunity to introduce my students to a new sport. Before this activity, you can give a quick overview of the game of baseball.

Unlike K.OA.A.1, the students not only have to represent the addition and subtraction problems, they also have to solve the problem. So instead of focusing on how many balls the first player “pitched” and how many the second player “pitched”, there should be a bigger focus on the total amount of balls “pitched” giving the students their solution to the addition problem.

*Grade level:*

Kindergarten and First Grade students

*Formation:*

The teacher will hang hula-hoops in the air, around the room. You can take a paper clip, tie a piece of string onto one side, and the hula-hoop to the other side and tape the paper clip to the ceiling. A pair of students will be at each hula hoops with beanbags.

*Length of Activity:*

Pitch the Baseball can last 20-30 minutes

*Equipment/ Materials:*

Hula Hoops (enough for each pair of partners to have one to share)  
Beanbags or soft balls

*Opening:*

We will be pretending to be pitchers at a baseball game. You will take turns soft pitching (that means throwing lightly!) the ball through the hula hoop, pretending the hula hoop is

the batter. You and your partner will each take turns throwing the correct number of beanbags to solve the addition problems.

*Instructions/Rules:*

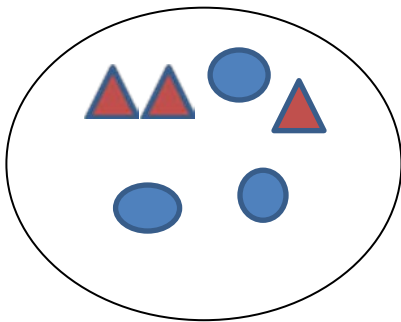
1. Partners will share 10 beanbags (or soft balls).
2. You will need to watch the teacher.
3. One partner will throw enough beanbags to show the number for first part of the problem, and the second partner will throw enough to show the second number of the problem. (See example below.)
4. As partners, you will count the total amount of beanbags that were through “to the batter” (through the hula hoop) to figure out the sum of the addition problem.
5. The students will each record the findings onto worksheet (attached).

\*\*After representing the given problems, students will use their new knowledge of how to solve addition problems, and give their partners addition problems to represent.

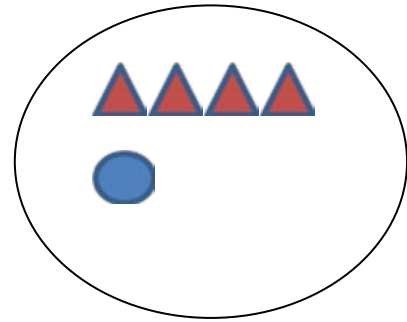
Addition Problems for Activity #3:

1+3	6+4	0+4
2+1	7+1	8+2
3+2	5+2	9+0
4+3	3+3	5+5
5+4	4+4	2+6

EX.  $3+3=?$



$4+1=?$



*Finish:*

By the end of this activity, the students should understand that the goal is to find out how to combine two numbers to get a bigger number. When the students are adding, we want to make sure that they are keeping track of the objects counting and double checking their counting afterwards. Have the partners hold each other accountable (I find

that a lot of my kindergartners do this without even having to be asked!). After some practice, you may start to notice some of the students become so comfortable that they are able to just count on from the first number of balls as their partner pitches the second number.

Activity #4:

Juggle, Juggle, Juggle

*Activity Logic:*

Juggling is a tricky skill to achieve; however, the 5 and 6 year olds love it! Although not a sport in the traditional sense, it is an activity that requires movement, and our main goal is to get the students active and engaged, and juggling will do just that. The customary way to juggle will most likely be difficult for the students, especially if the numbers start higher, so I would recommend having the students lay out the specified number of beanbags on the table, and throw them up one at a time. That is another reason why I chose juggling for subtraction as opposed to addition. It will get easier for them to juggle as they start to take away some of the beanbags.

*Grade level:*

Kindergarten and First Grade students

*Formation:*

The teacher will set out soft, stuffed balls or beanbags

*Length of Activity:*

Juggle, Juggle, Juggle can last 10-15 minutes

*Equipment/ Materials:*

Beanbags or soft balls

White boards

Dry erase markers

*Opening:*

We will use the beanbags to juggle. After we juggle we will count how many balls were used and subtract that amount from how many our partner used.

