M4THS 'N' MOVEMENT

English Curriculum Edition
www.mathsnmovement.co.uk

Rachel McCann

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

This edition of Maths 'N' Movement is designed specifically for English Schools and combines the National Mathematics Programmes of Study with the Physical Education Programmes of Study. With programs available from Kindergarten to Year 6 it provides a fun way to effectively engage students in maths learning across all 17 strands of the Maths Curriculum.

Maths 'N' Movement increases both on task student behaviour and fitness by combining Maths with the key PD/H/PE topics of fundamental movement skills, co-operation, game play, safety, nutrition and acceptance of consequences for one's actions.

Designed to get more students, more active, more often, Maths '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 even realise they are working so 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.mathsnmovement.co.uk.

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MATHS 'N' MOVEMENT

LEVEL 5

GRADE 4

TABLE OF CONTENTS

English Curriculum Edition

LEVEL 5 Grade 5

WHOLE NUMBER

In this Maths 'N' Movement activity students will apply place value to order and represent numbers of up to five digits.

ACTIVITY

1. In teams of 5, students line up 5 metres from their team's pile of Base 10 blocks.
2. When a number from 1 to 9999 is called the first student in each team races, using the given movement, to grab that many blocks from their pile.
3. When the first team member returns and their blocks have been checked by their team members they place their pieces into their hula hoop.
4. Each time a student returns with their blocks they are recorded on the team's Whole Number Recording Sheet and a running total recorded.
5. Once every team member has collected their blocks the running total for the round on each team's Whole Number Recording Sheet should match the total of all the blocks in their team's hula hoop.

Equipment Required:

- A hula hoop per team
- A selection of Base 10 Blocks - flats, longs and ones per team.
- A Whole Number Recording Sheet and pencil per team.

Notes:

Base 10 blocks are common in most schools but if you do not have them you can use the printable templates available at MathsNMovement.com.au or use headless match sticks or cut straws bundled with an elastic band into tens and then ten tens into hundreds.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate symbols to represent mathematical ideas.

Addition - Uses strategies for addition as they add up the growing number of their team's MAB blocks.

PD/H/PE Outcomes Covered:

Active Lifestyle - Discusses the relationship between regular physical activity and health.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

WHOLE NUMBER RECORDING SHEET

Round 1	Number Called	Previous Total	New Total
Team Member 1			
Team Member 2			
Team Member 3			
Team Member 4			
Team Member 5			

Round 2	Number Called	Previous Total	New Total
Team Member 1			
Team Member 2			
Team Member 3			
Team Member 4			
Team Member 5			

Round 3	Number Called	Previous Total	New Total
Team Member 1			
Team Member 2			
Team Member 3			
Team Member 4			
Team Member 5			

Round 4	Number Called	Previous Total	New Total
Team Member 1			
Team Member 2			
Team Member 3			
Team Member 4			
Team Member 5			

LEVEL 5
Grade 5

ADDITION

In this Maths 'N' Movement activity students will use mental and written strategies for addition involving 2, 3, 4 and 5 digit numbers.

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 Addition Recording Sheet with 150 points for a successful shot from the nearest hula hoop, 250 points if shot from the middle hula hoop and 350 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:

- A basketball and basketball hoop per team.
- Three hula hoops per team.
- A tape measure per team.
- An Addition 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, 1 as the 250 point bucket with a line 2 metres away and 1 as the 350 point bucket with a line 3 metres away and students choose which they will line up for rather than all waiting to shoot into 1 bucket.

Additional Maths Outcomes Covered:

Chance - Describes and compares chance events by explaining their choice of hoop based on the likelihood of their shot getting in.

Length – Estimates and measures the distance in metres and centimetres of the 1, 2 and 3 point hoops.

Angles – Identifies and describes the angle needed to get the ball in from each hoop.

PD/H/PE Outcomes Covered:

Active Lifestyle - Discusses the relationship between regular physical activity and health.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of movement in applying two handed throwing skills.

Games & Sport – Participates and uses equipment in a modified basketball game.

ADDITION 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
Grade 5

SUBTRACTION

In this Maths 'N' Movement activity students will use mental and written strategies for subtraction involving 2, 3, 4 and 5 digit numbers.

ACTIVITY

1. In teams of 4, students predict on their Subtraction Recording Sheet how far they will be able to long jump into a long jump sand 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 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 Subtraction 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.

Additional Maths Outcomes Covered:

Working Mathematically - Reasoning - Checks the accuracy of a statement and explains the reasoning used.

Chance - Describes and compares chance events by explaining their predicted jump length.

Length - Measures, records, compares and estimates lengths in metres, centimetres and millimetres.

Angles – Identifies the angle which will produce the furthest jump.

PD/H/PE Outcomes Covered:

Active Lifestyle - Discusses the relationship between regular physical activity and health.

Communicating – Uses a variety of ways to communicate with and within a group.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of movement in long jump.

Games & Sport – Games - Uses a long jump pit appropriately.

SUBTRACTION 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
Grade 5

MULTIPLICATION & DIVISION

In this Maths 'N' Movement activity students will use mental and informal written strategies for multiplication and division.

