## MATH

CLASSROOM ENERGIZERS



Community \＆Clinical CONNECTIONS for Prevention \＆Health
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PUBLIC SCHOOLS OF NORTH CAROLINA
State Board of Education
Department of Public Instruction

## NAME OFACTIVITY: Crazy Coordinates

| GRADE LEVEL: | 6th |
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| SUBJECT AREA: | Math |
| NC STANDARD COURSE <br> OF STUDY OBJECTIVE <br> NUMBER: | 6.SP.4 <br> Display numerical data in plots on a number line, including dot plots, histograms, <br> and box plots. |
| FORMATION: | Standing at desk with a partner |
| EQUIPMENT: | Boom box, rock music, graph paper with coordinate grids drawn on them, chalk <br> board with coordinate grid drawn on it, pencil |
| RULES/DIRECTIONS: | 1. Teacher plays music softly. <br> 2. Students face partner and do an activity from the Movement Bank <br> (e.g., squats, jog in place, jumping jacks, shoot an imaginary basket) |
| 3. After 10 to 15 seconds, teacher stops music and calls out an ordered pair with its <br> capital letter label, writing it on the board as s/he calls it out. |  |
| 4. Students plot and label the ordered pair on their coordinate grid. <br> 5. Continue until all points have been plotted. <br> 6. As students cool down, have individual students plot points on chalk board and <br> check their work. |  |
| VARIATIONS: | 1. Same activity, but teacher plots point on the board and students write the ordered <br> pair. Use this activity to reinforce graphing ordered pairs in all four quadrants of <br> the coordinate grid. Activity can be done with 6th, 7th, or 8th graders. |
| 2. For ease of movement move desks to the sides of the room. |  |
| 3. Rotate partners to evenly distribute energy. |  |

## NAME OFACTIVITY: Custom Fit

| GRADE LEVEL: | 6th |
| :--- | :--- |
| SUBJECT AREA: | Math |

NC STANDARD COURSE
OF STUDY OBJECTIVE NUMBER:

| FORMATION: | Standing at desks |
| :---: | :---: |
| EQUIPMENT: | None |
| RULES/DIRECTIONS: | 1. Write the following activities on the board. <br> - Inches - 12 baby hops forward then backward <br> - Feet - 3 large steps forward then backward <br> - Yards - lunge forward and backward <br> - Miles - pretend to run through tires on a football practice field ( 20 seconds $=1$ mile) <br> 2. Students should be running in place until they act on the answers. <br> 3. Teacher calls out physical activity to be done with each appropriate unit of measure. <br> 4. Teacher reads expressions such as, distance from Boston to Chicago. Students respond with activity corresponding to the appropriate unit of measure. <br> 5. After 10 to 15 seconds, teacher calls out a new expression. <br> 6. Continue this activity until all expressions are called out. Repeat expressions that need more reinforcement. |
| VARIATIONS: | 1. Have students perform the same activity with metric units of measure, millimeters, centimeters, meters, and kilometers. Students can tiptoe for millimeters. <br> 2. Use this activity to reinforce appropriate units of linear measure. <br> 3. Select new activities from the movement bank to maintain student interest. <br> 4. If space permits have students begin the activity with an arm's length in front and back of them. |

## NAME OFACTIVITY: Heard it through the Grapevine

| GRADE LEVEL: | 7th |
| :--- | :--- |
| SUBJECT AREA: | Math |

NC STANDARD COURSE
OF STUDY OBJECTIVE NUMBER:

| FORMATION: | Students stand at desks, facing the side of the room. |
| :--- | :--- |
| EQUIPMENT: | None |
| RULES/DIRECTIONS: | 1. Teacher should review the grapevine dance step or have students slide, shuffle, <br> or karaoke. |
|  | 2. Teacher calls out a mathematical expression such as $6+(-6)$. <br> 3. Teacher tells students to grapevine right or left to indicate which direction to <br> move on the number line to perform integer computation. <br> 4. Students grapevine right or left, depending on the sign of the correct answer <br> (e.g., right if it is positive and left if it is negative). |
|  | 5. Students should be doing an activity from the Movement Bank between <br> mathematical expressions. |
| 6. Teacher calls out a new expression. |  |