*Instructions/Rules:*

1. Partners will share 10 beanbags (or soft balls).
2. You will need to watch the teacher.
3. The teacher will write a number on the board and partner number one will juggle that amount of beanbags.
4. Students will juggle for 30 seconds, while partners write how many beanbags juggler is using.
5. The teacher will write another number on the board, and partner number 2 will juggle that amount of beanbags.
6. Students will juggle for 30 seconds, while partners write how many beanbags juggler is using.
7. As partners, the students will use beanbags to show the biggest number juggles, and take away the smallest number of beanbags used to juggle.
8. Students will then take turns juggling with the answer to the subtraction problem.
9. The students will each record the findings onto worksheet (attached).

\*\*After representing the given problems, students will use their new knowledge of how to solve subtraction problems, and give their partners addition problems to represent.

Subtraction Problems for Activity #4:

6-3	4-2	5-2
5-1	5-3	6-2
3-2	3-1	3-0
4-3	3-3	2-1
2-0	6-4	6-5

*Finish:*

Again, unlike K.OA.A.1, the students are not only required to represent the subtraction problem, they need to be able to solve the problem. This activity does not require a number line, so the students might have some trouble remembering to count backwards for subtraction. If you do find that students are forgetting, and instinctively wanting to add, have their partner hold up an index card of the subtraction symbol as simple reminder.

CCSS.Math.Content.K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ) is the third standard. The strategy for teaching this skill would be to focus on combinations of points or groupings for basketball, football and cheerleading. In football a touchdown is worth six points, but players can earn extra points or a two point conversion. In basketball, a

free throw is worth 1 point, a shot outside the 3-point line is worth 3 points and inside that line is worth 2 points. Knowing this can mean many different variation of how the sum was formed. With cheerleading, some cheers require possibly more bases than flyers, or not as many spotters as bases, so students will be able to look at how the total number of cheerleaders used in a cheer was decided.

Activity #5:

Gimme a 10!

Activity Logic:

I really wanted to broaden my kindergartners' views with this activity, because they are at a stage where certain things are gender-specific in their minds. Cheerleading is a sport that, although both men and women participate, many people think it is only a "girl sport". I wanted to show these 5- and 6-year-old boys that cheerleading is a fun sport for both boys and girls, and it incorporates math. Common Core standard K.OA.A.3 focuses on decomposing, so it also made the most sense for this standard because cheerleading allows for flexible groupings.

*Grade level:*

Kindergarten and First Grade students

*Formation:*

Students will be placed in groups of 10\*\*

*Length of Activity:*

Gimme a 10! can last 10-15 minutes

*Equipment/ Materials:*

Pencil paper  
Short cheer or chant

*Opening:*

We will figure out different ways to make \*\*10 by cheering in different sized groups

\*\* You may change the number to make the groups even.

*Instructions/Rules:*

1. Teacher will teach this chant to class:  
Hey Class, let's do it!  
Ms/Mr. (insert name)'s class can't be beat!  
Come on crowd, let's hear it now!
2. Teacher will write this equation on the board. ( \_\_\_\_ + \_\_\_\_ = \*\*10)
3. As a group, you will need to figure out how to divide (or break up the group) into two parts.
4. Your goal is to figure out different ways to make the number \_\_\_\_.
5. In order to get a point, you will need to use all the people that are in your group. If you don't use all the people in your group, it will not equal \_\_\_\_.
6. I will start the timer. When the timer goes off, you will say the cheer and I will fill in the blanks for both groups based on the numbers in each grouping.
7. You will get a point for each original combination of numbers that equal \_\_\_\_.
8. How many different combinations were you able to come up with in order to get the wanted number?
9. The students will each record the findings onto worksheet (attached).

*Finish:*

The most important part of the activity is not so much the cheer, but the division of the groups to make different combinations. This could potentially get complicated because after a few combinations it would become difficult to keep track of the arrangements. I recommend before starting with groups of 9 or 10, to start out with smaller group numbers and work them up to bigger groups. Also, to make the activity more engaging, let the groups of students create their own cheers and movements!

Activity #6:

Strike!