ACTIVITY

1. Students form a large circle and are each given a Multiplication & Division Number Card from 2 to 15.

2. When a number up to 30 is called students who have a factor of that number race to the middle of the circle and find their partner as quickly as they can.

3. When students find their partner they join hands and hold up their cards. So if '20' is called students with a '2', '10', '4' and '5' run to the middle and students with '2' and '10' join hands and hold up their cards and the students with '4' and '5' join hands and hold up their cards. There can be multiple pairs for each number if numbers have been repeated to accommodate large classes.

Equipment Required:

- A Multiplication & Division Number Card from 2 to 15 per student.

Notes:

As the student/s with the '2' card will have more chance to move than any other student it is advisable to swap the cards after ever few rounds. By swapping students will also be able to master more of their multiplication tables.

Additional Maths Outcomes Covered:

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

Patterns – Uses the properties of odd and even numbers to realise why the student/s with the 2 card will get the most turns.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills probably a sprint run.

MULTIPLICATION & DIVISION NUMBER CARDS

2	9
3	10
4	11
5	12
6	13
7	14
8	15

LEVEL 5 Grade 5

FRACTIONS & DECIMALS

In this Maths 'N' Movement activity students will represent, model and compare commonly used fractions and decimals.

ACTIVITY

1. In teams of 4, students stand next to their hula hoop 5 metres from their pile of Base 10 blocks.
2. When a number up to 1000 is called the first student in each team races, using the given movement, to collect that many Base 10 blocks.
3. The first student places the blocks in their team's hula hoop and rolls the Fractions & Decimals die to see how they must attempt to divide their blocks.
4. The student records the blocks collected, the fraction or decimal rolled and whether the number of blocks could be divided evenly on their team's Fractions & Decimals Recording Sheet.
5. When correct, the first team member returns the Base 10 blocks and the remaining students take it in turn to race, collect and divide blocks.

Equipment Required:

- A hula hoop per team.
- A selection of Base 10 blocks per team - See Addition .
- A Fractions & Decimals die.
- A Fraction & Decimal Recording Sheet and pencil per team.

Notes:

If you do not wish to make a Fractions & Decimals die a regular die could have white stickers placed over the numbers and the fractions ½, 1/3 and ¼ and the decimals 0.5, 0.33 and 0.25 written on the stickers to create a fractions & decimals die.

Additional Maths Outcomes Covered:

Problem Solving - Selects and uses appropriate strategies to solve problems.

Whole Number - Applies place value to order, read and represent numbers of up to five digits.

Addition - Uses strategies for addition to find the total of each group created when the blocks are divided.

Multiplication & Division - Uses strategies for multiplication & division to create equal groups.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

Problem Solving – Uses a range of problem solving strategies.

FRACTIONS & DECIMALS RECORDING SHEET

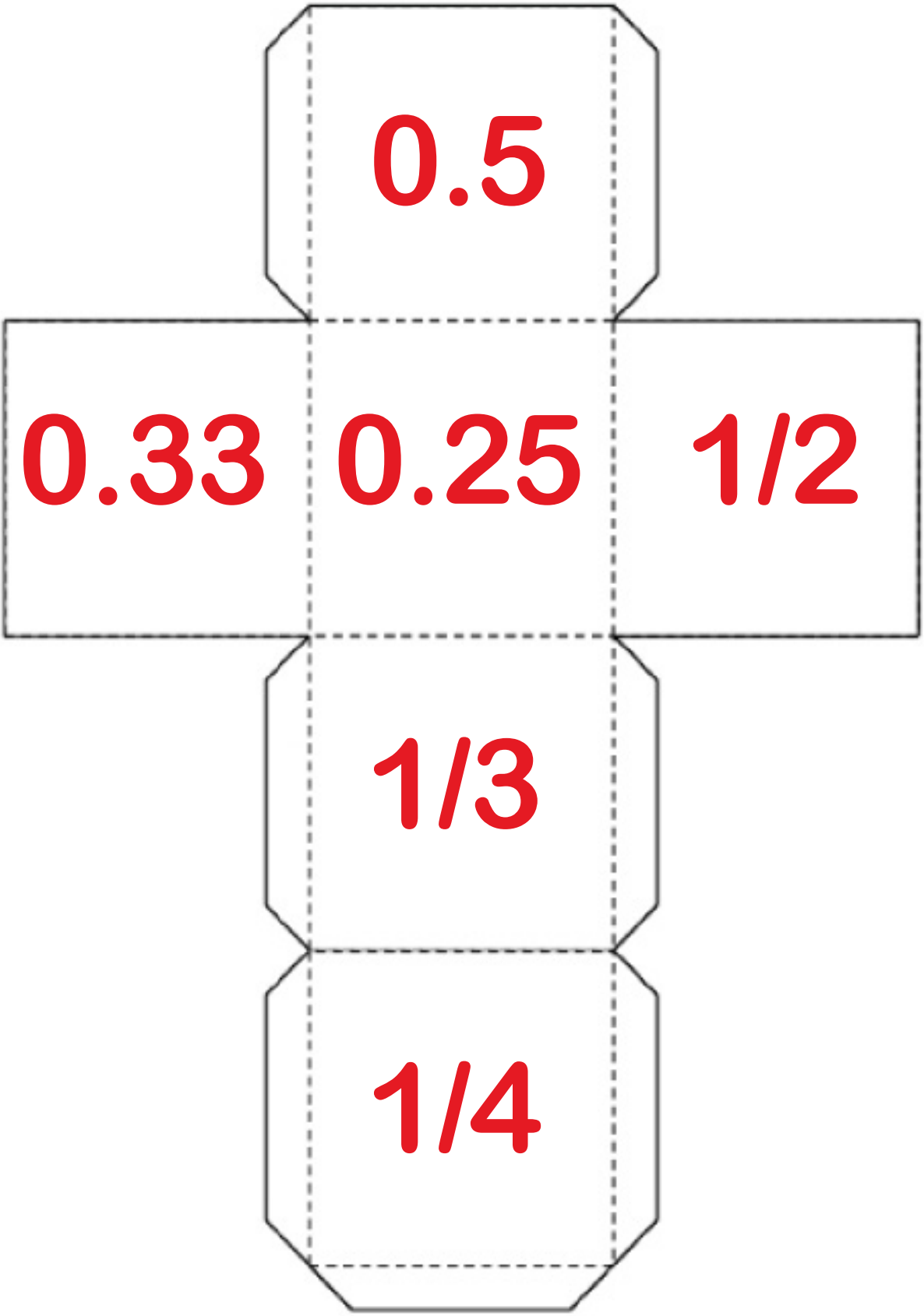
Round 1	Number Called	Fraction or Decimal Rolled	Result
Student 1			
Student 2			
Student 3			
Student 4			

