M4TH 'N' MOVEMENT

Level 5

GRADE 4

Common Core Standards Edition
www.mathnmovement.com

Rachel McCann

Move the desks to the side of the room it's time for math!

This edition of Math 'N' Movement is designed specifically for North American Schools and combines the Common Core State Standards for Mathematics with the Physical Education Standards. With programs available from Kindergarten to Year 6 it provides a fun way to effectively engage students in math learning.

Math 'N' Movement increases both on task student behaviour and fitness by combining Math with the key Physical Education topics of movement, co-operation, game play, safety and acceptance of consequences for one's actions.

Designed to get more students, more active, more often, Math 'N' Movement is a dual strand teaching strategy that leap-frogs time constraints by teaching twice as much in half the time. Best of all, your students won't realise they are working hard because they are having so much fun!

For further information on the best way to use this program and additional teaching resources visit www.mathnmovement.com.

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MATH 'N' MOVEMENT

LEVEL 5

Grade 4

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Common Core Standards Edition

LEVEL 5

4.OA.1

OPERATIONS & ALGEBRA 1

In this Math 'N' Movement activity students will interpret a multiplication equation as a comparison and understand that a x b is equal to b x a.

ACTIVITY

1. In teams of 4, students line up with their personal Operations & Algebra 1 Recording Sheet, 5 metres from the 2 decahedron (10 sided) dice.

2. The first student in each team races, using the given movement, to their Operations & Algebra 1 Recording Sheet, rolls the 2 dice and records the numbers in both equations.

3. When student's answers have been checked they race back to their team and remaining students take it in turn to race to roll the dice and record numbers until each student has created 4 equations.

Equipment Required:

- An Operations & Algebra 1 Recording Sheet and pencil per student.
- 2 decahedron (10 sided dice) per team.

Notes:

Students who struggle with multiplication facts may require a multiplication table to assist them in finding the correct answer to their equation although by this stage most multiplication facts up to 10 x 10 should be known.

Each student has their own Recording Sheet so they can complete 4 comparison equations.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

OPERATIONS & ALGEBRA 1 RECORDING SHEET

Round 1

Dice 1	x	Dice 2	=	Answer
	x		=	
Dice 2	x	Dice 1	=	Answer
	x		=	

Round 2

Dice 1	x	Dice 2	=	Answer
	x		=	
Dice 2	x	Dice 1	=	Answer
	x		=	

Round 3

Dice 1	x	Dice 2	=	Answer
	x		=	
Dice 2	x	Dice 1	=	Answer
	x		=	

Round 4

Dice 1	x	Dice 2	=	Answer
	x		=	
Dice 2	x	Dice 1	=	Answer
	x		=	

LEVEL 5

4.OA.2

OPERATIONS & ALGEBRA 2

In this Math 'N' Movement activity students will multiply and divide to solve problems involving multiplicative comparisons.

ACTIVITY

1. In teams of 4, students sit 5 metres from their pile of Operations & Algebra 2 Cards.

2. Teams are given a multiplication equation (ie. 3 x 5) and the first student in each team races, using the given movement, to create this and its answer with their Operations & Algebra 2 Cards and record it on their Operation & Algebra 2 Recording Sheet.

3. The second student in the team then races, using the given movement, to create a multiplicative comparison equation and record it (ie. 5 x 3 = 15).

4. The 2 remaining students create and record associated division equations (ie. 15 ÷ 3 = 5 and 15 ÷ 5 = 3). The order in which the equations are created does not matter but all 4 equations must be completed by each team.

Equipment Required:

- A set of Operations & Algebra 2 Cards per team.
- An Operations & Algebra 2 Recording Sheet and pencil per team.

Notes:

The numbers from 1 to 10 have been provided for this activity but as students abilities increase these could be increased to include any double digit numbers x single digit numbers. There are 4 rounds on the Recording Sheet so each student can have a turn at being 1st, 2nd, 3rd and 4th thus giving them a chance at both multiplication and division and creating and adjusting the equation.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

OPERATIONS & ALGEBRA 2 RECORDING SHEET

Round 1	Equations					
Student _____		×		=		
Student _____		×		=		
Student _____		÷		=		
Student _____		÷		=		

Round 2	Equations					
Student _____		×		=		
Student _____		×		=		
Student _____		÷		=		
Student _____		÷		=		

Round 3	Equations					
Student _____		×		=		
Student _____		×		=		
Student _____		÷		=		
Student _____		÷		=		

Round 4	Equations					
Student _____		×		=		
Student _____		×		=		
Student _____		÷		=		
Student _____		÷		=		

0	7
1	8
2	9
3	10
4	×
5	÷
6	=

LEVEL 5

4.OA.4

OPERATIONS & ALGEBRA 4

In this Math 'N' Movement activity students will recognize that a whole number is a multiple of each of its factors and determine the factors of 120.

ACTIVITY

1. In teams of 4 or 5, students sit with their 120 counters and their hula hoop.

2. The first student in each team races, using the given movement, to collect an Operations & Algebra 4 Number Card.

3. Teams work together to see if the 120 counters can be split evenly into the number of groups shown on their Number Card to determine if that number is one of the factors of 120.

4. When the results have been recorded on the team's Operations & Algebra 4 Recording Sheet the next student in each team races to collect a different number card. This continues until all Number Cards have been collected and checked.