## VARIATIONS:

1. Have students perform the same physical activity with subtracting integers.
2. Activity is best used with a class of 18 to 20 students.
3. Use activity to reinforce addition using a number line.

| NAME OFACTIVITY: | Jumping Jack Math |
| :---: | :---: |
| GRADE LEVEL: | 6th - 7th |
| SUBJECT AREA: | Math |
| NC STANDARD COURSE OF STUDY OBJECTIVE NUMBER: | 6.NS. 1 <br> Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. <br> 7.NS. 1 <br> Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. <br> 7.NS. 2 <br> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. |
| FORMATION: | Standing at desk |
| EQUIPMENT: | Math problems |
| RULES/DIRECTIONS: | 1. Teacher calls out an addition, subtraction, multiplication, and/or division problem. <br> 2. Student must mentally solve problem and perform the corresponding number of jumping jacks or other specified movements. <br> Movement variations: <br> - Bicep curls with math book <br> - Knee lifts <br> - Standing sit-ups (raise right knee to left elbow, then raise left knee to right elbow) <br> - Squats <br> - Marching in place <br> - Chair dips <br> - Sports activities (tennis shots, football passes, volleyball spikes) <br> 3. Students jog in place while waiting for each math problem. Mental math in action! |
| VARIATIONS: | 1. Incorporate integers, word problems, fractions, and ratios. |

## NAME OF ACTIVITY: Math Mission Impossible

| GRADE LEVEL: | 7th - 8th |
| :--- | :--- |
| SUBJECT AREA: | Math |
| NC STANDARD COURSE <br> OF STUDY OBJECTIVE <br> NUMBER: | Review of any content area |
| FORMATION: | Create four stations, divide the class into groups of no more than 4 students |
| Various: calculators, jump ropes, cones, balls, hula hoops, stop watch |  |

## VARIATIONS:

1. Play Mission Impossible music in the background while students are going through the obstacle course.
2. Have the students create physical tasks that can be done by teams.
3. Demonstrate the type of lever using body parts.
4. Do only one station per day to cut back on time.
5. Place a math worksheet at each station to supply the academic task.

## NAME OF ACTIVITY: Operation Computation

| GRADE LEVEL: | 6th - 7th |
| :--- | :--- |
| SUBJECT AREA: | Math |
| NC STANDARD COURSE | 6.NS.1 <br> OF STUDY OBJECTIVE <br> Interpret and compute quotients of fractions, and solve word problems involving <br> division of fractions by fractions, e.g., by using visual fraction models and equations <br> to represent the problem. <br> 7.NS.1 <br> Apply and extend previous understandings of addition and subtraction to add and <br> subtract rational numbers; represent addition and subtraction on a horizontal or <br> vertical number line diagram. |
| 7.NS.2 |  |

## NAME OFACTIVITY: Over and Under

| GRADE LEVEL: | 7th |
| :--- | :--- |
| SUBJECT AREA: | Math |
| NC STANDARD COURSE <br> OF STUDY OBJECTIVE <br> NUMBER: | 7.NS.1 <br> Apply and extend previous understandings of addition and subtraction to add and <br> subtract rational numbers; represent addition and subtraction on a horizontal or <br> vertical number line diagram. <br> 7.NS.2 <br> Apply and extend previous understandings of multiplication and division and of <br> fractions to multiply and divide rational numbers. <br> 7.NS.3 <br> Solve real-world and mathematical problems involving the four operations with <br> rational numbers. |
| FORMATION: | Lines of 5 |
| EQUIPMENT: | 10 paper balls per team, math problems or word problems from textbook |
| RULES/DIRECTIONS: | 1. Teams stand in single file line. Each team has 10 paper balls at the back of its line. <br> 2. Teacher calls out word problem or a math problem (or write it on overhead) using, <br> addition, subtraction, multiplication, or division. <br> Example: (50 $\div 10)+(2 \times 2)=9$ |
| 3. Students figure out the answer to the problem. |  |
| 4. Students pass the balls up the row in an overhead and under the legs style until the |  |
| correct number of balls are at the front of the line. Pass only one ball at a time. |  |