Round 2	Number Called	Fraction or Decimal Rolled	Result
Student 1			
Student 2			
Student 3			
Student 4			

Round 3	Number Called	Fraction or Decimal Rolled	Result
Student 1			
Student 2			
Student 3			
Student 4			

Round 4	Number Called	Fraction or Decimal Rolled	Result
Student 1			
Student 2			
Student 3			
Student 4			

FRACTIONS & DECIMALS - DIE



LEVEL 5
Grade 5

CHANCE

In this Maths 'N' Movement activity students will describe and compare chance events in social and experimental contexts.

ACTIVITY

1. In teams of 4 or 5, students stand with their Chance Recording Sheet, 5 metres from their pair of regular dice.

2. The first student in each team predicts on their Chance Recording Sheet what they think they will roll for each dice then, using the given movement, they race to their dice and roll to produce 2 numbers.

3. Students return to their team and their Chance Recording Sheet and record their actual numbers rolled and compare these to their prediction. Each team member has a turn at predicting and rolling.

4. When completed teams compare their results to see which numbers were predicted most often and rolled most often and if these are the same numbers.

Equipment Required:

- A pair of regular dice per team.
- A Chance Recording Sheet and pencil per team.

Notes:

If you have enough of them a polyhedron (10 sided) die could be used in place of one or both regular die so students have more numbers from which to choose. As a follow up it would be interesting to see if the student's predictions changed for the second round based on the results of the first round.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate terminology and symbols to represent mathematical ideas.

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

Working Mathematically - Checks the accuracy of a statement and explains the reasoning used.

Multiplication & Division - Uses strategies for multiplication & division to identify that the number with the highest number of factors will occur most often.

Patterns - Generalises properties of number patterns created from rolling dice.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

Problem Solving – Uses a range of problem solving strategies.

CHANCE RECORDING SHEET

Round 1	Predicted 1st Number	Predicted 2nd Number	Actual 1st Number	Actual 2nd Number
Student 1: _____				
Student 2: _____				
Student 3: _____				
Student 4: _____				
Student 5: _____				

Round 2	Predicted 1st Number	Predicted 2nd Number	Actual 1st Number	Actual 2nd Number
Student 1: _____				
Student 2: _____				
Student 3: _____				
Student 4: _____				
Student 5: _____				

Number Rolled Vs Number of Times it was Rolled

Number Rolled																			
6																			
5																			
4																			
3																			
2																			
1																			
X	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Number of Times a Number was Rolled

Which number was rolled most often? _____

Which number was predicted to be rolled most often? _____

Which number was rolled the least number of times? _____

Which number was predicted to be rolled the least number of time? _____

Was any number rolled a median number of times? _____

LEVEL 5
Grade 5

PATTERNS & ALGEBRA

In this Maths 'N' Movement activity students will generalise properties of odd and even numbers, generate number patterns and complete simple number sentences by calculating missing values.

ACTIVITY

1. In teams of 4 or 5, students stand 5 metres from their Patterns & Algebra Recording Sheet and pencil.

2. All students are shown the same 3 number cards from the 30 Patterns & Algebra number cards.

3. When a team works out the pattern between the 3 numbers one team member from the group races, using the given movement, to their team's recording sheet and fills in the next 4 numbers in that series.

