M4TH 'N' MOVEMENT

Level 6

GRADE 5

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 6

Grade 5

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Common Core Standards Edition

LEVEL 6

5.OA.1

OPERATIONS & ALGEBRA 1

In this Math 'N' Movement activity students will create simple numerical expressions which include parentheses without having to calculate the answer.

ACTIVITY

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

2. When the first student in each team is given a verbal equation they race, using the given movement, to their team's pile of Operations & Algebra 1 Number Cards to create the equation using numbers and parentheses ie. add 4 to 13 then multiply by 3 is (4 + 13) x 3.

3. When checked the cards are returned to the pile and the remaining students take it in turn to create an equation.

Equipment Required:

- A set of Operations & Algebra 1 Cards per team.

Notes:

Any operation +, -, x or ÷ can be used for this activity and any level of complexity of the algorithm can be requested provided the numbers are only used once as there is only one of each card in each team's set. For multiples of numbers multiple sets of cards will be required. Double parentheses would then also be possible if 2 sets were being used.

Mathematical Practices Covered:

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

5.2 - Reasons abstractly and quantitatively.

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - 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 5.6 - Acknowledges orally the contributions and strengths of others.

OPERATIONS & ALGEBRA 1 RECORDING SHEET

1	7	−
2	8	÷
3	9	(
4	0	)
5	+	×

LEVEL 6

5.OA.3

OPERATIONS & ALGEBRA 3

In this Math 'N' Movement activity students will use a mathematical rule to generate pairs of numbers and then graph them on the first quadrant of the coordinate plane.

ACTIVITY

1. In teams of 4, students sit with their individual Operations & Algebra 3 Recording Sheet, 5 metres from their team's die.

2. The first student in each team races, using the given movement, to roll the die to see how many they must add to each of their coordinates and plots these on their Operations & Algebra 3 1st Quadrant Number Plane.

3. Remaining students take it in turns to race, roll to add numbers and plot their coordinates on their Number Planes.

4. Each student has 6 turns to race, roll the die and plot numbers so that +, - and x operations are used.

Equipment Required:

- An Operations & Algebra 3 Recording Sheet and pencil per student.
- A regular die per team.

Notes:

Three of the 4 operations have been used for this activity as division could prove difficult if numbers were not divisible by the number rolled. Additional pairs of coordinates could be easily created by rolling 2 dice for the first number and one of the 2 dice a second time for the rule.

Mathematical Practices Covered:

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

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - Looks for and makes use of structures.

5.8 - 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.

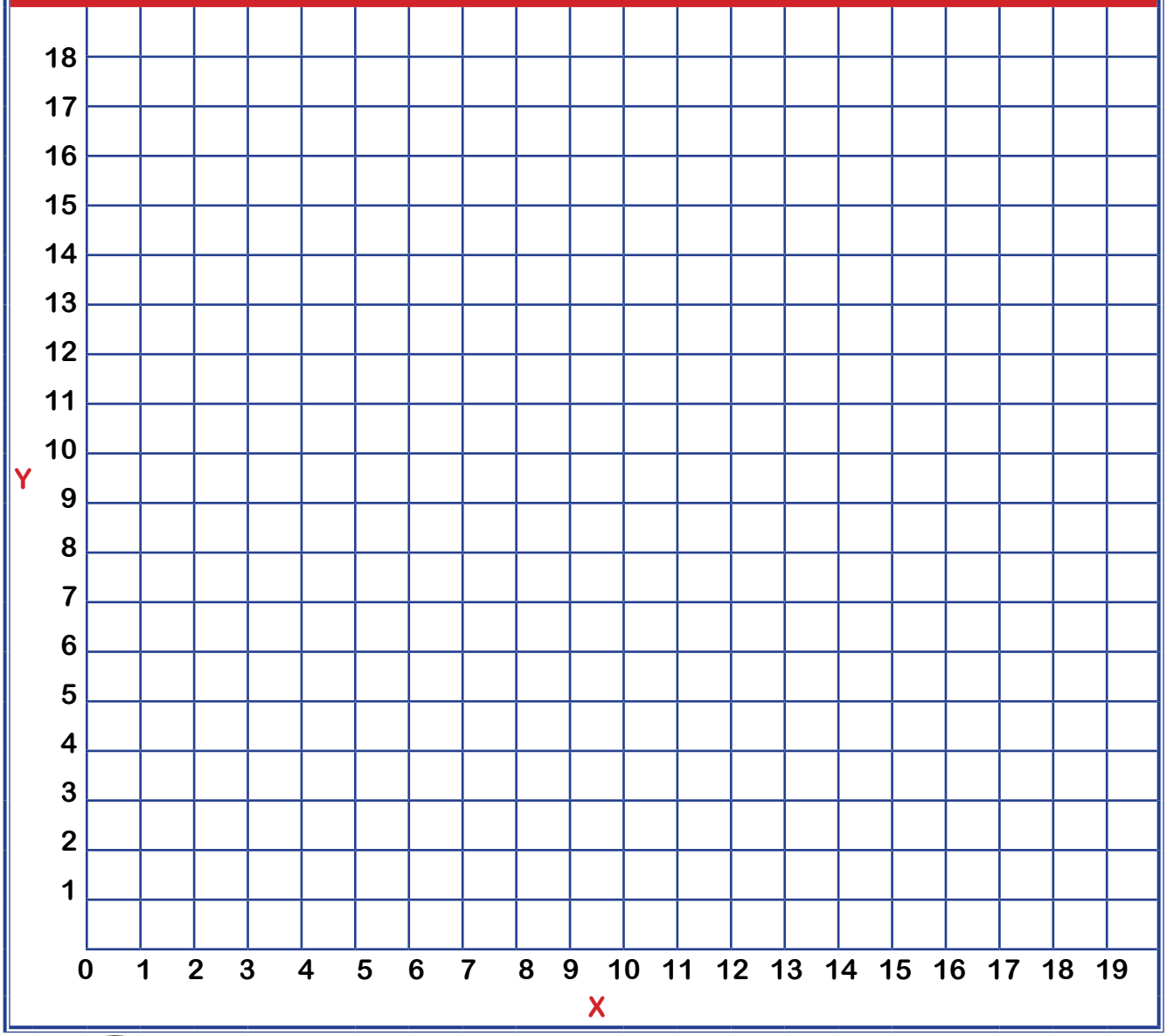
PE 5.6 - Acknowledges orally the contributions and strengths of others.