1. Students may pass balls side to side instead of over or under.

## NAME OFACTIVITY: Show me the Mean, Median, and Mode

| GRADE LEVEL: | 6th |
| :--- | :--- |
| SUBJECT AREA: | Math |
| NC STANDARD COURSE | 6.SP.4 <br> OF STUDY OBJECTIVE <br> NUMBER:Display numerical data in plots on a number line, including dot plots, histograms, <br> and box plots. <br> 6.SP.5 <br> Summarize numerical data sets in relation to their context, such as by: a) Reporting <br> the number of observations. b) Describing the nature of the attribute under <br> investigation, including how it was measured and its units of measurement. c) Giving <br> quantitative measures of center (median and/or mean) and variability (interquartile <br> range and/or mean absolute deviation), as well as describing any overall pattern and <br> any striking deviations from the overall pattern with reference to the context in which <br> the data were gathered. d) Relating the choice of measures of center and variability to <br> the shape of the data distribution and the context in which the data were gathered. |


| FORMATION: | Standing at desk with partner |
| :--- | :--- |
| EQUIPMENT: | Paper for calculations, ruler, calculator, and pencils |

RULES/DIRECTIONS: 1. Teacher designs problems that require students to calculate mean, median, mode, or range.
2. One student will complete the problem (while standing at desk).
3. The other student will continue movement selected until partner is finished with computation. Possible movements include:

- Jog in place
- Shoot imaginary baskets
- Kick a soccer ball
- Move right elbow to left knee, then left elbow to right knee (standing sit-ups)
- Dancing
- Play air guitar
- Knee lifts
- March in place

4. Students switch roles after each problem

VARIATIONS:

1. Problems can include students interpreting box plots, histograms, and frequency distributions.
2. One partner will shoot paper baskets for one minute while the other student counts how many are made. Teacher can then place data on the board and use student data to find mean, median, and mode.
3. Choose a different movement for every other problem.
4. Have problems on the board prior to students entering the classroom.
5. Great calculator activity.
6. Keep the data samples small so that students do not spent too much time on calculations.

## NAME OFACTIVITY: $\quad$ Sign Me Up

| GRADE LEVEL: | 7th |
| :---: | :---: |
| SUBJECT AREA: | Math |
| NC STANDARD COURSE | 7.NS. 1 |
| OF STUDY OBJECTIVE NUMBER: | Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. a) Describe situations in which opposite quantities combine to make zero. For example, a hydrogen atom has zero charge because its two constituents are oppositely charged. b) Understand $p+q$ as the number located a distance $\|q\|$ from $p$, in the positive or negative direction depending on whether $q$ is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. c) Understand subtraction of rational numbers as adding the additive inverse, $p-q=p+(-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. d) Apply properties of operations as strategies to add and subtract rational numbers. <br> 7.NS. 2 <br> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1)=1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. b . Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with nonzero divisor) is a rational number. If $p$ and $q$ are integers, then $-(p / q)=(-p) / q=p /(-q)$. Interpret quotients of rational numbers by describing real world contexts. c. Apply properties of operations as strategies to multiply and divide rational numbers. |


| FORMATION: | Students stand at desks. |
| :--- | :--- |
| EQUIPMENT: | None |
| RULES/DIRECTIONS: | 1. Teacher tells students to hop, march, or jog in place to indicate the sign of the <br> answer to integer computation. <br> - Hop up and down if the answer is positive <br> - March in place if the answer is negative <br> - Jog in place for 10 seconds if the answer is zero |
|  | 2. Teacher calls out integer expressions such as, negative six times positive three. <br> 3. Students hop, march, or jog in place for 10-15 seconds. |
|  |  |