4. When correct the student returns to their group and another student is the scribe for the next round.

Equipment Required:

- A Patterns & Algebra Recording Sheet and pencil per team.
- A set of Patterns & Algebra Number Cards from 1 to 30.

Notes:

Instead of being shown the first 3 numbers students could be shown the 1 st number in each series and the rule and have to create the next 4 numbers. For groups of very diverse ability it is advisable to show a series of numbers per group so less able students can receive simpler rules and more able students can be challenged.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate terminology to describe and symbols to represent mathematical ideas.

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

Addition -Uses strategies for addition to work out the algebraic rule.

Subtraction - Uses strategies for subtraction to work out the algebraic rule.

Multiplication & Division - Uses strategies for multiplication & division to work out the algebraic rule.

PD/H/PE Outcomes Covered:

Active Lifestyle - Discusses the relationship between regular physical activity and health.

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

Problem Solving – Uses a range of problem solving strategies.

PATTERNS & ALGEBRA RECORDING SHEET

Round 1	Numbers shown	Next 4 Numbers In The Series
Student 1:	_____ _____ _____	_____ _____ _____ _____
Student 2:	_____ _____ _____	_____ _____ _____ _____
Student 3:	_____ _____ _____	_____ _____ _____ _____
Student 4:	_____ _____ _____	_____ _____ _____ _____
Student 5:	_____ _____ _____	_____ _____ _____ _____

Round 2	Numbers shown	Next 4 Numbers In The Series
Student 1:	_____ _____ _____	_____ _____ _____ _____
Student 2:	_____ _____ _____	_____ _____ _____ _____
Student 3:	_____ _____ _____	_____ _____ _____ _____
Student 4:	_____ _____ _____	_____ _____ _____ _____
Student 5:	_____ _____ _____	_____ _____ _____ _____

Round 3	Numbers shown	Next 4 Numbers In The Series
Student 1:	_____ _____ _____	_____ _____ _____ _____
Student 2:	_____ _____ _____	_____ _____ _____ _____
Student 3:	_____ _____ _____	_____ _____ _____ _____
Student 4:	_____ _____ _____	_____ _____ _____ _____
Student 5:	_____ _____ _____	_____ _____ _____ _____

PATTERNS & ALGEBRA NUMBER CARDS

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

LEVEL 5 Grade 5

DATA

In this Maths 'N' Movement activity students will select appropriate methods to collect data, construct, compare, interpret and evaluate data displays including tables and column graphs.

ACTIVITY

1. As a class students measure a distance of 10 metres.

2. Each student predicts of their Data Recording Sheet how many leaps it will take for them to cover the 10 metres.

3. Students cover the 10 metres distance in the least number of leaps possible and record their number of leaps and that of 10 of their classmates on their Data Recording Sheet.

4. Students find the average number of leaps of the students they selected, the person they chose who covered the distance in the least number of leaps, the student who covered the distance in the most number of leaps and the average distance of each of their individual leaps.

Equipment Required:

- A tape measure.
- A Data Recording Sheet and pencil per student.

Notes:

Although 10 metres and leaping is suggested for this activity the length could be shortened or lengthened and the movement could be changed to side gallops or 2 feet jumps. Similarly you could test these movements against a leap and see which allows students to cover the distance in the least number of moves.

Additional Maths Outcomes Covered:

Working Mathematically - Reasoning - Checks the accuracy of a statement and explains the reasoning used.

Whole Number - Applies place value to order student's leaps.

Addition - Uses strategies for addition to answer the data questions.

Multiplication & Division - Uses and informal written strategies for multiplication & division to answer the data questions..

Length – Uses a tape measure to measure 10 metres.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Moving/FMS – Displays a focus on quality of movement when leaping.

Safe Living – Discusses how safe practices promote personal wellbeing when moving within a large group in close confines.

DATA RECORDING SHEET

Number of Leaps	Leaps Students Required To Cover 10m										
20											
19											
18											
17											
16											
15											
14											
13											
12											
11											
10											
9											
8											
7											
6											
5											
X	You	Student	Student	Student	Student	Student	Student	Student	Student	Student	Student

Least number of leaps a student required: _____

Most number of leaps a student required: _____

Average number of leaps all students required: _____

Average length of each of your leaps: _____ (10m ÷ Number of Leaps)

LEVEL 5
Grade 5

LENGTH

In this Maths 'N' Movement activity students will estimate, measure and record temperatures.

ACTIVITY

1. In teams of 4 or 5, students stand 5 metres from their container.

2. The first student in each team races, using the given movement, to their jug and tests the temperature with their finger. Students return to their teams and predict on their Length Recording Sheet the temperature of the water in their container.

3. Once recorded, students race back to their container and use their team's thermometer to see how accurate they were.

4. Additional hot or cold water is placed in each teams container and the next team member must predict the adjusted temperature before racing to check to see how accurate they were.

Equipment Required:

- A jug of hot and cold water.
- A large container per team.
- A thermometer per team.
- A Length Recording Sheet and pencil per team.