OPERATIONS & ALGEBRA 3 RECORDING SHEET

Student: _____

Round	Rule & No. Rolled	X (Given), Y (Created)	X (Given), Y (Created)
1	Add _____	(3, ____)	(5, ____)
2	Subtract _____	(13, ____)	(9, ____)
3	Multiply By _____	(1, ____)	(3, ____)
4	Add _____	(4, ____)	(12, ____)
5	Subtract _____	(16, ____)	(20, ____)
6	Multiply By _____	(0, ____)	(2, ____)

1st Quadrant Number Plane



LEVEL 6

5.NBT.1

NUMBER & BASE 10 - 1

In this Math 'N' Movement activity students will recognise that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the pace to its right and 1/10 that on its left.

ACTIVITY

1. In teams of 3 or 4, students line up at least 5 metres from their team's pile of Roman Numeral Cards.

2. The first student in each team is given a number between 100 and 1000.

3. The students race, using the given movement, to their pile of Roman Numerals to create the given number.

4. When correct they return to their team and the remaining students take it in turn to create a given number.

Equipment Required:

- A set of Number & Base 10 - 1 Roman Numerals per team.

Notes:

As a reverse of this game students could be shown a Roman Numeral and they race to use Hindu Arabic numbers from 1 to 9 to create it.

As a reminder:
I = 1, II =2, III = 3, IV = 4, V = 5, IX = 9, X = 10, L = 50, C = 100 (Century), D = 500 and M = 1000 (Millennia).

Mathematical Practices Covered:

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

5.2 - Reasons abstractly and quantitatively.

5.4 - Models with mathematics.

5.6 - Attends to precision.

5.8 - 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 5.6 - Acknowledges orally the contributions and strengths of others.

NUMBER & BASE 10 - 1 ROMAN NUMERALS

I	I	I	I
I	I	I	I
I	I	I	I
V	V	V	V
X	X	X	X
X	X	X	X
X	X	X	X
L	L	L	L
C	C	C	C
C	C	C	C
C	C	C	C
D	D	D	D
M	M	M	M

LEVEL 6

5.NBT.3

NUMBER & BASE 10 - 3

In this Math 'N' Movement activity students will read, write and compare decimals from thousands to ten thousandths or 4 decimal places.

ACTIVITY

1. In teams of 4, students line up 5 metres from their Number & Base 10 - 3 Recording Sheet and die.

2. The first student in each team races, using the given movement, to their team's die and Recording Sheet and rolls to see which number they will place in the 1000s position then races back to their team.

3. The 2nd student in each team races to the Recording Sheet and die and rolls to find the 100s.

4. The 3rd student adds the 10s and the 4th student the 1s. Students repeat racing and rolling to add the 10th, 100ths, 1000th and 10,000ths.

5. When 8 numbers have been recorded and each student has been 1st twice teams work together to order the numbers from largest to smallest.

Equipment Required:

- A Number & Base 10 - 3 Recording Sheet and pencil per team.
- A regular die per team.

Notes:

A regular die has been suggested for this activity but a decahedron or 10 sided die could also be used with the 10 replaced with a zero so students could experience decimals with zeros in any of the possible places.

Mathematical Practices Covered:

5.2 - Reasons abstractly and quantitatively.

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

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Acknowledges orally the contributions and strengths of others.

NUMBER & BASE 10 - 3 RECORDING SHEET

Students: _____, _____, _____ and _____.

1000s	100s	10s	1s	.	10ths	100ths	1000ths	10,000ths
				.				
				.				
				.				
				.				
				.				
				.				
				.				
				.				

Order the 8 numbers created from largest to smallest.

					.				
Largest					.				
2					.				
3					.				
4					.				
5					.				
6					.				
7					.				
Smallest					.				

LEVEL 6

5.NBT.4

NUMBER & BASE 10 - 4

In this Math 'N' Movement activity students will use place value understanding to round decimals to any place.

ACTIVITY

1. In teams of 4, students find a place where they can star jump without hitting another student.

2. When students hear the whistle, the 1st student in each team star jumps as many times as they can before they hear the whistle again after 5 seconds.

3. The 1st student records their jumps on their Number & Base 10 - 4 Recording Sheet and this is how many points they must round each number to.

4. Remaining students take it in turn to star jump and round numbers. Each student has 2 chances to star jump or complete an alternate physical activity and round numbers.

Equipment Required:

- A stop watch and whistle.
- A Number & Base 10 - 4 Recording Sheet and pencil per team.

Notes:

If students have the same results it may be necessary to use jumps with a group skipping rope or throwing and catching a ball with a partner to create a variation in results.

For the second set of results an alternate activity should be used such as tricep push ups in10 seconds or sprint runs over a 5 metre course in 15 seconds.

Mathematical Practices Covered:

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

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - Looks for and makes use of structures.

Physical Education Standards Covered:

PE 1.3 - Jumps for distance, using proper take off and landing.

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

PE 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

NUMBER & BASE 10 - 4 RECORDING SHEET

Student 1	Star Jumps	Number:	0.	1	4	6	8	2	9	5	7
_____	_____	Rounded Number:	0.	___	___	___	___	___	___	___	___
Student 2	Star Jumps	Number:	0.	2	4	1	6	8	3	5	7
_____	_____	Rounded Number:	0.	___	___	___	___	___	___	___	___
Student 3	Star Jumps	Number:	0.	9	3	5	1	8	6	4	2
_____	_____	Rounded Number:	0.	___	___	___	___	___	___	___	___
Student 4	Star Jumps	Number:	0.	1	7	6	3	8	4	0	5
_____	_____	Rounded Number:	0.	___	___	___	___	___	___	___	___

Student 1	Activity Result	Number:	0.	8	1	5	0	3	7	2	9
_____	_____	Rounded Number:	0.	___	___	___	___	___	___	___	___
Student 2	Activity Result	Number:	0.	7	4	1	6	8	3	5	0
_____	_____	Rounded Number:	0.	___	___	___	___	___	___	___	___
Student 3	Activity Result	Number:	0.	5	2	6	0	3	4	9	1
_____	_____	Rounded Number:	0.	___	___	___	___	___	___	___	___
Student 4	Activity Result	Number:	0.	4	8	5	6	3	2	1	9
_____	_____	Rounded Number:	0.	___	___	___	___	___	___	___	___

LEVEL 6

5.NBT.5

NUMBER & BASE 10 - 5

In this Math 'N' Movement activity students will fluently multiply multi-digit whole numbers using standard algorithms.