Equipment Required:

- 120 counters per team.
- A hula hoop per team.
- An Operations & Algebra 4 Recording Sheet and pencil per team.
- A set of Operations & Algebra 4 Number Cards per team.

Notes:

120 counters has been used for this activity as it the smallest number divisible by 2, 3, 4, 5, 6, 8 and 10. If you prefer, 60 counters could be used but this is not divisible by 8.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

OPERATIONS & ALGEBRA 4 NUMBER CARDS

1	7
2	8
3	9
4	10
5	11
6	12

Answers: For you - Not to be given to students.

$\frac{1}{2} = 60$ $\frac{1}{3} = 40$ $\frac{1}{4} = 30$ $\frac{1}{5} = 24$ $\frac{1}{6} = 20$ $\frac{1}{8} = 15$ $\frac{1}{10} = 12$ $\frac{1}{12} = 10$

OPERATIONS & ALGEBRA 4 RECORDING SHEET

Students in Team: _____, _____, _____, _____.

Number Card	Counters In Each Group	Is It A Factor of 120?
1		Is 1 a factor of 120 - Yes / No
2		Is 2 a factor of 120 - Yes / No
3		Is 3 a factor of 120 - Yes / No
4		Is 4 a factor of 120 - Yes / No
5		Is 5 a factor of 120 - Yes / No
6		Is 6 a factor of 120 - Yes / No
7		Is 7 a factor of 120 - Yes / No
8		Is 8 a factor of 120 - Yes / No
9		Is 9 a factor of 120 - Yes / No
10		Is 10 a factor of 120 - Yes / No
11		Is 11 a factor of 120 - Yes / No
12		Is 12 a factor of 120 - Yes / No

LEVEL 5

4.OA.5

OPERATIONS & ALGEBRA 5

In this Math 'N' Movement activity students will generate a number or shape pattern which follows a given rule.

ACTIVITY

1. In teams of 4, students sit at least 5 metres from their bowl of connecting blocks.

2. Each team is shown the first 4 blocks of a pattern and take it in turns to race, using the given movement, to their bowl of blocks to get the next block required to repeat the pattern twice.

3. When all blocks have been collected the 1st student in the team records the pattern on their team's Operations & Algebra 5 Recording Sheet.

4. Once recorded, the blocks are returned to each team's bowl and teams are shown a new pattern.

5. Students race again to gather blocks and the 2nd student records the pattern. This continues until every student has recorded 2 patterns.

Equipment Required:

- A collection of connecting blocks per team.
- A Patterns Recording Sheet and set of coloured pencils per team.

Notes:

Although it is suggested that students repeat the pattern twice they can repeat the pattern as many times as you choose. The number of colours in the pattern is also open to variation and is restricted only by the blocks you have available.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

OPERATIONS & ALGEBRA 5 RECORDING SHEET

Round 1	Colour the blocks to show the repeating pattern.
Student 1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Student 2	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Student 3	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Student 4	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Round 2	Colour the blocks to show the repeating pattern.
Student 1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Student 2	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Student 3	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Student 4	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

LEVEL 5

4.NBT.2

NUMBER & BASE 10 - 2

In this Math 'N' Movement activity students will compare 2 multi-digit numbers based on place value.

ACTIVITY

1. Students are shown the Number & Base 10 - 2 Symbols '=', '>' and '<' which are placed on the ground in hula hoops at least 7 metres from each other.

2. When 2 x 4 digits numbers are called students race, using the given movement, to the symbol which best matches the relationship between the 2 numbers.

Equipment Required:

- The 3 Number & Base 10 - 2 Symbols.
- 3 hula hoops in which to place the symbol cards.

Notes:

The symbols have 'greater than' and 'less than' written on them so they can not be confused. When students reach the correct side a student could be chosen to verbalize the answer with the correct symbol in the middle ie. 2431 is less than 4567, 8654 is equal to 8654 or 145 is greater than 129. Any size numbers can be used for this activity and they could be written and held rather than read out so students practice reading 6 and 7 digit numbers.

Mathematical Practices Covered:

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

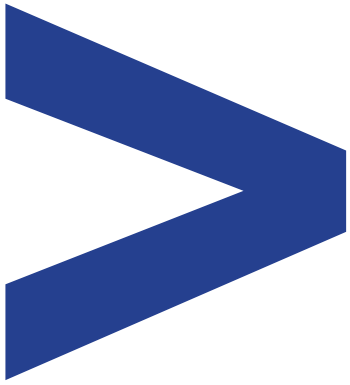
PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

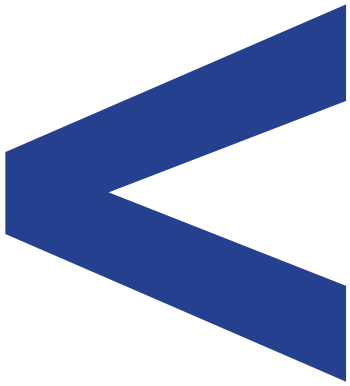
PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

NUMBER & BASE 10 - 2 SYMBOL CARDS



Greater Than



Less Than

LEVEL 5

4.NBT.3

NUMBER & BASE 10 - 3

In this Math 'N' Movement activity students will use place value understanding to round multi-digit whole numbers to any value.