Notes:

This activity has the potential to be dangerous if boiling water is used. The water need not be at burning temperature and in fact students could be shown the temperature of the hot water and cold water to help them to predict the temperature of the mixed water.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate symbols to represent temperature.

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to work out the temperature of the water.

Addition - Uses strategies for addition to work out the temperature if hot water is added.

Subtraction - Uses strategies for subtraction if cold water is added.

PD/H/PE Outcomes Covered:

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

Safe Living – Discusses how safe practices promote personal wellbeing when using boiling water or treating a burn.

LENGTH RECORDING SHEET

Student 1: _____	
Hot / Cold Water Added	
Estimated Temperature	Actual Temperature

Student 2: _____	
Hot / Cold Water Added	
Estimated Temperature	Actual Temperature

Student 3: _____	
Hot / Cold Water Added	
Estimated Temperature	Actual Temperature

Student 4: _____	
Hot / Cold Water Added	
Estimated Temperature	Actual Temperature

Student 5: _____	
Hot / Cold Water Added	
Estimated Temperature	Actual Temperature

LEVEL 5
Grade 5

AREA

In this Maths 'N' Movement activity students will measure, record, compare and estimate areas using square metres.

ACTIVITY

1. In teams of 4, students use a tape measure to draw 4, 1m x 1m boxes, in a 2 by 2 formation.

2. Teams find the total area of the 4 boxes, record it on their Area Recording Sheet and attempt to play handball on this court.

3. As it is obviously too small students join the squares and add 2 more to create 4 x 2m x 2m boxes.

4. Teams again find and record the total area of the 4 boxes and play handball.

5. As the boxes will again be too small teams join the boxes and measure 4 x 3m x 3m boxes which will be the right size. Students find the overall area and play handball.

6. If desired students can draw 4 x 4m x 4m boxes, find the area and play handball again but these will be too big.

Equipment Required:

- Chalk and concrete.
- A tennis ball per team.
- A tape measure per team.
- An Area Recording Sheet and pencil per team.

Notes:

Once the handball courts are drawn the whole class will have the chance to play handball simultaneously and could use this as an opportunity to graph their results in the game. If there are an odd number of students teams of 5 can have 4 students playing and 1 reserve who plays when the student in 4th position is out.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate terminology to describe mathematical ideas.

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

Multiplication & Division - Uses strategies for multiplication & division to create 2 x 2m squares from 4 x 1m squares.

Length - Measures, records, compares and estimates lengths to create the square's perimeters.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of movement especially hand eye coordination of bouncing and catching.

Problem Solving – Uses a range of problem solving strategies.

Games & Sport – Participates uses equipment to play handball.

AREA RECORDING SHEET

1m x 1m		Total Area of the 4 squares:_____ Findings when playing - the boxes were: too small / just right / too big.

2m x 2m		Total Area of the 4 squares:_____ Findings when playing - the boxes were: too small / just right / too big.

3m x 3m		Total Area of the 4 squares:_____ Findings when playing - the boxes were: too small / just right / too big.

4m x 4m		Total Area of the 4 squares:_____ Findings when playing - the boxes were: too small / just right / too big.

LEVEL 5 Grade 5

VOLUME & CAPACITY

In this Maths 'N' Movement activity students will measure, record, compare and estimate volumes and capacities using litres, millilitres and cubic centimetres.

ACTIVITY

1. In teams of 4, students calculate how many milliliters there are in 6 cups of water (the average recommended daily intake for children) and record this on their Volume & Capacity Recording Sheet.

2. Each student then estimates the capacity of their water bottle in millilitres.

3. When all students have estimated, the first student in each team races, using the given movement, to their bucket 5 metres away and uses the measuring cup to fill their drink bottle to see how many millilitres their drink bottle holds.

4. Each student fills their bottle and uses this to calculate how many times they need to drain their drink bottle to consume 6 cups of water per day.

Equipment Required:

- A bucket of water per team.
- Student's drink bottles.
- A measuring cup per team.
- A Volume & Capacity Recording Sheet and pencil per team.

Notes:

It is important that student's drink bottles are filled with drinking water at the conclusion of this task so they have access to fresh water when they require it. It is also a good time to discuss other methods for consuming water such as consuming high water content foods such as celery, lettuce or watermelon.

Additional Maths Outcomes Covered:

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

Addition - Uses strategies for addition to calculate the number of cups in their drink bottle.

Multiplication & Division - Uses strategies for multiplication & division to calculate the number of cups in their drink bottle.

Fractions & Decimals – Represents commonly used fractions as each water bottle may hold both full and part cups of water.

Chance - Describes and compares chance events by predicting the total content of their water bottle.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Moving/FMS – Displays a focus on quality of movement in applying movement skills to a variety of familiar situations.

Problem Solving – Uses a range of problem solving strategies.

Personal Health Choices – Describes the factors influencing personal health choices and water consumption.