ACTIVITY

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

2. The first student in each team races, using the given movement to their pile of cards and selects a card and records it on their Recording Sheet.

3. The 1st student keeps the card and the 2nd, 3rd and 4th students take it in turns to race to collect cards to record.

4. When each student has recorded 2 cards the team multiply the 2 x 4 digit numbers together.

5. Students return the cards, swap positions and race to collect 8 more cards to multiply together.

Equipment Required:

- A set of playing cards from A to 9 per team.
- A Number & Base 10 - 5 Recording Sheet and pencil per team.

Notes:

Students can race to return the card once it is recorded to increase the number of times they are covering the 5 metres distance or wait and have 1 student return all the cards at the end of the round. To increase the number of rounds it is advisable to copy the Recording Sheet back to back so students can each have a chance to be 1st, 2nd, 3rd and 4th and complete 4 multiplications.

Mathematical Practices Covered:

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

NUMBER & BASE 10 - 5 RECORDING SHEET

Students: _____

ROUND 1

Student 1	Student 2	Student 3	Student 4
Student 1	Student 2	Student 3	Student 4

								x
							0	
						0	0	
					0	0	0	

ROUND 2

Student 1	Student 2	Student 3	Student 4
Student 1	Student 2	Student 3	Student 4

								x
							0	
						0	0	
					0	0	0	

LEVEL 6

5.NBT.7

NUMBER & BASE 10 - 7

In this Math 'N' Movement activity students will add, subtract and multiply decimals to hundredths using money.

ACTIVITY

1. In teams of 4 or 5, students line up with their container of money at least 5 metres from their Number & Base 10 - 7 Shopping Cards.

2. The first student in each team is shown 2 Number & Base 10 - 7 Shopping Cards which they add together and calculate the change from $50.

3. Once calculated students race, using the given movement, to deliver the change they have calculated is required.

4. If correct, the student returns to their team but if incorrect they must try again until they produce the correct change so the remaining students in their team can each have a turn.

Equipment Required:

- A set of Number & Base 10 -7 Shopping Cards.
- A set of Number & Base 10 -7 Shop Money in a container per team.

Notes:

If students find 2 items easy more items can be added or multiples of items purchased before the change is calculated so students are multiplying with money.

Students may need scrap paper and a pencil to calculate the change required.

Mathematical Practices Covered:

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

5.2 - Reasons abstractly and quantitatively.

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

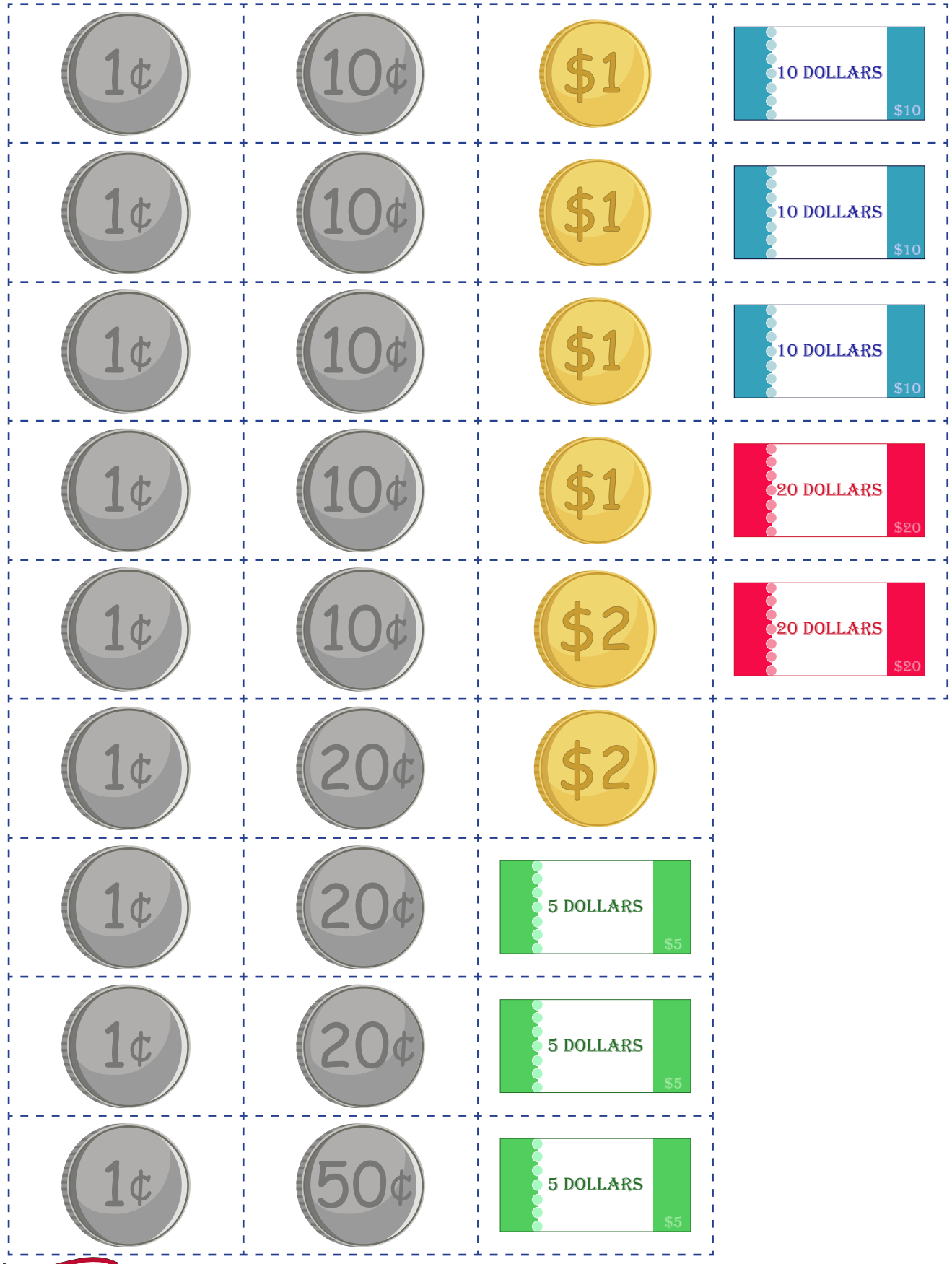
Physical Education Standards Covered:

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

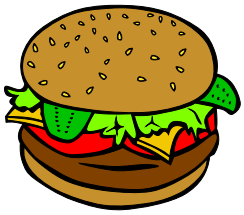
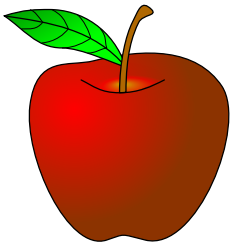
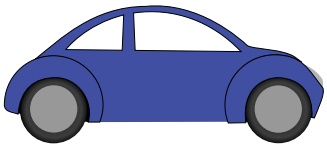
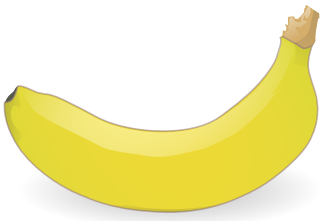
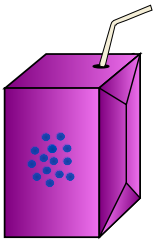
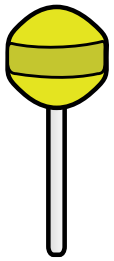
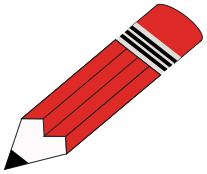
PE 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

NUMBER & BASE 10 - 7 SHOP MONEY



NUMBER & BASE 10 - 7 SHOPPING CARDS

$17.49 	$3.95 	$2.76 	54c 
$34.27 	72c 	$2.75 	$14.90 
$1.90 	$4.75 	58c 	$1.24 

LEVEL 6

5.NF.1

NUMBER & FRACTIONS 1

In this Math 'N' Movement activity students will use equivalent fractions to add and subtract fractions with different denominators.

ACTIVITY

1. In pairs students find a space where they can skip rope safely without hitting another student.

2. When the whistle sounds, the first student in each pair counts how many times they can skip rope before the whistle sounds again after 20 seconds. This is recorded on the pair's Number & Fractions 1 Recording Sheet in the correct position.

3. The 2nd student in each pair skips and records their results in their space on the Recording Sheet.

4. Students complete the mixed fraction algorithm.

5. Students repeat this activity with tapping a ball with a racquet, passing a ball, sprint running 5 metres, completing star jumps and performing sit ups correctly.

Equipment Required:

- A skipping rope per pair.
- A ball and racquet per pair.
- A Number & Fractions 1 Recording Sheet and pencil per pair.

Notes:

If equipment is in short supply pairs could rotate between the 5 activities or an alternate form of physical activity could be used to generate the numbers required for the numerator of each equation. If students need revision in long jump, shot put or measuring this would be a perfect opportunity to revise these topics.

Mathematical Practices Covered:

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

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - Looks for and makes use of structures.

Physical Education Standards Covered:

PE 1.4 - Successfully jumps rope.

PE 1.10 - Strikes a dropped ball, with a racket or paddle, toward a target.

PE 1.16 - Passes a ball back and forth with a partner.

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

PE 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

NUMBER & FRACTIONS 1 RECORDING SHEET

In 20 Seconds	Student 1: _____	Student 2: _____
Skips		
Taps on a Racquet		
Sprint Runs		
Star Jumps		
Sit Ups		

Skips

Student 1 Student 2

$\frac{\square}{2} + \frac{\square}{2} = \square\frac{\square}{2} + \square\frac{\square}{2} = \square\frac{\square}{2}$

Racquet Taps

Student 2 Student 1

$\frac{\square}{3} + \frac{\square}{3} = \square\frac{\square}{3} + \square\frac{\square}{3} = \square\frac{\square}{3}$

Sprint Runs

Student 1 Student 2

$\frac{\square}{4} + \frac{\square}{4} = \square\frac{\square}{4} + \square\frac{\square}{4} = \square\frac{\square}{4}$

Star Jumps

Student 2 Student 1

$\frac{\square}{5} + \frac{\square}{5} = \square\frac{\square}{5} + \square\frac{\square}{5} = \square\frac{\square}{5}$

Sit Ups

Student 1 Student 2

$\frac{\square}{7} + \frac{\square}{7} = \square\frac{\square}{7} + \square\frac{\square}{7} = \square\frac{\square}{7}$

LEVEL 6

5.NF.2

NUMBER & FRACTIONS 2

In this Math 'N' Movement activity students will solve word problems involving addition and subtraction of fractions.

ACTIVITY

1. In teams of 4, students line up 5 metres from their set of Number & Fraction 2 Fraction Cards.

2. The first student in each team races, using the given movement, to the team's Number & Fraction 2 Fraction Cards and draws one card and returns with it to the team.

3. The remaining 3 students take it in turns to race, retrieve cards and return to their team to record the card in the correct position on their team's Number & Fraction 2 Recording Sheet.

4. As a team students solve the fraction word problem they have created.

5. Students return their Fraction Cards, change positions and race again to collect cards and solve the second word problem.

Equipment Required:

- A set of Number & Fractions 2 Cards per team.
- A Number & Fractions 2 Recording Sheet and pencil per team.

Notes:

When students have complete both the word problems provided they may wish to create some of their own for their classmates to solve. These could be used for future rounds of this activity or as a revision activity later in the year.

Mathematical Practices Covered:

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

5.2 - Reasons abstractly and quantitatively.

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.8 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

NUMBER & FRACTIONS 2 FRACTION CARDS

$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$
$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$	$\frac{1}{6}$

NUMBER & FRACTIONS 2 FRACTION CARDS

Students: _____

1. Four students went to the shops and each purchased a piece of watermelon. How many watermelons did the four students purchase altogether?