ACTIVITY

1. In teams of 4, students line up with their Number & Base 10 - 3 Recording Sheet at least 5 metres from their Number Cards.

2. Students take it in turns to race, using the given movement, to collect 1 number from the pile of Number & Base 10 - 3 Number Cards and record it.

3. Teams are told to which place value (ones, tens, hundreds or thousands) the number they created must be rounded. Team's work together to round the number correctly.

4. The first student in each team returns the cards and has their team's Recording Sheet checked.

5. Students swap positions and race again to collect cards, make numbers, round the numbers, return their cards and have their answers checked.

Equipment Required:

- A set of Number & Base 10 - 3 Number Cards per team.
- A Number & Base 10 - 3 Recording Sheet and pencil per team.

Notes:

If you want students to round to tens of thousands and hundreds of thousands students could collect additional cards or there could be more students in each team.

There are 4 rounds on the Recording Sheet so each student can have a chance at returning the numbers and having their answers checked.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

NUMBER & BASE 10 - 3 RECORDING SHEET

	1st Number	2nd Number	3rd Number	4th Number	Rounded To	Answer
Round 1					1s 10s 100s 1000s	
					1s 10s 100s 1000s	
					1s 10s 100s 1000s	
					1s 10s 100s 1000s	

	1st Number	2nd Number	3rd Number	4th Number	Rounded To	Answer
Round 2					1s 10s 100s 1000s	
					1s 10s 100s 1000s	
					1s 10s 100s 1000s	
					1s 10s 100s 1000s	

	1st Number	2nd Number	3rd Number	4th Number	Rounded To	Answer
Round 3					1s 10s 100s 1000s	
					1s 10s 100s 1000s	
					1s 10s 100s 1000s	
					1s 10s 100s 1000s	

	1st Number	2nd Number	3rd Number	4th Number	Rounded To	Answer
Round 4					1s 10s 100s 1000s	
					1s 10s 100s 1000s	
					1s 10s 100s 1000s	
					1s 10s 100s 1000s	

NUMBER & BASE 10 - 3 NUMBER CARDS

0	5
1	6
2	7
3	8
4	9

LEVEL 5

4.NBT.4

NUMBER & BASE 10 - 4

In this Math 'N' Movement activity students will fluently add and subtract multi-digit whole numbers to any place.

ACTIVITY

1. In teams of 4, students are shown 3 hula hoops on the ground (1 metre apart and the first hoop 1 metre from the basketball ring). Students estimate and measure the hoops to find their exact position.

2. The first member of each team selects which hoop they will stand in to try to throw their basketball into the ring.

3. Students record their score on their Number & Base 10 - 4 Recording Sheet with 150 point for a successful shot from the nearest hula hoop, 250 points if shot from the middle hula hoop and 330 points if from the furthest hula hoop. (The greater the risk the higher the score).

4. Students take it in turns to throw the ball and add up their score over 6 throws.

Equipment Required:

- Three hula hoops per team.
- A tape measure per team.
- A basketball and basketball hoop per team.
- A Number & Base 10 - 4 Recording Sheet and pencil per team.

Notes:

If you do not have enough basketball hoops, a bucket on the ground and a tennis ball can be used for this activity. Multiple buckets would also reduce student's waiting time as one could be set up as the 150 point bucket with a line 1 metre away, the 2nd as the 250 point bucket with a line 2 metres away and the 3rd as the 350 point bucket with a line 3 metres away. Students choose which bucket they will line up for rather than all waiting to shoot into 1 bucket.

Mathematical Practices Covered:

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

Physical Education Standards Covered:

PE 1.7 - Throws a ball at a target using proper follow-through.

PE 2.5 - Explains the similar movement elements of an underhand throw and volleyball

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

NUMBER & BASE 10 - 4 RECORDING SHEET

	Estimated distance from the 1st hoop to the ring	Estimated distance from the 2nd hoop to the ring	Estimated distance from the 3rd hoop to the ring
Player 1			
Player 2			
Player 3			
Player 4			

Actual distance from the 1st hoop to the ring: _____
Actual distance from the 2nd hoop to the ring: _____
Actual distance from the 3rd hoop to the ring: _____

Player 1					
Shot	Score	Shot	Score	Shot	Score
Shot 1		Shot 3		Shot 5	
Shot 2		Shot 4		Shot 6	

Player 2					
Shot	Score	Shot	Score	Shot	Score
Shot 1		Shot 3		Shot 5	
Shot 2		Shot 4		Shot 6	

Player 3					
Shot	Score	Shot	Score	Shot	Score
Shot 1		Shot 3		Shot 5	
Shot 2		Shot 4		Shot 6	

Player 4					
Shot	Score	Shot	Score	Shot	Score
Shot 1		Shot 3		Shot 5	
Shot 2		Shot 4		Shot 6	

LEVEL 5

4.NBT.5

NUMBER & BASE 10 - 5

In this Math 'N' Movement activity students will multiply a whole number of up to 4 digits by a 1 digit number.

ACTIVITY

1. Students line up shoulder to shoulder facing a marked line at least 5 metres away.

2. When students hear the whistle they run to the other line, touch it and run back to their original position as many times as they can before they hear the whistle again 20 seconds later.