VOLUME & CAPACITY RECORDING SHEET

Millilitres in 1 cup of water: _____ Millilitres in 6 cups of water: _____

Student 1: _____	
Estimated Water Bottle Capacity	Millilitres
Actual Water Bottle Capacity	Millilitres
Number of times it needs to be drained per day	

Student 2: _____	
Estimated Water Bottle Capacity	Millilitres
Actual Water Bottle Capacity	Millilitres
Number of times it needs to be drained per day	

Student 3: _____	
Estimated Water Bottle Capacity	Millilitres
Actual Water Bottle Capacity	Millilitres
Number of times it needs to be drained per day	

Student 4: _____	
Estimated Water Bottle Capacity	Millilitres
Actual Water Bottle Capacity	Millilitres
Number of times it needs to be drained per day	

LEVEL 5 Grade 5

MASS

In this Maths 'N' Movement activity students will measure, record, compare and estimate the mass of objects using kilograms and grams.

ACTIVITY

1. In teams of 4, students stand with their hula hoop of items and work together to estimate in gram and kilograms on their Mass 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 the remaining students take turns racing, weighing and recording the mass of their item on their team's Recording Sheet.

4. Once all the 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.
- 2 plastic bags per team.
- A hula hoop containing 8 items per team.
- A Mass 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.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate terminology to describe mathematical ideas.

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

Working Mathematically - Reasoning - Checks the accuracy of a statement and explains the reasoning used.

Addition - Uses strategies for addition to work out the contents of each bag.

Subtraction - Uses strategies for subtraction to work out how much more can be packed into each bag.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

Problem Solving – Uses a range of problem solving strategies.

MASS RECORDING SHEET

Item	Estimated Weight	Actual Weight
Number of bags required:		

Contents of Each Bag	
Bag 1:	Bag 3:
Bag 2:	Bag 4:

LEVEL 5 Grade 5

TIME

In this Maths 'N' Movement activity students will read and record time in one-minute intervals and convert between hours, minutes and seconds.

ACTIVITY

1. In teams of 4 or 5, students line up 5 metres from their Time Recording Sheet and pencil.

2. The first student in each team is told a time in seconds which must be converted to minutes or minutes and seconds ie. 75 seconds is 1 minute and 15 seconds.

3. Students race, using the given movement, to their team's Time Record Sheet and record the given time and the converted time.

4. The first students return to their teams and remaining students take it in turn to receive a time to convert and the units into which they are converting it ie. 80 minutes is 1 hour and 20 minutes.

Equipment Required:

- A Time Recording Sheet and pencil per team.

Notes:

Some students will experience a lot of difficulty converting time as it is base 6 not base 10. For these students it is best to stick to more common time conversions such as 90seconds is 1 ½ minutes. If this activity is repeated over a number of weeks students will improve this skill and be able to tackle harder conversions.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate terminology to describe mathematical ideas.

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

Addition - Uses strategies for addition to convert between times.

Subtraction - Uses strategies for subtraction to convert between times.

Fractions & Decimals – Represents commonly used fractions ie 75 seconds is recorded as 1¼ minutes.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

Problem Solving – Uses a range of problem solving strategies.

TIME RECORDING SHEET

Round 1	Time To Convert	Time Converted To
Student 1: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs
Student 2: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs
Student 3: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs
Student 4: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs
Student 5: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs

Round 2	Time To Convert	Time Converted To
Student 1: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs
Student 2: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs
Student 3: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs
Student 4: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs
Student 5: _____	_____ hours / mins : _____ mins / secs	_____ hours / mins : _____ mins / secs

LEVEL 5
Grade 5

3D SPACE

In this Maths 'N' Movement activity students will make, compare, describe and name 3 Dimensional objects, including prisms, pyramids, cylinders, cones and spheres.

ACTIVITY

1. In teams of 4 or 5, students line up 5 metres from their 3D Space Recording Sheet and are told one property of a 3D shape.

2. If the team can identify the item, one student races,
using the given movement, to their 3D Space Recording Sheet and writes the name of the shape.

3. If only 1 piece of information is needed 3 points are scored. If teams can not identify the shape more information is given for a possible 2 points. If 3 pieces of information are required to identify the shape only 1 point is scored.

4. A team can only answer once and no points are scored for incorrect shapes or more than 3 pieces of information being required.

Equipment Required:

- A solid cube, rectangular prism, square or triangular based pyramid, cylinder, cone for students to see.
- A 3D Space Recording Sheet and pencil per team.

Notes:

As students become more proficient at this activity they will need fewer pieces of information to identify each shape and will not need to see the shapes to be able to identify them.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate terminology to describe mathematical shapes.

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

Working Mathematically - Reasoning - Checks the accuracy of a statement and explains the reasoning used.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

Problem Solving – Uses a range of problem solving strategies.

3D SPACE RECORDING SHEET

Attribute/s Given	3D Shape Chosen	Score
Total Score:		

LEVEL 5
Grade 5

2D SPACE

In this Maths 'N' Movement activity students will identify, create and sketch 2 Dimensional shapes including special quadrilaterals and describe their features.

ACTIVITY

1. In teams of 3 or 4, students line up 5 metres from their large ball of plasticine, collection of drinking straws and 2D Space Recording Sheet.