Student 1 Student 2 Student 3 Student 4

$$\frac{\square}{\square} + \frac{\square}{\square} + \frac{\square}{\square} + \frac{\square}{\square}$$

Equivalent Fraction Equivalent Fraction Equivalent Fraction Equivalent Fraction

$$\frac{\square}{\square} + \frac{\square}{\square} + \frac{\square}{\square} + \frac{\square}{\square} = \frac{\square}{\square} = \square\frac{\square}{\square}$$

2. Four students shared 8 cup cakes. Each student took a portion of a cup cake. How many cup cakes were left after the four students each took their portions?

Student 1 Student 2 Student 3 Student 4

$$8 - \frac{\square}{\square} - \frac{\square}{\square} - \frac{\square}{\square} - \frac{\square}{\square}$$

Equiv. Fraction Equiv. Fraction Equiv. Fraction Equiv. Fraction

$$8 - \frac{\square}{\square} - \frac{\square}{\square} - \frac{\square}{\square} - \frac{\square}{\square} = \frac{\square}{\square} = \square\frac{\square}{\square}$$

LEVEL 6

5.NF.3

NUMBER & FRACTIONS 3

In this Math 'N' Movement activity students will apply their understanding of a fraction as division of the numerator to multiply a fraction by a whole number and divide by a decimal.

ACTIVITY

1. In teams of 4 or 5, students line up 5 metres from their Number & Fractions 3 Recording Sheet and calculator.

2. Students are told that 1 Pound is equivalent to 2 & 1/5 Kilograms and are shown an example of each of these weights.

3. The first student in each team races, using the given movement, to their team's Number & Fractions 3 Recording Sheet and calculator and converts the first 'Kilogram' amount into its new form of 'Pounds' by dividing by 2.2.

4. When correct the students race back to their team and each teams second member coverts pounds to kilograms by multiplying by 2 & 1/5.

Equipment Required:

- A calculator per team.
- A Number & Fractions 3 Recording Sheet and pencil per team.

Notes:

Once students understand how to convert between pounds and kilograms you may wish to look at healthy weight, underweight, overweight and obese as a measure of mass and how these relate to kilograms and pounds.

Mathematical Practices Covered:

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

5.2 - Reasons abstractly and quantitatively.

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - 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 4.15 - Explains why body weight depends in calorie intake and expenditure.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

NUMBER & FRACTIONS 3 RECORDING SHEET

1 Pound (lb) = 2.2 Kilograms (kg) or $2\frac{1}{5}$

Kilograms	Pounds	Kilograms	Pounds
20kg		35kg	
	8.8lb		37.4lb
45kg		500kg	
	19.8lb		83.6lb
12kg		19kg	
	92.4lb		30.8lb
148kg		80kg	

LEVEL 6

5.NF.4

NUMBER & FRACTIONS 4

In this Math 'N' Movement activity students will apply and extend their understanding of multiplication to multiply 2 fractions.

ACTIVITY

1. In teams of 4, students stand with their teams Number & Fractions 4 Recording Sheet, 5 metres from their Number & Fractions 4 Number Cards.

2. The first student in each team races, using the given movement, to retrieve 1 card and return it to the team to be recorded in the correct position on their Number & Fractions 4 Recording Sheet.

3. Remaining students take it in turn to race, collect a card and record it.

4. Teams work together to multiply the fractions they have created and produce a mixed fraction answer.

5. Teams return their cards, swap positions and race again to collect cards, record the numbers and complete fraction multiplications.

Equipment Required:

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

Notes:

The Recording Sheet provides opportunity for students to complete 6 fraction multiplications to ensure they master this complex mathematical skill and have an opportunity to record their numbers in each of the locations with 3 numerator and 3 denominators per student.

Mathematical Practices Covered:

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

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - Looks for and makes use of structures.

5.8 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

NUMBER & FRACTIONS 4 NUMBER CARDS

1	4	7
2	5	8
3	6	9

NUMBER & FRACTIONS 4 RECORDING SHEET

Students: _____

Student 1 / Student 2	X	Student 3 / Student 4	=		=			
Student 1 / Student 2	X	Student 3 / Student 4	=		=			
Student 1 / Student 2	X	Student 3 / Student 4	=		=			
Student 1 / Student 2	X	Student 3 / Student 4	=		=			
Student 1 / Student 2	X	Student 3 / Student 4	=		=			
Student 1 / Student 2	X	Student 3 / Student 4	=		=			

LEVEL 6

5.NF.6

NUMBER & FRACTIONS 6

In this Math 'N' Movement activity students will engage in real world use of fractions and mixed numbers.

ACTIVITY

1. In teams of 4 or 5, students stand with their clear plastic cup 5 metres from the cordial bottle.

2. The first student in each team races, using the given movement, to take their plastic cup to the cordial bottle.

3. Each student holds their Number & Fractions 6 Measuring Card next to their cup and measures cordial into their cup to cover the first box.

4. When each student has poured their cordial they take it in turns to add water to cover the remaining 4 boxes one at a time.

5. When each student has 4 parts water to 1 part cordial they can taste their drink and see if they think it needs more or less cordial added.

Equipment Required:

- A bottle of cordial with a 4 to 1 mixing ratio.
- A cup per student.
- Drinking water per team.
- A Number & Fractions 6 Measuring Card per student.

Notes:

This activity is a great way to start a discussion about what students are drinking and whether they are consuming enough water each day. If students feel that the drink is too sweet or not sweet enough discuss what this tells you about the child's diet

Mathematical Practices Covered:

5.2 - Reasons abstractly and quantitatively.

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - 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 4.15 - Explains why body weight depends in calorie intake and expenditure.

PE 4.6 - Records water intake before, during, and after physical activity.

PE 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

NUMBER & FRACTIONS 6 MEASURING CARDS

Place Cup Base Here	Water	$\frac{1}{5}$
	Water	$\frac{1}{5}$
	Water	$\frac{1}{5}$
	Water	$\frac{1}{5}$
	Cordial	$\frac{1}{5}$

Place Cup Base Here	Water	$\frac{1}{5}$
	Water	$\frac{1}{5}$
	Water	$\frac{1}{5}$
	Water	$\frac{1}{5}$
	Cordial	$\frac{1}{5}$

LEVEL 6

5.MD.1

MEASUREMENT & DATA 1

In this Math 'N' Movement activity students will convert among different sized standard measurement units within a given measurement system.