*Activity Logic:*

Bowling was the sport I chose to center this activity around. This is another sport that my students are not as familiar with, so I saw this as the perfect opening to introduce some information about the sport of bowling as well. Bowling fit perfectly with this standard because in a traditional game. There are 10 pins, some of which may get knocked down when the bowling ball is rolled. This means there will be some pins left standing. This standard requires the students to understand how to decompose numbers up to ten. The students will count and see that there are 10 pins to start, and when the ball is rolled, it will create an addition equation. For example, before the ball is rolled the equation will be \_\_\_\_+\_\_\_\_=10. When the ball is rolled and, let's say, 4 pins are knocked down, the



students will see that there are 6 pins still standing. They can take the number of pins knocked down and the number of pins still standing and input those numbers into the incomplete equation, like this:  $\underline{4} + \underline{6} = 10$ . This bowling activity will give the students a good chance to witness different combinations of numbers that decompose the number 10.

*Grade level:*

Kindergarten and First Grade students

*Formation:*

Students will be put into groups of three (or four, depending on how many bowling pins are available).

*Length of Activity:*

Strike! can last 20-25 minutes

*Equipment/ Materials:*

Bowling pins or something similar (ex. plastic bottles with a little sand inside)  
Kickball (or something similar)  
Dry erase board  
Dry erase marker  
A piece of chalk

*Opening:*

We will figure out different ways to make 10 by bowling and counting the pins that are standing and the pins that have fallen.

*Instructions/Rules:*

1. Teacher will give each group of students a set of 10 bowling pins and a kickball.
2. Students will set up bowling pins on the chalk marks to make the traditional bowling pin formation.
3. Students will take turns rolling the kickball towards the bowling pin formation.
4. Students need to allow the ball to knock down however many pins, and not interfere with the process.
5. After all the pins that were hit fall, the students will count how many fell and write the number into the given addition problem template ( ex.  $3 + \underline{\quad} = 10$  )

6. The students will also count how many pins are still standing and place that number into the addition problem template. (ex.  $3+7=10$ )
7. The students will each record the findings onto worksheet (attached).
8. Students will each take turns rolling the kickball and filling in the blanks on the dry-erase board, however every students needs to record answers onto the worksheet.

### *Finish*

With any of these sports-related math activities it is very easy for the student to get caught up in “playing the game”, without practicing the desired math skill. I always find it helpful to begin the activity with the equation already written on our smart board so that the students know exactly what skill they are expected to practice. It may even help to create reusable blank equation cards that the students can use Vis-à-vis or dry erase markers to fill in as they bowl. For accountability, create a worksheet that contains as many blank equations for as many combinations as the number entails, and have the students be required turn it in so that you are able to use it as a summative assessment or exit ticket and gauge the students’ understanding of the skill.

CCSS.Math.Content.K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

Activity #7:

How Many Jumps?

*Activity Logic:*

Jumping rope is not a sport in itself, however many athletes jump rope as a form of exercise and sports conditioning to prepare for a sport because of how vigorous it can be. I chose this movement because it is very active and it will surely keep the students engaged. This activity also allows the students to practice another skill in which they need to be able to count on from a given number in that after the students flip the number card, they will need to count on from that number as they jump rope. Students will also get practice with keeping track, as the partners tally each jump that is taken.

*Grade level:*

Kindergarten and First Grade students

*Formation:*

Students will be placed in pairs

*Length of Activity:*

How Many Jumps? can last 20-25 minutes

*Equipment/ Materials:*

Jump ropes (1 for every 2 students)

Dry-erase boards

Dry-erase markers

Number cards 0-9

*Opening:*

We will figure out different ways to make 10 through jumping rope.

*Instructions/Rules:*

1. Give each pair of students a set of number cards 1-9 and a jump rope.
2. Choose the partner that will jump first (the jumper) and the partner that will flip the card, as well as write on the whiteboard (the writer).
3. The writer will shuffle the number cards then flip over the top card. Both partners will say the number aloud.
4. The jumper will need to begin jumping rope while counting on from the given number up to 10. (For instance, if the card is 5, the jumper needs to start with the number 6 when he/she begins to jump rope.)
5. While the jumper is jumping rope, the writer is going to mark a tally for each jump.
6. When the jumper gets to 10, the writer is going to count all of the tallies and write the numeral to figure out what number was needed to get to 10 from the given number.
7. The writer will create an addition problem using the given number and the numeral from the tallies. ( $5+5=10$ )
8. The jumper and the writer will switch jobs so they each have a turn to jump and write.
9. The students will each record the findings onto worksheet (attached).