2. Each team is told the number of sides of the shape they will be making.

3. The first student in each team races, using the given movement, to their straws and plasticine and creates a shape with the given number of sides.

4. When the first student creates the correct shape they name and sketch their shape on their team's 2D Space Recording Sheet before dismantling their straws ready for the next student.

Equipment Required:

- A ball of plasticine per team.
- A collection of plastic straws of various sizes per team.
- A 2D Shape Recording Sheet and pencil per team.

Notes:

It is important to stress to students that 2D shapes are drawn while 3D shapes are solid but for this activity they are creating a 3D representation of a 2D shape which they are then converting back into 2D when they draw it.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate symbols to represent mathematical ideas.

Addition - Uses addition to create a correctly sided shape.

Subtraction - Uses mental strategies for subtraction to create a correctly sided shape.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

2D SPACE RECORDING SHEET

Student	Number of Sides	Shape	Picture
_____	☐	_____	
_____	☐	_____	
_____	☐	_____	
_____	☐	_____	
_____	☐	_____	

LEVEL 5
Grade 5

ANGLES

In this Maths 'N' Movement activity students will identify, describe, compare and classify angles.

ACTIVITY

1. In teams of 4, students stand 5 metres from their team's Angles 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 Angle 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:

- An Angle 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.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate terminology to describe and symbols to represent mathematical ideas.

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Moving/FMS – Displays a focus on quality of the chosen movement skills.

Problem Solving – Uses a range of problem solving strategies.

ANGLE CARDS

Acute	Right Angle	Obtuse

LEVEL 5
Grade 5

POSITION

In this Maths 'N' Movement activity students will use simple maps and grids to represent position.

ACTIVITY

1. In pairs, students sit with their Position Orchard Game Board, 5 metres from their apple markers.

2. Each student marks on their own Position Orchard Game Board where they will place their apples. They can only be placed vertically or horizontally - not diagonally.

3. When their apples have been placed students take it in turns to ask each other, using co-ordinates, if they have an apple at a given locations.

4. When part of an apple is picked the student who picked the apple must races to get an apple marker to record the position on their Game Board.

5. The first student to pick all of their partners red apples is the winner.

Equipment Required:

- A Position Orchard Game Board and pencil per pair.
- Apple markers per student centrally located at least 5 metres from any pair.

Notes:

This is the most sedentary of the activities in this level but by having students collect the red counters to mark their apples they will be getting up and down and moving a lot more than if the markers were on their desk for the entire activity. Obviously the further away the counters the more movement students will perform. There are enough apple markers for 7 students on the Apple Marker page.

Additional Maths Outcomes Covered:

Working Mathematically - Communicating - Uses appropriate terminology to describe mathematical ideas.

Working Mathematically - Problem Solving - Selects and uses appropriate strategies to solve problems.

Subtraction - Uses strategies for subtraction to work out how many co-ordinates are left to pick an apple.

PD/H/PE Outcomes Covered:

Communicating – Uses a variety of ways to communicate with and within a group.

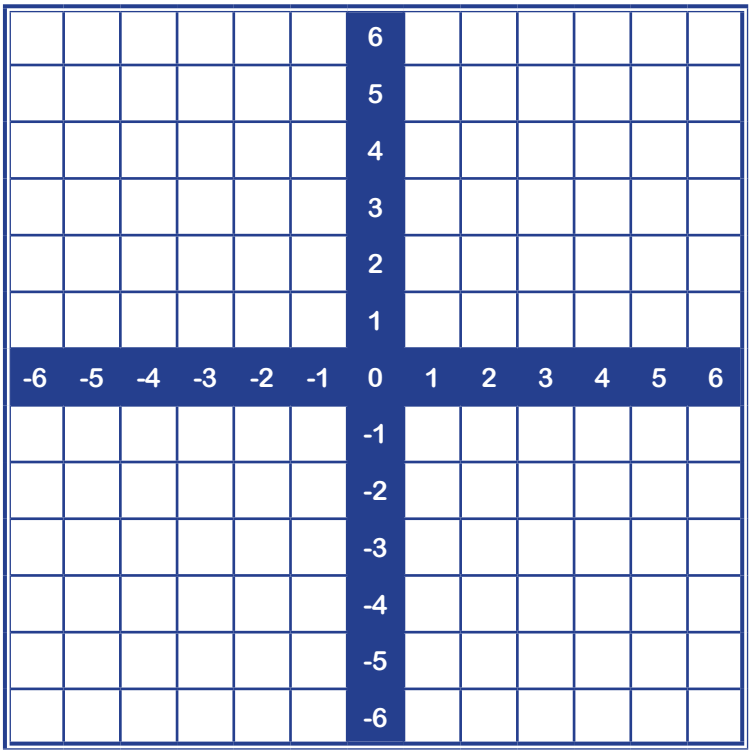
Decision Making - Makes decisions as an individual and as a group member.

Interacting - Makes positive contributions in group activities.

Problem Solving – Uses a range of problem solving strategies.