ACTIVITY

1. In teams of 4, students stand with their hula hoop of items and work together to estimate in grams and kilograms on their Measurement & Data 1 Recording Sheet the weight of each item.

2. Once estimated, the first student in each team races, using the given movement, 5 metres to their team's scales to weigh one item.

3. When the first students return and record the weight of their item remaining students take turns racing, weighing and recording the mass of their items on their team's Recording Sheet.

4. Once all items have been weighed students are told that they must carry their items home but each shopping bag can only hold 3 kgs. Teams calculate how many shopping bags they require (scales can be used to check bags if required).

Equipment Required:

- A set of scales per team.
- A plastic bag per team.
- A hula hoop containing 8 items per team.
- A Measurement & Data 1 Recording Sheet and pencil per team.

Notes:

Any classroom or home items can be used for this activity such as textbooks, pencils, drink bottles, pieces of fruit etc. and in fact the more varied the mass range of the chosen items the better the activity. If students enjoy this activity it could be repeated with varying weight rated bags or a limit to the number of bags they have but each must be equally balanced.

Mathematical Practices Covered:

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

5.2 - Reasons abstractly and quantitatively.

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

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.8 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

MEASUREMENT & DATA 1 RECORDING SHEET

Item	Estimated Weight	Actual Weight
Number of bags required:		

Contents of Each Bag

Bag 1: _____ _____ _____	Bag 3: _____ _____ _____
Bag 2: _____ _____ _____	Bag 4: _____ _____ _____

LEVEL 6

5.MD.2

MEASUREMENT & DATA 2

In this Math 'N' Movement activity students will graph a data set of measurements in fractions of units.

ACTIVITY

1. In teams of 4 or 5, students sit with their Measurement & Data 2 Recording Sheet at least 5 metres from the large jug of colored water.

2. An amount of water is poured into the measuring jug and the first student in each team must estimate the volume of colored water in the jug.

3. Once predicted, the first student races, using the given movement, to the jug to read the volume of water to the nearest millilitre and graphs it on their Measurement & Data 2 Recording Sheet. Students calculate the difference between their estimated and actual volumes.

4. When correct, students return to their team and remaining student take turns estimating and measuring new volumes of water.

Equipment Required:

- A jug of colored water.
- A container to hold the colored water not in the jug.
- A Measurement & Data 2 Recording Sheet per team.
- 2 colored pencils per team member.

Notes:

While ordinary water could be used for this activity it is much easier for students to read the volume of water in the jug if a few drops of food dye, water soluble paint or ink are added.

Mathematical Practices Covered:

5.2 - Reasons abstractly and quantitatively.

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - Looks for and makes use of structures.

5.8 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

MEASUREMENT & DATA 2 RECORDING SHEET

Student 1: _____ Student 2: _____ Student 3: _____ Student 4: _____

Volume Versus Student Measurement								
2L								
1L 90								
1L 80								
1L 70								
1L 60								
1L 50								
1L 40								
1L 30								
1L 20								
1L 10								
1lmm								
90mm								
80mm								
70mm								
60mm								
50mm								
40mm								
30mm								
20mm								
10mm								
	Student 1 Estimate	Student 1 Actual	Student 2 Estimate	Student 2 Actual	Student 3 Estimate	Student 3 Actual	Student 4 Estimate	Student 4 Actual

Student 1	Student 2	Student 3	Student 4
Difference between actual & estimated volumes: _____	Difference between actual & estimated volumes: _____	Difference between actual & estimated volumes: _____	Difference between actual & estimated volumes: _____

LEVEL 6

5.MD.3

MEASUREMENT & DATA 3

In this Math 'N' Movement activity students will recognize volume as an attribute of solid figures and estimate the volume of various containers.

ACTIVITY

1. In teams of 5, students are shown a selection of items such as an egg cup, mug and take-away container and must predict on their Measurement & Data 3 Recording Sheet how many full or partially full 1 cup measuring cups of water it will take to fill each container to capacity.

2. Students take it in turns to sprint run cups of water from the bucket 5 metres away to the container being filled which is held by one of their team mates.

3. Students discuss why a standard cup measure is required and why teams achieve varying results for this activity.

Equipment Required:

- A large bucket of water.
- 4 containers per team.
- A measuring cup per team.
- A Measurement & Data 3 Recording Sheet and pencil per team.

Notes:

This activity could be converted to measure cubic centimetres if unifix cubes of 1cm^2 were used instead of water to measure the capacity of each of the 4 containers. It could also be measured in pints and quarts if preferred.

Mathematical Practices Covered:

5.2 - Reasons abstractly and quantitatively.

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

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - Looks for and makes use of structures.

5.8 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

MEASUREMENT & DATA 3 RECORDING SHEET

Student 1: _____	Predicted number of cups required to fill each container.	Actual number of cups required to fill each container.
Container 1		
Container 2		
Container 3		
Container 4		

Student 2: _____	Predicted number of cups required to fill each container.	Actual number of cups required to fill each container.
Container 1		
Container 2		
Container 3		
Container 4		

Student 3: _____	Predicted number of cups required to fill each container.	Actual number of cups required to fill each container.
Container 1		
Container 2		
Container 3		
Container 4		

Student 4: _____	Predicted number of cups required to fill each container.	Actual number of cups required to fill each container.
Container 1		
Container 2		
Container 3		
Container 4		

Student 5: _____	Predicted number of cups required to fill each container.	Actual number of cups required to fill each container.
Container 1		
Container 2		
Container 3		
Container 4		

LEVEL 6

5.MD.5

MEASUREMENT & DATA 5

In this Math 'N' Movement activity students will relate volume to multiplication and addition and use the height, breadth and width of containers to measure their volume.

ACTIVITY

1. In teams of 4, students line up with their measuring jug and 4 containers, 5 metres from their Measurement & Data 5 Recording Sheet, ruler and container of sand.

2. Teams predict the volume of each container.

3. The 1st student in each team races, using the given movement, to use their ruler to measure the height, breadth and width of the 1st container. The team then calculates the volume of the first container.