*Finish*

Remind the student that is the jumper to begin counting on whichever number is on his or her card. A lot of times I find that they want to start jumping from 1 until they get to ten and the student that is the writer forgets to start tallying from the number on the card,

distracting the students from their ultimate goal. This will make it easier for the writer to tally. If needed, it is very simple to remediate or enrich this activity. To remediate, you will want to cut the ending number in half and have to students figure out how to make 5. When you do this, give them number cards 1-4. On the other hand, if students are making great strides with figuring how combine numbers to make 10, try giving them number cards 1-14 and have those students figure which combination of numbers make 15.

## Activity #8

### Leap Frog Addition

#### *Activity Logic:*

Again, this activity does not use an actual sport, but the frog leap is a great movement for the kindergartners, requiring jumping and using the leg muscles. Leap Frog is very similar to How Many Jumps in that both activities require sufficient participation and focus from both partners. The only difference is that, in addition to the number cards, the students will have a number line to help keep track of the second numbers instead of having to tally.

#### *Grade level:*

Kindergarten and First Grade students

#### *Formation:*

Students will be placed in pairs

#### *Length of Activity:*

Leap Frog Addition can last 10-15 minutes

#### *Equipment/ Materials:*

Number lines written on pavement (1-10)

Chalk

Dry-erase boards

Dry-erase markers

Number cards 0-9

#### *Opening:*

We will figure out different ways to make 10 through leaping across the number line

*Instructions/Rules:*

1. I will give each pair of students a set of number cards 0-9 and they will go to a specified number line.
2. Choose the partner that will leap first (the frog) and the partner that will flip the card as well as write on the white board (the toad).
3. The toad will shuffle the number cards then flip over the top card. Both partners will say the number aloud.
4. The frog will need to begin leaping on the number line, starting from the given number up to 10. (For instance, if the card is 3, the leaper needs to start with the number 4 when he/she begins to leap on the number line.)
5. While the frog is leaping the number line, the toad is going to mark a tally for each leap taken.
6. When the frog gets to 10, the toad is going to count all of the tallies and write the numeral to figure out what number was needed to get to 10 from the given number.
7. The toad will create an addition problem using the given number and the numeral from the tallies. ( $3+7=10$ )
8. The frog and the toad will switch jobs so they each have a turn to leap and write.
9. The students will each record the findings onto worksheet (attached).

*Finish*

If needed, remind the students that they will need to begin leaping from the number that was on the card drawn so there will be no confusion when it comes time to enter the numbers into the equation. If the students have trouble leaping and landing on the correct number, consider leaving more than usual space between numbers. It doesn't have to be completely accurate spacing—while we want the students to focus on the numbers, we also want them to have a good time incorporating the movement into learning the skill.

Name \_\_\_\_\_ Date \_\_\_\_\_

### Math Training Camp Carnival Recording Sheet

1. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_      2. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

3. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_      4. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

5. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_      6. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

7. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_      8. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

9. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_      10. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

11. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_      12. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

13. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_      14. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

15. \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

(MASTER)

## Recommended Book List

1. Discover Your Child's Learning Style: Children Learn in Unique Ways - Here's the Key to Every Child's Learning... by Willis, Mariaemma and Kindle Hodson, Victoria (Jun 26, 2013)
2. Every Child Can Succeed: Making the Most of Your Child's Learning Style by Cynthia Ulrich Tobias (Jul 1996)
3. How Your Child Learns Best: Learning Styles and Preferences by Ellyn Davis (Jul 31, 2013)
4. The Kinesthetic Classroom: Teaching and Learning Through Movement by Traci L. Lengel and Michael (Mike) S. Kuczala (Jan 26, 2010)
5. The Fine Line between ADHD and Kinesthetic Learners: 197 Kinesthetic Activities to Quickly Improve Reading, Memory... by RickiLinksman (May 25, 2012)
6. Salt in His Shoes: Michael Jordan in Pursuit of a Dream by Deloris Jordan, Roslyn M. Jordan and Kadir Nelson (Nov 1, 2003)
7. All about Basketball by George Sullivan (Oct 31, 1991)
8. Sports Illustrated Kids 1st and 10: Top 10 Lists of Everything in Football by Sports Illustrated For Kids (Oct 25, 2011)
9. My Football Book by Gail Gibbons (Aug 22, 2000)
10. Football: How It Works (The Science of Sports) by Agnieszka Biskup (Apr 1, 2010)
11. Cheerleading Really Is a Sport (Victory School Superstars) by Julie A Gassman and Jorge HoracioSantillan (Aug 1, 2010)
12. Goodnight Baseball (Capstone Young Readers) (Sports Illustrated Kids) by Michael Dahl (Feb 1, 2013)
13. Bowling in Action (Sports in Action) by Niki Walker, Sarah Dann and Marc Crabtree (Mar 2003)
14. Bowling by the Numbers (Sandcastle: Sports by the Numbers) by Desiree Bussiere (Sep 1, 2013)