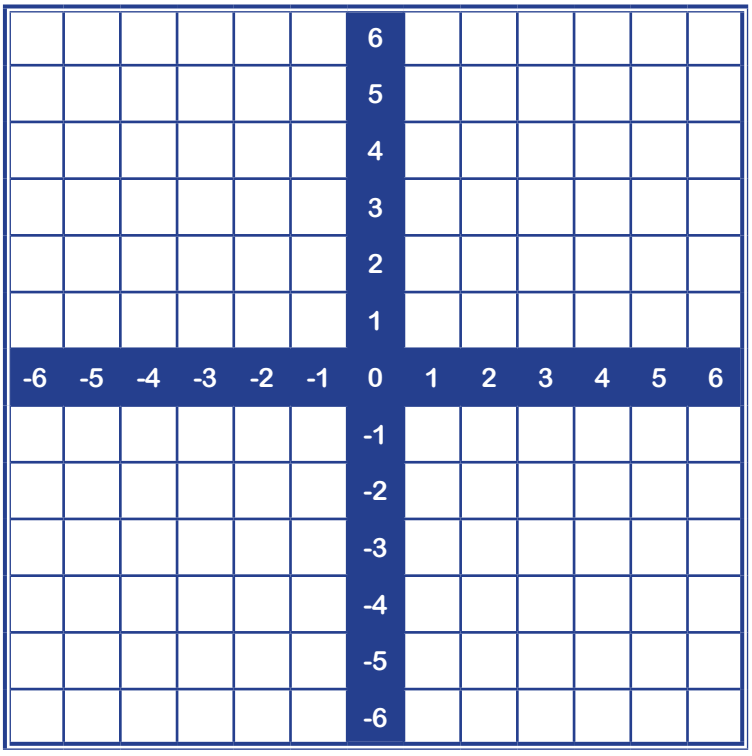
POSITION ORCHARD GAME BOARDS

Your Apples Go On This Top Board



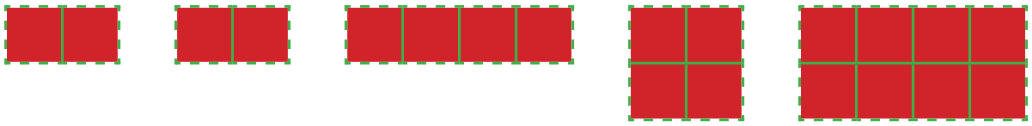
Your Apples - 2 Small, 2 Medium and 1 Large

Your Attempts To Pick Their Apples Go On This Board

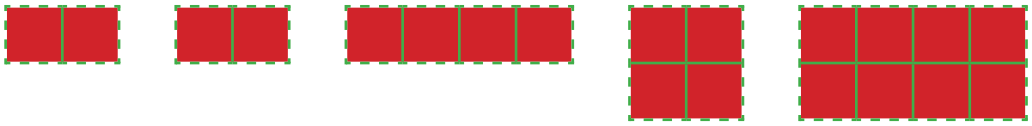


POSITION ORCHARD APPLE MARKERS

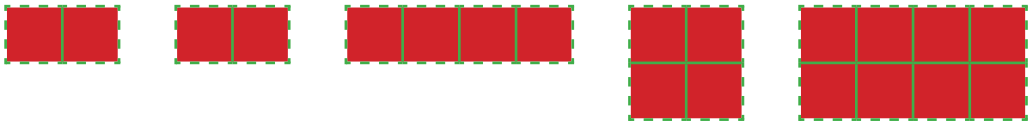
Apple Markers for 1 Student



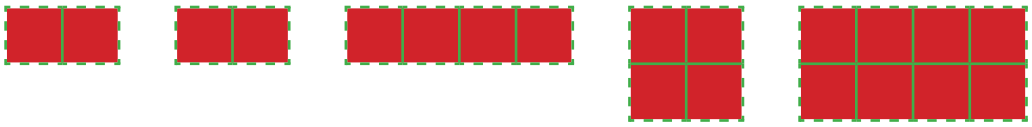
Apple Markers for 1 Student



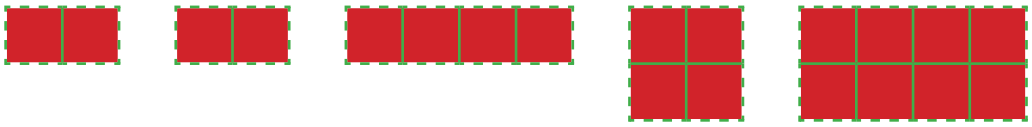
Apple Markers for 1 Student



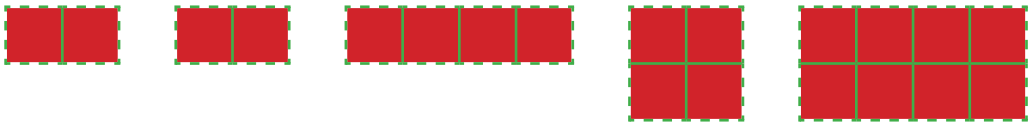
Apple Markers for 1 Student



Apple Markers for 1 Student



Apple Markers for 1 Student



Apple Markers for 1 Student