VARIATIONS:

1. Have students perform the same activity using absolute value
2. Use this activity to reinforce integer computation

## NAME OFACTIVITY: Size It Up

| GRADE LEVEL: | 6th - 7th |
| :--- | :--- |
| SUBJECT AREA: | Math |
| NC STANDARD COURSE | 6.G.1 <br> OF STUDY OBJECTIVE <br> FUMBER: <br> by composing into rectangles or decomposing into triangles and other shapes; apply <br> these techniques in the context of solving real-world and mathematical problems. <br> 7.G.4 <br> Know the formulas for the area and circumference of a circle and use them to solve <br> problems; give an informal derivation of the relationship between the circumference <br> and area of a circle. |
| FORMATION: | Standing at desks |
| EQUIPMENT: | Piece of paper and pencil for every student |
| RULES/DIRECTIONS: | 1. Teacher calls out physical activity: <br> - Jumping jacks |
| • Jogging |  |

## NAME OFACTIVITY: Stop and Solve

| GRADE LEVEL: | 7th - 8th |
| :---: | :---: |
| SUBJECT AREA: | Math |
| NC STANDARD COURSE | 7.EE. 4 |
| OF STUDY OBJECTIVE NUMBER: | Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. <br> 8.F. 4 <br> Construct a function to model a linear relationship between two quantities. <br> Determine the rate of change and initial value of the function from a description of a relationship or from two ( $x, y$ ) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. |
| FORMATION: | Standing at desks with partners |
| EQUIPMENT: | Piece of paper and pencil for every two students |
| RULES/DIRECTIONS: | 1. Teacher calls out physical activity: <br> - Twisting <br> - Jogging <br> - Jumping Jacks <br> - Knee lifts <br> - Playing air guitar <br> 2. Students begin activity and continue until the teacher writes an equation on the board and calls it out. <br> 3. Students freeze and partners work together to try to solve the equation correctly on a piece of paper. <br> 4. After 10 to 15 seconds, teacher calls out a new activity. <br> 5. Continue until all equations are used. <br> 6. As students cool down, teacher writes correct answers on the board and students check their work. |
| VARIATIONS: | 1. Same physical activity, but students translate verbal expressions into algebraic expressions. <br> 2. Use this activity to reinforce solving one-and-two step linear equations. |


| NAME OFACTIVITY: | Alphabet Soup |
| :--- | :--- |
| GRADE LEVEL: | 6th - 8th |
| SUBJECT AREA: | Miscellaneous |
| NC STANDARD COURSE <br> OF STUDY OBJECTIVE <br> NUMBER: | Teams of 4 |
| FORMATION: | Alphabet blocks or scrabble tiles (2 sets) divided into 4 stations around the room, <br> additional sets may be needed for vowels |
| EQUIPMENT: | 1. The object is for students to correctly spell the vocabulary word. <br> 2. Teacher calls out a vocabulary word related to subject area. <br> 3. One student from each team will go get one letter from a station and return to the <br> group. All students remain moving (see Movement Bank) for the entire activity. |
| RULES/DIRECTIONS: Students take turns getting letters until a team has spelled the word correctly. |  |
| 5. The first team to spell the word correctly will earn a point. |  |
| 6. Continue until all words have been spelled. |  |