3. Students use their Number & Base 10 - 5 Recording Sheet to multiply the number of runs they completed by the number given.

4. Students repeat this activity up to 3 times in a session and complete sessions each day for a week to demonstrate improved performance over time.

Equipment Required:

- A Number & Base 10 - 5 Recording Sheet and pencil per pair.
- Markers to show the start and finish line 5 metres away.

Notes:

Although it is suggested that students run for this activity they could count the number of jumps it takes to cross the area, how many times they can jump rope in 20 seconds or any other physical activity within a set time could be used to create the single digit required.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.8- Measures and records changes in aerobic capacity and muscular strength.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

NUMBER & BASE 10 - 5 RECORDING SHEET

Day 1 - 3 Sessions		
Given Number 9405	Given Number 8731	Given Number 7462
Number of Runs _____ x	Number of Runs _____ x	Number of Runs _____ x
Equals _____	Equals _____	Equals _____

Day 2 - 3 Sessions		
Given Number 1984	Given Number 5264	Given Number 7205
Number of Runs _____ x	Number of Runs _____ x	Number of Runs _____ x
Equals _____	Equals _____	Equals _____

Day 3 - 3 Sessions		
Given Number 1629	Given Number 2748	Given Number 1027
Number of Runs _____ x	Number of Runs _____ x	Number of Runs _____ x
Equals _____	Equals _____	Equals _____

Day 4 - 3 Sessions		
Given Number 8526	Given Number 1902	Given Number 6425
Number of Runs _____ x	Number of Runs _____ x	Number of Runs _____ x
Equals _____	Equals _____	Equals _____

Day 5 - 3 Sessions		
Given Number 3724	Given Number 7952	Given Number 2638
Number of Runs _____ x	Number of Runs _____ x	Number of Runs _____ x
Equals _____	Equals _____	Equals _____

LEVEL 5

4.NF.1

NUMBER & FRACTIONS 1

In this Math 'N' Movement activity students will identify equivalent fractions.

ACTIVITY

1. Students are shown the Number & Fraction 1 Cards 1/2, 1/3, 1/4, 1/5 and 1/10 which are placed on the ground in hula hoops at least 7 metres from each other.

2. When shown a Number & Fractions 1 Equivalent Fraction Card students race, using the given movement, to the card which corresponds to the lowest common fraction or equivalent fraction to the fraction shown. So if 4/16 is shown students would race to 1/4 and if 20/100 was shown students would race to 1/5.

Equipment Required:

- The Number & Fractions 1 Cards 1/2, 1/3, 1/4, 1/5 and 1/10.
- 5 hula hoops for the cards.
- The Number & Fractions 1 Fractions Cards.

Notes:

As students become competent at finding equivalent fractions they could be chosen to call out or write a fraction for other students to find the equivalent thus providing an infinite number of fractions for this activity.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

1/2	1/3	1/4	1/5	1/10
3/6	3/9	3/12	3/15	3/30
4/8	4/12	4/16	4/20	4/40
5/10	5/15	5/20	5/25	5/50
6/12	6/18	6/24	6/30	6/60
10/20	10/30	10/40	10/50	10/100

LEVEL 5

4.NF.3

NUMBER & FRACTIONS 3

In this Math 'N' Movement activity students will solve real world problems with addition and multiplication of fractions with the same denominator.

ACTIVITY

1. When students hear the whistle they count how many vertical jumps they can complete before the whistle is heard again 15 seconds later.

2. Students record their results on their pairs Number and Fractions 3 Recording Sheet and then double their results to find their expected number of jumps in 30 seconds.

3. Students listen for the whistles to count how many vertical jumps they can complete in 30 seconds.

4. Students double their 30 seconds results and quadruple their original 15 second results to find their expected number of jumps in 60 seconds.

5. Students vertical jump for 1 minute to see if they did jump ¼ the number of jumps in ¼ the time and ½ the number of jumps in ½ the time.

Equipment Required:

- A stop watch.
- A whistle.
- A Number & Fractions 3 Recording Sheet and pencil per pair.

Notes:

Although vertical jumps are suggested any Fundamental Movement Skill could be used such as hops, leaps or sprint runs over a set distance.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.3 - Constructs viable arguments and critiques the reasoning of others.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.7 - Sustains continuous movement for increasing periods of time.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

NUMBER & FRACTIONS 3 RECORDING SHEET

Student 1: _____

Jumps in 15 Seconds.	
Expected Jumps in 30 Seconds (Based on the number of jumps completed in 15 seconds - 15 seconds x 2).	
Actual Jumps in 30 Seconds.	
Expected Jumps in 1 Minute (Based on the number of jumps completed in 15 seconds - 15 seconds x 4).	
Expected Jumps in 1 Minute (Based on the number of jumps completed in 30 seconds - 30 seconds x 2).	
Actual Jumps in 1 minute.	

Student 2: _____

Jumps in 15 Seconds.	
Expected Jumps in 30 Seconds (Based on the number of jumps completed in 15 seconds - 15 seconds x 2).	
Actual Jumps in 30 Seconds.	
Expected Jumps in 1 Minute (Based on the number of jumps completed in 15 seconds - 15 seconds x 4).	
Expected Jumps in 1 Minute (Based on the number of jumps completed in 30 seconds - 30 seconds x 2).	
Actual Jumps in 1 minute.	