4. The 1st student races to fill the container with sand and brings it back to the team's measuring jug to compare the calculated and the sand volumes.

5. Students continue racing, measuring with rulers and sand until all 4 containers have been measured.

Equipment Required:

- 4 containers per team.
- A ruler per team.
- A container of sand per team.
- A Measurement & Data 5 Recording Sheet and pencil per team.

Notes:

Although sand has been used for this activity water could also be used as in Measurement & Data 3. To make it easier for students to measure you may wish to add a few drops of food coloring to the water as in Measurement & Data 2 so students can read the volume easily. Students will not be able to skip or gallop the water filled containers back to their team as they will lose the water and not be measuring the true volume.

Mathematical Practices Covered:

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

5.2 - Reasons abstractly and quantitatively.

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

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - Looks for and makes use of structures.

5.8 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

MEASUREMENT & DATA 5 RECORDING SHEET

Students: _____

	Container 1	Container 2	Container 3	Container 4
Estimated Volume				
Height				
Width				
Breadth				
Calculated Volume				
Measured Volume				
Difference Between Measured & Calculated Volumes				

LEVEL 6

5.G.1

GEOMETRY 1

In this Math 'N' Movement activity students will use a 4 quadrant Cartesian plane with dual axis and coordinates.

ACTIVITY

1. In teams of 4, students line up at least 5 metres from the Cartesian Plane and their Geometry 1 Recording Sheet.

2. The first student in each team is shown one item from the Cartesian Plane Pictures.

3. Students race, using the given movement to the Cartesian Plane and find the coordinates of the picture shown.

4. The picture and its coordinates are recorded on each team's Geometry 1 Recording Sheet.

5. When the first student returns the remaining students take it in turn to race and find coordinates.

Equipment Required:

- The Geometry 1 Cartesian Plane.
- A set of Cartesian Plane Pictures.
- A Geometry 1 Recording Sheet and pencil per team.

Notes:

There are enough items for teams of four to have 2 turns each. Additional items can be added if desired so that students can have more turns or teams could be given a blank Cartesian Plane on which to draw their own items and these could be used for subsequent games.

Mathematical Practices Covered:

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

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - Looks for and makes use of structures.

5.8 - Looks for and expresses regularity in repeated reasoning.

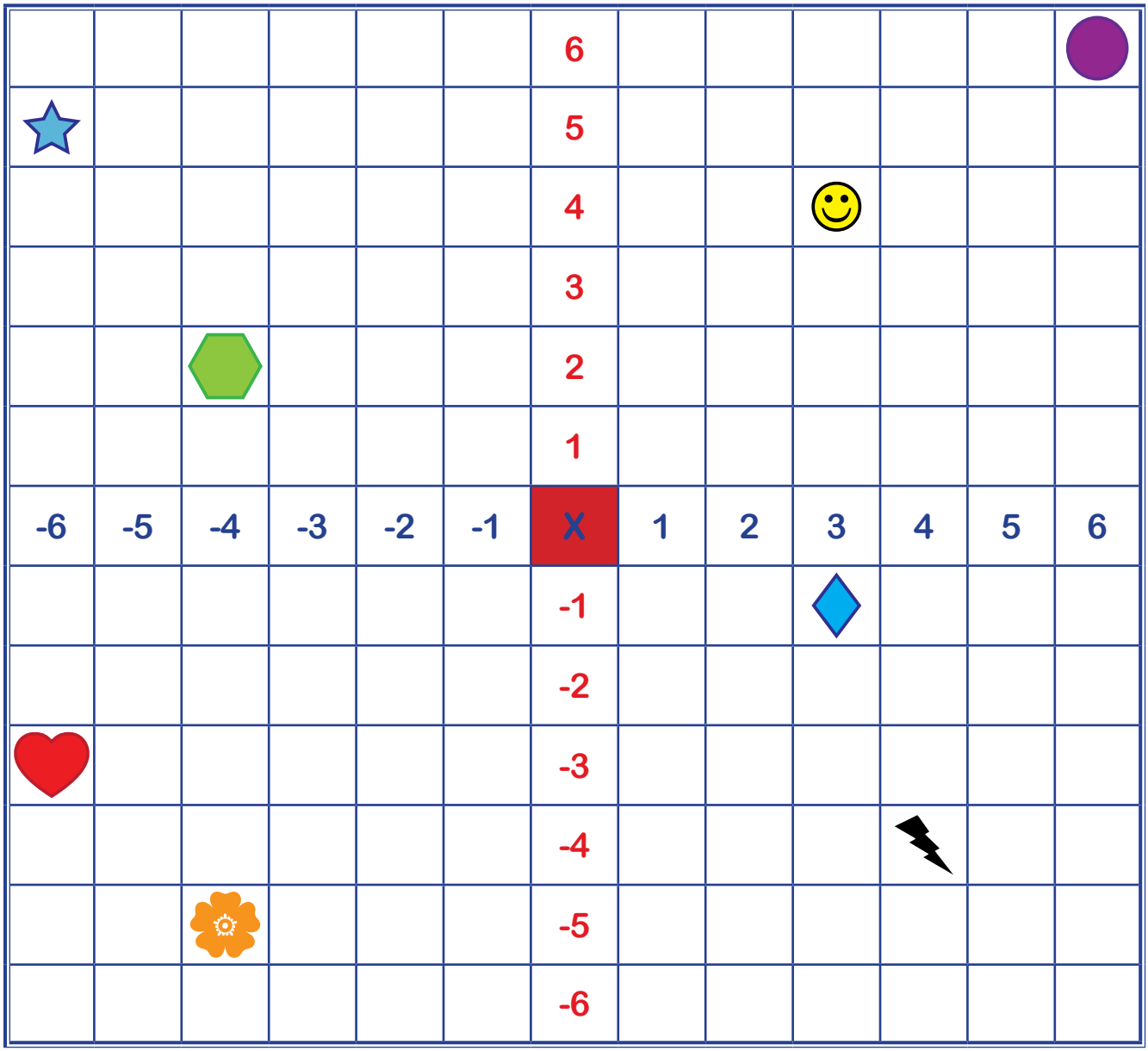
Physical Education Standards Covered:

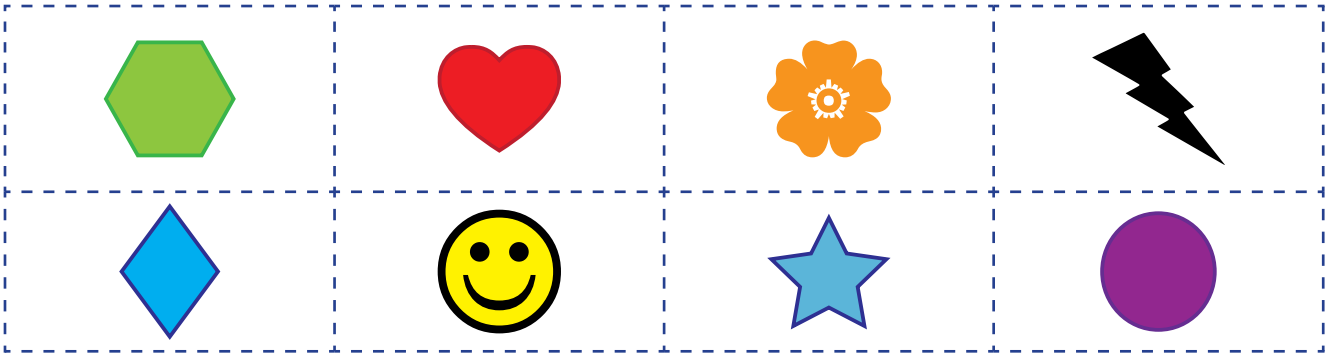
PE 3.3 - Participates 3 to 4 days each week in physical activities.

PE 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

GEOMETRY 1 CARTESIAN PLANE





GEOMETRY 1 RECORDING SHEET

ROUND 1	PICTURE	COORDINATES
STUDENT 1: _____		(___ , ___)
STUDENT 2: _____		(___ , ___)
STUDENT 3: _____		(___ , ___)
STUDENT 4: _____		(___ , ___)

ROUND 2	PICTURE	COORDINATES
STUDENT 1: _____		(___ , ___)
STUDENT 2: _____		(___ , ___)
STUDENT 3: _____		(___ , ___)
STUDENT 4: _____		(___ , ___)

LEVEL 6

5.G.2

GEOMETRY 2

In this Math 'N' Movement activity students will use the first quadrant of the Cartesian Plane to find coordinates.

ACTIVITY

1. In teams of 4, students line up 5 metres from their Geometry 2 Bingo Cards and dice (1 regular die and 1 marked with the letters A - F).

2. Students take it in turns to race, using the given movement, to their team's dice and roll both dice to create a coordinate with a number and letter to mark off on their Geometry 2 Bingo Card.

3. Students repeatedly run to their dice, roll, create a coordinate and mark it off on their card until one student has completely covered their grid and declares BINGO!

Equipment Required:

- A 6 x 6 Geometry 2 Bingo Card and pencil per team.
- A pair of dice per team – 1 regular die and 1 marked A to F per team.

Notes:

If you wish to create a shorter version of this game students can try to be the first to complete one row, column or diagonal rather than cover the entire grid to be able to call BINGO. For a longer game a 10 sided die with +ve and -ve integers and a full 4 quadrant Cartesian plane could be used.

Mathematical Practices Covered:

5.2 - Reasons abstractly and quantitatively.

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

GEOMETRY 2 BINGO CARDS

__________'s Bingo Card

F						
E						
D						
C						
B						
A						
	1	2	3	4	5	6

__________'s Bingo Card

F						
E						
D						
C						
B						
A						
	1	2	3	4	5	6

__________'s Bingo Card

F						
E						
D						
C						
B						
A						
	1	2	3	4	5	6

__________'s Bingo Card

F						
E						
D						
C						
B						
A						
	1	2	3	4	5	6

LEVEL 6

5.G.3

GEOMETRY 3

In this Math 'N' Movement activity students will understand the attributes of 2 Dimensional Shapes.

ACTIVITY

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

2. The first student in each team is told a 2D shape and when they hear the whistle they race, using the given movement, to their team's Geometry 3 Recording Sheet and quickly record the name of the shape and sketch it.

3. When students hear the whistle again after 30 seconds they must stop drawing and return to their team.

4. Student who are able to race to their Recording Sheet and draw the shape within the 30 seconds score a point for their team. The team with the most points wins.

Equipment Required:

- A stop watch.
- A whistle.
- A Geometry 3 Recording Sheet and pencil per team.

Notes:

Although 30 seconds is suggested as the time this can be varied based on students drawing and physical abilities. It is also not necessary to name the shape but rather they could be told the attributes of the shape to draw ie. has an angle sum of 360° which makes the task a little more challenging.

Mathematical Practices Covered:

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

GEOMETRY 3 RECORDING SHEET

Shape	Picture of the Shape	Points Scored
_____		
_____		
_____		
_____		
_____		

LEVEL 6

5.G.4

GEOMETRY 4

In this Math 'N' Movement activity students will classify 2D shapes based on their properties and use them to construct a picture.

ACTIVITY

1. In pairs, students stand 5 metres from their pile of 2D Shapes.

2. Students are told which Geometry 4 2D Shapes they need to collect such as a large triangle, 2 small trapeziums, 1 large octagon and 3 circles of choice.

3. Students take it in turns to race, using the movement given, to each collect 1 item each until all items have been collected.

4. Students are then told which common shape or scene they must create with their items such as a house, a train, a car or a bus.

5. Pairs are given 5 minutes to create their shape before walking around to look at other student's creations, return the shapes and start again.

Equipment Required:

- A set of 2D Shapes per pair.
- A stop watch.

Notes:

Any number of items can be used for each picture and the time need not be limited to 5 minutes. Similarly students could select their favourite picture to stick onto cardboard for a creative mathematically inspired artwork.

Mathematical Practices Covered:

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

5.2 - Reasons abstractly and quantitatively.

5.4 - Models with mathematics.

5.5 - Uses appropriate tools strategically.

5.6 - Attends to precision.

5.7 - 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 5.5 - Contributes ideas and listen to the ideas of others in cooperative problem-solving.

PE 5.6 - Accommodates differences in others' physical abilities in small-group activities.

GEOMETRY 4 RECORDING SHEET