## Works Cited

Biskup, Agnieszka. *Football: how it works*. Mankato, Minn.: Capstone Press, 2010. Print.  
This book is an informational resource, with useful information on the players, rules and glossary of football terminology.

"Characteristics of a Tactile/Kinesthetic Learner." *LeHigh University*. N.p., n.d. Web. 21 Sept. 2013.

<[http://www.lehigh.edu/disabilities/cas/pdfs/LS\\_Tactile\\_Learner.pdf](http://www.lehigh.edu/disabilities/cas/pdfs/LS_Tactile_Learner.pdf)>.

This website provides some background information on the characteristics of kinesthetic learners.

Davis, Hilary. "LET THEM MOVE: KINESTHETIC LEARNING AND COGNITION." *LET THEM MOVE: KINESTHETIC LEARNING AND COGNITION* n/a (2007): n. pag. *evergreen.edu*. Web. 8 Nov. 2013.

Let Them Move provides reads with a supportive point-of-view for including kinesthetic learning opportunities within the classroom.

"Kindergarten Math Wiki Updates." *Kindergarten Common Core Math*. N.p., n.d. Web. 24 Sept. 2013.

<<https://gradecommoncoremath.wikispaces.hcpss.org/Kindergarten+Home>>.

Kindergarten Math Wiki website is an in-depth dive into the kindergarten math standards that breaks each standard down by sections, including activities and assessments as well as online and print resources.

"Kinesthetic Learners." *Kinesthetic Learners*. N.p., n.d. Web. 3 Oct. 2013.

<<http://www2.yk.psu.edu/learncenter/acskills/kinesthetic.html>>.

This website provides some background information on the characteristics of kinesthetic learners as well as what type of strategies work best for the kinesthetic learner.

LeBoutillier, Nate. *Play basketball like a pro: key skills and tips*. Mankato, Minn.: Capstone Press, 2011. Print.

This book is an informational resource, with useful information on the rules of the game as well as guidelines on how to do well in basketball.

Mullarkey, Lisa. *Cheerleading basics*. Berkeley Heights, NJ: Enslow Publishers, 2011. Print.

This book provides information on the history and system of cheerleading.

Nelson, Esther L., and Shizu Matsuda. *Movement games for children of all ages*. New York: Sterling Pub. Co, 1975. Print.

This book suggests a variety of activities to get kids active and moving.



"See Learn Do." *See Learn Do*. N.p., n.d. Web. 15 Oct. 2013.

<<http://www.fitkidsnc.com/SeeLearnDo.aspx>>.

This website offers a surplus of lively games and activities for kids to do to stay active.

## Appendix

### North Carolina Common Core State Standards

- [CCSS.Math.Content.K.OA.A.1](#) Represent addition and subtraction with objects, fingers, mental images, drawings<sup>1</sup>, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
- [CCSS.Math.Content.K.OA.A.2](#) Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
- [CCSS.Math.Content.K.OA.A.3](#) Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ).
- [CCSS.Math.Content.K.OA.A.4](#) For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

Through participation of the activities in this curriculum unit, students will investigate each of the kindergarten math standards listed above. Every activity is focused around a sport or particular movement. The goal of this unit is to reach students through their interest in sports and keep them engaged and active in order to reach mastery. This unit also provides an opportunity to introduce lesser known sports as background information.