LEVEL 5

4.NF.4

NUMBER & FRACTIONS 4

In this Math 'N' Movement activity students will apply and extend their previous understanding of multiplication to multiply a fraction by a whole number.

ACTIVITY

1. In team of 4, students line up 5 metres from one of the sets of Number & Fractions 4 Fraction Cards.

2. Student take it in turns to race, using the given movement, to collect a Fraction Card from their pile.

3. When every student in the team has a fraction card the team uses their Number & Fraction 4 Recording Sheet to record the total fraction or mixed fraction they have created. So if 4 x 1/3 cards were collect 1 1/3 would be made, if 4 x 1/5 were collected 4/5 would be made.

4. When each team has recorded their combined fraction all cards are returned and teams rotate to the next pile of Fraction Cards to complete this activity for a new fraction.

Equipment Required:

- A set of Number & Fraction 4 Cards in piles.
- A Number & Fractions 4 Recording Sheet and pencil per team.

Notes:

Teams can keep rotating until all fractions have been completed or until each group has completed only 4 or 5. If all fractions are not completed in the one session teams can revisit this activity at a later stage for revision. Likewise, if the activity was repeated with a different number of students in each group students would be completing a new set of fraction multiplication equations.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.3 - Constructs viable arguments and critiques the reasoning of others.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

NUMBER & FRACTIONS 4 FRACTION CARDS

$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{10}$
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{10}$
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{10}$
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{10}$
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{10}$

NUMBER & FRACTIONS 4 RECORDING SHEET

	Fraction Being Collected	x	Number of Students in Group	=	Fraction Created
Round 1		x		=	
Round 2		x		=	
Round 3		x		=	
Round 4		x		=	
Round 5		x		=	

LEVEL 5

4.NF.6

NUMBER & FRACTIONS 6

In this Math 'N' Movement activity students will measure lengths using a tape measure and decimal notation.

ACTIVITY

1. In team of 4 or 5, students predict how far they think they can run in 5 seconds.

2. When the whistle sounds the first student in each team sprint runs as far as they can before the whistle sounds again after 5 seconds.

3. Each team uses their device of choice to measure their first team member's distance in centimetres and metres and records the distance on their Number & Fractions 6 Recording Sheet.

4. When all students have run and recorded their results students find the difference between their estimated and actual distances.

Equipment Required:

- A stop watch and whistle.
- A 30cm ruler, metre ruler, 8 metre tape measure and trundle wheel per team.
- A Number & Fractions 6 Recording Sheet and pencil per team.

Notes:

For some students 5 seconds may be too long as they will run too far to be measured. If this is the case reduce the time to 2 or 3 seconds and continue as described.

Mathematical Practices Covered:

4.2 - Reasons abstractly and quantitatively.

4.3 - Constructs viable arguments and critiques the reasoning of others.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

NUMBER & FRACTIONS 6 RECORDING SHEET

Student	Predicted Distance in Metres	Actual Distance in Metres	Difference Between Predicted and Actual Distances
_____	_____. _____m	_____. _____m	_____. _____m
_____	_____. _____m	_____. _____m	_____. _____m
_____	_____. _____m	_____. _____m	_____. _____m
_____	_____. _____m	_____. _____m	_____. _____m
_____	_____. _____m	_____. _____m	_____. _____m

LEVEL 5

4.MD.1

MEASUREMENT & DATA 1

In this Math 'N' Movement activity students will compare weights to understand the mass of a selection of comparative items.

ACTIVITY

1. In teams of 5, students are given 5 food items such as a packet of crisps, a piece of fruit, a sandwich, a sweet biscuit and a carrot.

2. Students predict the weight of the 5 items in grams from heaviest to lightest and record it on their Measurement & Data 1 Recording Sheet.

3. Students race, using the given movement, to take 1 item at a time to the scales 5 metres away and weigh it.

4. Students return to their team and each member records the weight of the item.

5. Students check their ordering and the difference between their prediction and the actual weight of each item.

Equipment Required:

- A selection of 5 foods items per team.
- A set of scales per team.
- A Measurement & Data 1 Recording Sheet and pencil per student.

Notes:

This is a great activity to start a conversation on healthy lunches versus unhealthy lunches and that the higher the water, the lower the sugar, fat and salt content of foods the better they are for you and that the weight or an item has little bearing on its nutritional content.

Mathematical Practices Covered:

4.2 - Reasons abstractly and quantitatively.

4.3 - Constructs viable arguments and critiques the reasoning of others.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 4.4 Identifies healthy choices for meals and snacks.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

MEASUREMENT & DATA 1 RECORDING SHEET

	Item Being Weighed	Predicted Weight	Actual Weight	Difference Between Predicted and Actual Weights
Item 1				
Item 2				
Item 3				
Item 4				
Item 5				

LEVEL 5

4.MD.2

MEASUREMENT & DATA 2

In this Math 'N' Movement activity students will solve real world problems involving distance.

ACTIVITY

1. In teams of 4, students predict on their Measurement & Data 2 Recording Sheet how far they will be able to long jump into a long jump pit.