## NAME OFACTIVITY: Crazy Questions

| GRADE LEVEL: | 6 th -8 th |
| :--- | :--- |
| SUBJECT AREA: | Miscellaneous |

NC STANDARD COURSE
OF STUDY OBJECTIVE NUMBER:

| FORMATION: | Four teams |
| :--- | :--- |
| EQUIPMENT: | None |

## RULES/DIRECTIONS:

1. Students group together into 4 teams (easiest way may be to have them group together by rows).
2. The teacher selects a list of vocabulary words or a set of questions from the end of a chapter.
3. The students must complete a series of movements to receive each question.
4. When each student in a group has completed the assigned movement they must sit down and raise their hands to receive each question.
5. The teacher will then approach the group to give them the next question.
a. To receive the first question, each student in the group must jump to the sky and slap the floor with their hand. Repeat 5 times.
b. To receive the second question, the students must hop on one foot while turning in a circle 10 times.
c. To receive the third question, students must run in place for 30 seconds.
d. To receive the fourth question, students must do imaginary jump rope as fast as possible for 10 seconds.
e. To receive the fifth question, students must complete all previous movements.

VARIATIONS:

1. This activity can be used for sequencing, listening skills, auditory procession, and multiple intelligences.

## NAME OFACTIVITY: Everybody is a Star

| GRADE LEVEL: | 6th -8 th |
| :--- | :--- |
| SUBJECT AREA: | Miscellaneous |

NC STANDARD COURSE
OF STUDY OBJECTIVE NUMBER:

| FORMATION: | Walking around the classroom |
| :---: | :---: |
| EQUIPMENT: | Pen and paper for the Journalist group |
| RULES/DIRECTIONS: | 1. Each student writes $3-5$ questions a journalist would ask a Celebrity/ Super Star and identifies one Super Star. <br> 2. The class is divided into two groups: Journalists and Super Stars. <br> 3. The journalists have 5 minutes to interview as many Super Stars as they possibly can, asking only the three questions they wrote down. <br> 4. The Super Stars can never directly say their name or exactly what it is that they do. The Super Star group must constantly be walking because celebrities are very busy. <br> 5. The journalists try to guess who the Super Stars are based on the answers to their question. <br> 6. After 5 minutes has lapsed the Super Stars reveal who they are and the journalists check to see if their guesses were correct. <br> 7. Switch roles. |
| VARIATIONS: | 1. Journalists write an article about Super Stars. Super Stars write a reflective entry about their interviews. Incorporate writing techniques like persuasive writing and inferences. Share writing with the entire class. |

## NAME OFACTIVITY: Have a ball

| GRADE LEVEL: | 6 th -8 th |
| :--- | :--- |
| SUBJECT AREA: | Miscellaneous |

NC STANDARD COURSE
OF STUDY OBJECTIVE NUMBER:

| FORMATION: | Students sitting at desks |
| :--- | :--- |
| EQUIPMENT: | Each student should have a scrap piece of paper and make a ball |
| RULES/DIRECTIONS: | 1. Each student should wad up a piece of paper to make a ball. Use the piece <br> of paper for the following exercises: <br> - |
|  | up and catch the ball with the top of the feet (like hackey sack). |
| - Set the ball on elbow. Flip the ball into the air and catch it with the |  |
|  |  |
| - hand on the same side. |  |

VARIATIONS:

1. Allow each student to shoot the ball into the trashcan at the end.

## NAME OFACTIVITY: Hot Tamale

| GRADE LEVEL: | 6 th -8 th |
| :--- | :--- |
| SUBJECT AREA: | Miscellaneous |

NC STANDARD COURSE
OF STUDY OBJECTIVE NUMBER:

| FORMATION: | Beside desks |
| :--- | :--- |
| EQUIPMENT: | None |

## RULES/DIRECTIONS:

1. Write each direction and corresponding activity on the board or overhead to make it easier for the students to follow.

- Move backwards - back stroke (swimming motion)
- Move forward - march in place
- Move to either side - side stretch in the direction of the hot tamale
- Up higher - climbing ladder motion
- Down lower - squats
- Within one foot of the tamale - students pretend they are stepping on hot coals (in place).