2. Students line up 5 metres from the long jump pit and each student runs and jumps into the pit. Student's jumps are measured based on the part of their body closest to the jump board. Students record the distance on their Measurement & Data 2 Recording Sheet and compare this to their prediction.

3. Each student's jumped length is deducted from 3 metres to find their final score.

4. The student with the lowest score after 4 rounds has jumped the furthest and is the long jump champion.

Equipment Required:

- A long jump pit.
- A tape measure.
- A Measurement and Data 2 Recording Sheet and pencil per team.

Notes:

This is a great activity to complete in the lead up to a school athletics carnival but if you do not have a long jump pit students can perform a standing jump and deduct their length from 2 metres rather than 3 metres.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

MEASUREMENT & DATA 2 RECORDING SHEET

Round 1	Predicted Jump Length	Actual Jump Length	3m – Jump Length
Student 1: _____			
Student 2: _____			
Student 3: _____			
Student 4: _____			

Round 2	Predicted Jump Length	Actual Jump Length	3m – Jump Length
Student 1: _____			
Student 2: _____			
Student 3: _____			
Student 4: _____			

Round 3	Predicted Jump Length	Actual Jump Length	3m – Jump Length
Student 1: _____			
Student 2: _____			
Student 3: _____			
Student 4: _____			

Round 4	Predicted Jump Length	Actual Jump Length	3m – Jump Length
Student 1: _____			
Student 2: _____			
Student 3: _____			
Student 4: _____			

LEVEL 5

4.MD.3

MEASUREMENT & DATA 3

In this Math 'N' Movement activity students will apply area and perimeter formulas to real world items.

ACTIVITY

1. In pairs, students predict on their Measurement & Data 3 Recording Sheet the area of pieces of classroom furniture and work items in cms^2.

2. Using a ruler, students work together to measure the perimeter of each item they chose and calculate its actual area.

3. Students use their predicted area and measured area to find the difference between their estimations and actual item's size.

Equipment Required:

- General classroom items ie. chair, table, textbook, ruler etc.
- A Measurement & Data 3 Recording Sheet and pencil per pair.

Notes:

Students may need a set of suggested items to measure such as a textbook, eraser, desk etc. The more spaced out the items the more students will be moving during this activity. There is enough space for each pair to predict and measure 10 items on their Measurement & Data 3 Recording Sheet. Each pair's estimations should become closer to the actual item's size as they progress through this task.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

MEASUREMENT & DATA 3 RECORDING SHEET

Item Being Measured	Estimated Area	Actual Length	Actual Width	Actual Area	Difference Between Estimated & Actual Area

LEVEL 5

4.MD.4

MEASUREMENT & DATA 4

In this Math 'N' Movement activity students will display a set of data of measurements in fractions of a unit - 1/2, 1/4 or 1/8.

ACTIVITY

1. In teams of 4 or 5, students take a piece or chalk and find a space on the wall in the allocated area.

2. The first student in each team stands next to the wall and performs a vertical jump using the chalk to mark as high as they can on the wall.

3. The remaining team members work together to measure the distance from the base of the wall to the top of the student's chalk mark on the wall and records it on the team's Measurement & Data 4 Recording Sheet.

4. Once measured, the mark is removed and the next student in the team has a turn.

5. Each student can have 3 attempts at reaching their maximum height on the wall.

Equipment Required:

- A 1 metre ruler per team with 1/8, 1/4 and 1/2 metre marked.
- A piece of chalk per team.
- A Measurement & Data 4 Recording Sheet and pencil per team.
- A wet cloth to remove chalk.

Notes:

It is important that students perform the vertical jump correctly and may require explicit instruction in this skill. It is also important to make sure students do not skin their knuckles when trying to mark the wall if it is made of brick.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.3 - Constructs viable arguments and critiques the reasoning of others.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

MEASUREMENT & DATA 4 RECORDING SHEET

Student	Attempt 1
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	

Student	Attempt 2
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	

Student	Attempt 3
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	

Student	Greatest Height Reached
1. _____	
2. _____	
3. _____	
4. _____	
5. _____	

LEVEL 5

4.MD.5

MEASUREMENT & DATA 5

In this Math 'N' Movement activity students will recognise angles as acute, obtuse or right angled.

ACTIVITY

1. In pairs, students choose (within a given area of the school) 5 angles which they think are acute, 5 angles which they think are obtuse and 5 angles which they think are right angles.

2. Using the angles at the bottom of their Measurement & Data 5 Recording Sheet students move to each angle selected to check to see if they were correct.

3. Students score 3 points for a correct answer and add up their points to see how many points they scored for the activity and how accurate they were in their estimating skills.

Equipment Required:

- A Measurement & Data 5 Recording Sheet and pencil per pair.

Notes:

To complete this task Students will need to be given an area where there are more than just right angles. An area with trees or play equipment would be good as these can contain many unusual angles.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.2 - Reasons abstractly and quantitatively.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

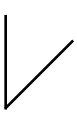
Physical Education Standards Covered:

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

MEASUREMENT & DATA 5 RECORDING SHEET

Where the angle being used is located	Circle your prediction	Were you correct	Score 3 for each correct answer
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	
	Acute / 90⁰ / Obtuse	☐ Yes ☐ No	

Acute Angle	90⁰ Angle	Obtuse Angle
 Less than 90⁰		More than 90⁰

LEVEL 5

4.MD.6

MEASUREMENT & DATA 6

In this Math 'N' Movement activity students will measure and record angles in whole number degrees using a protractor.

ACTIVITY

1. In teams of 5, students stand with their Measurement & Data 6 Recording Sheet, 5 metres from their team's protractor.

2. Teams work together to predict the size of each angle. When all 10 angles have been predicted the first student in each team races, using the given movement, to their team's protractor to measure the first angle on their Measurement & Data 6 Recording Sheet.

4. Students record the angle and then race back to their team so the team can calculate the difference between the measured and actual angle sizes.

5. The remaining student take it in turns to race to measure angles and work as a team to find the difference between the 2 angles.

Equipment Required:

- A Measurement & Data 6 Recording Sheet and pencil per student.
- A protractor per team.

Notes:

Each student will get a chance to measure all the angles but for a shorter activity teams could share a Recording Sheet and take it in turns to measure the angles with each student completing only 1 or 2 angles.

Mathematical Practices Covered:

4.1 - Makes sense of problems and perseveres in solving them.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

Physical Education Standards Covered:

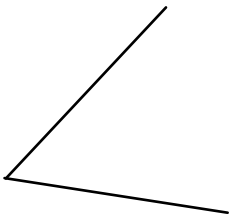
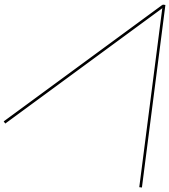
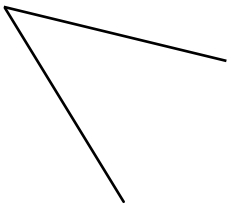
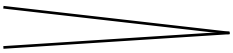
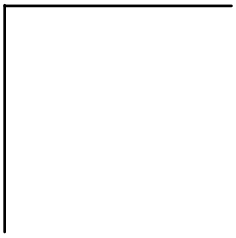
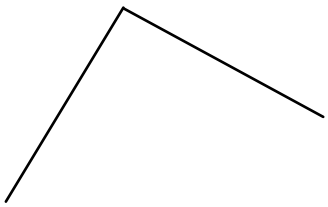
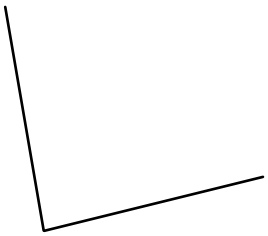
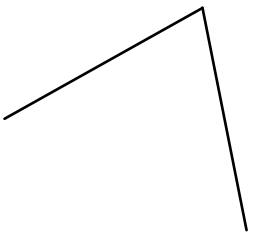
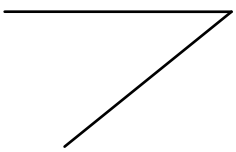
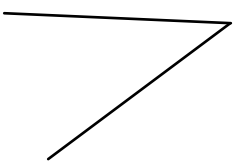
PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

MEASUREMENT & DATA 6 RECORDING SHEET

Angle	Degrees	Angle	Degrees
	Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}		Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}
	Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}		Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}
	Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}		Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}
	Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}		Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}
	Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}		Estimated Degrees: _____^{0} Measured Degrees: _____^{0} Difference in Degrees: _____^{0}

LEVEL 5

4.G.1

GEOMETRY 1

In this Math 'N' Movement activity students will draw acute, obtuse and right angles.

ACTIVITY

1. In teams of 5, students stand 5 metres from their team's Geometry 1 Recording Sheet.

2. When a type of angle - 'acute', 'obtuse' or 'right' is called the first student in each team races, using the given movement, to their team's Geometry 1 Recording Sheet and draws an angle to match the type requested in the correct column.

3. Once the angle is drawn the first student races back and the next student in each team has a turn.

Equipment Required:

- A Geometry 1 Recording Sheet and pencil per team.

Notes:

As students become more proficient at this task a number of degrees can be called rather than the type of angle and students must identify the angle based on it being larger than, smaller than or exactly 90^0 to work out where to draw the angle. There is enough space for each student to draw 3 angles.

Mathematical Practices Covered:

4.2 - Reasons abstractly and quantitatively.

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

4.7 - Looks for and makes use of structures.

4.8 - Looks for and expresses regularity in repeated reasoning.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

GEOMETRY 1 RECORDING SHEET

Acute	Right Angle	Obtuse

LEVEL 5

4.G.3

GEOMETRY 3

In this Math 'N' Movement activity students will draw lines of symmetry on figures as a line where the figure could be cut into 2 equal parts.

ACTIVITY

1. In teams of 4, students line up at least 5 metres from their Geometry 3 Recording Sheet.

2. The first student in each team races, using the given movement, to their team's Geometry 3 Recording Sheet and draws one line of symmetry on the first shape.

3. Remaining students take it in turns to each race and draw a line a symmetry until 4 lines of symmetry are drawn on each shape.

4. Students change positions and repeat racing and drawing lines until all 4 students have had a chance to be 1st, 2nd, 3rd and 4th and all 4 shapes have 4 lines of symmetry drawn on them.

Equipment Required:

- A Geometry 3 Recording Sheet and pencil per team.

Notes:

Once all 4 shapes have 4 lines of symmetry on them teams could be asked to race and draw shapes or letters with 1, 2, 3 or 4 lines of symmetry rather than drawing lines on existing shapes. The shapes drawn could be used for later rounds of this same activity.