2. One student exits the classroom.
3. The rest of the class watches the teacher hide the "hot tamale" (can be any object) somewhere in the classroom.
4. The student who exited the classroom re-enters.
5. The rest of the class tries to guide him/her to the hidden tamale by performing various physical activities, with each activity corresponding to a different direction. Students are not allowed to talk.
6. Once the student locates the hidden "hot tamale", another student is selected to exit the classroom and the "hot tamale" is hidden in another location so that the game can be repeated.

## NAME OFACTIVITY: I'm A Student and You're a Student Too!

| GRADE LEVEL: | 6th -8 th |
| :--- | :--- |
| SUBJECT AREA: | Miscellaneous |

NC STANDARD COURSE
OF STUDY OBJECTIVE NUMBER:

| FORMATION: | Standing at desks or in a circle |
| :--- | :--- |
| EQUIPMENT: | None (teacher may decide to use a small ball or bean bag) |

RULES/DIRECTIONS: 1. Students stand in a circle or at desks and march in place.
2. Teacher selects a student to begin the game by either pointing to or tossing a small ball to the student.
3. The student begins with the line "I'm a student and you're a student too if...."
4. The student fills in the end of this statement with something characteristic of them that other students may have in common. Example: "I'm a student and you're a student too if you have on tennis shoes" or "I'm a student and you're a student too if you like to play basketball."
5. All students who share this trait perform an activity such as jumping into the air 3 times or walk to the front of the classroom and switch places with another student that shares the specified characteristic, while all other students continue to march in place.
6. The teacher then selects another student to continue the game.

VARIATIONS:

1. Instead of using the word student in the working phrase, insert the name of the school's mascot. e.g.," I'm a Pirate and you're a Pirate too if..."

## NAME OFACTIVITY: Sports on the Move

| GRADE LEVEL: | 6th- 8th |
| :--- | :--- |
| SUBJECT AREA: | Miscellaneous |
| NC STANDARD COURSE <br> OF STUDY OBJECTIVE <br> NUMBER: |  |
| FORMATION: |  |
| EQUIPMENT: | Standing at desk |$\quad$| None |
| :--- |

VARIATIONS:

1. Ask students to name the sport and movement.
2. Tell students that mental practice and making correct fundamental movements without the equipment can improve performance.

## NAME OFACTIVITY: What's My Job?

| GRADE LEVEL: | 6 th -8 th |
| :--- | :--- |
| SUBJECT AREA: | Miscellaneous |

NC STANDARD COURSE
OF STUDY OBJECTIVE NUMBER:

| FORMATION: | Partners standing at desk |
| :--- | :--- |
| EQUIPMENT: | Pencil and paper | RULES/DIRECTIONS: | 1. Students group into pairs at their desks. |
| :--- |
| 2. Partners face each other (one facing the board and the other facing the back of |
| the room). |
| 3. The teacher writes a series of professions on the board which could include: |
| - Teacher |
| - Basketball Player |
| - Hockey Player |
| - Airplane Pilot |

1. Create a different list of professions for each group.

## NAME OFACTIVITY: World's Strongest Student

| GRADE LEVEL: | 6 th -8 th |
| :--- | :--- |
| SUBJECT AREA: | Miscellaneous |

NC STANDARD COURSE
OF STUDY OBJECTIVE NUMBER:

| FORMATION: | Standing at desks |
| :--- | :--- |
| EQUIPMENT: | None |

RULES/DIRECTIONS:

1. Have students imitate activities that competitors in the "World's Strongest Man" competition undertake. Perform each activity for 30 seconds.

- Chain Drag (walking backwards and pulling)
- Car Lift
- Train Push (walking forward and pushing)
- Anchor Carry (walking forward and pulling)
- Pole Flip (pretend to toss a small tree trunk as far as you can)
- Iron Cross (hold arms out to sides holding great weights)
- Stone Wall (picking up heavy stones from the ground and stacking them on top of a wall)
- Dead Lift (competitors squat and lift a barrel of rocks with increasing weight.)

2. Repeat the entire sequence.

VARIATIONS:

1. Teacher may need to explain the activities to the students before the activity starts.