Mathematical Practices Covered:

4.4 - Models with mathematics.

4.5 - Uses appropriate tools strategically.

4.6 - Attends to precision.

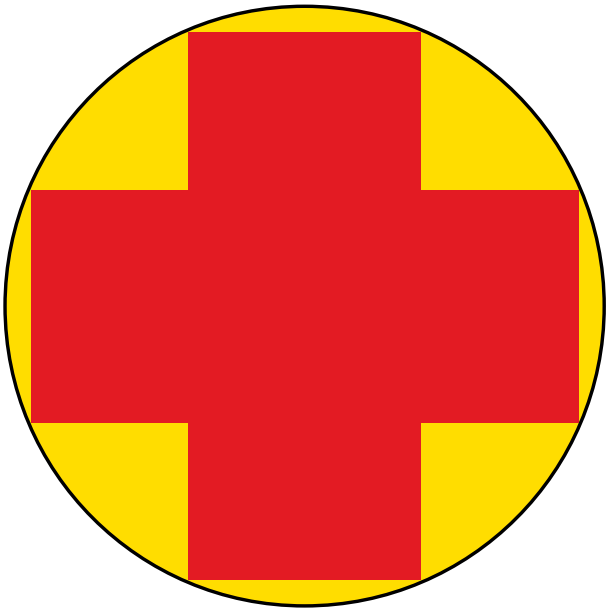
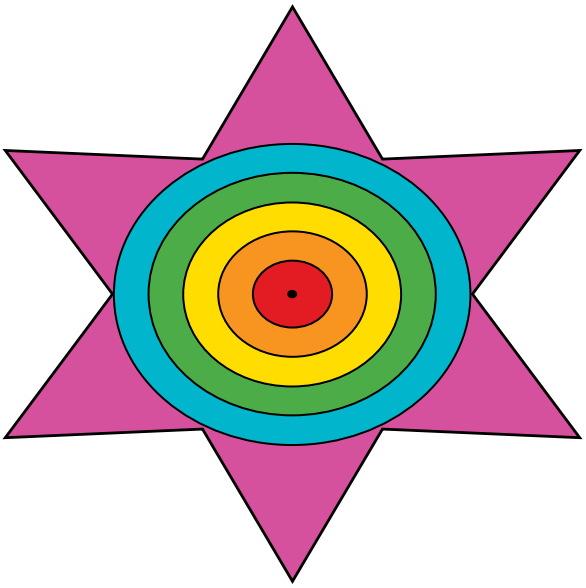
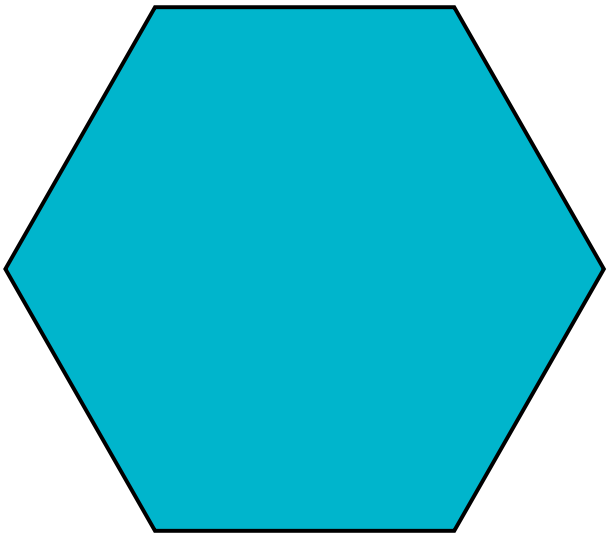
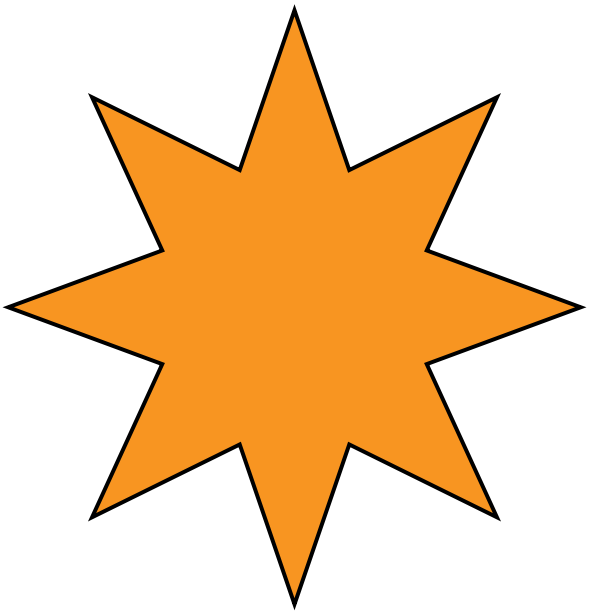
4.7 - Looks for and makes use of structures.

Physical Education Standards Covered:

PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 3.9 - Meets minimum requirements for health-related physical fitness.

PE 5.3 - Accepts responsibility for one's own performance without blaming others.

PE 5.5 - Includes others in physical activities and respects individual differences in skill and motivation.

GEOMETRY 3 RECORDING SHEET