

## Thinking While Moving (Integrating Physical Activity into Maths)

This workshop targets ways teachers can integrate physical activity into their classroom teaching of mathematics. Utilising physical activity concepts, participants will acquire teaching ideas, resources and class management skills to engage students more effectively in mathematics.

## Thinking While Moving

### Focus (Overview):

This workshop targets teachers interested in integrating physical activity into their classroom teaching of mathematics. Teachers will acquire research-based teaching ideas, resources and practice classroom management skills to engage students more effectively in mathematics by including physical activity in the context of maths lessons.

## CLUMPS

### Strand/s:

- Movement Skill & Performance
- Healthy Safe & Active Lifestyles

### PDHPE Syllabus Outcomes:

#### Stage 1

#### **Movement Skill & Performance**

**PD1-4** - performs movement skills in a variety of sequences and situations

**PD1-5** - proposes a range of alternatives to solve movement challenges through participation in a range of activities

**PD1-8** - participates in a range of opportunities that promote physical activity

#### **Healthy Safe & Active**

**PD1-10** - describes and practises interpersonal skills to promote inclusion to make themselves and others feel they belong

### Key Inquiry Questions (KIQ):

#### Stage 1

#### **Movement Skill & Performance**

1. What are the different ways we can move our body?
2. How can we move and improve our involvement in physical activity?
3. How can we participate safely and fairly during physical activity?

#### **Healthy Safe & Active**

4. What influences my decisions and actions to be healthy, safe and physically active?

Content:

**Stage 1**

**Movement Skill & Performance**

**KIQ 1: What are the different ways we can move our body?**

- **Demonstrate movement skills and movement sequences in a variety of contexts, for example:**
  - perform locomotor skills using different body parts to travel in different directions, eg walking, running, galloping, hopping, sliding, skipping, jumping **M** 🏃🏃🏃

**KIQ 2: How can we move and improve our involvement in physical activity?**

- **Propose a range of alternatives and test their effectiveness when solving movement challenges, for example: (ACPMP031)**
  - select and implement different movement skills and concepts to be successful in a game and/or physical activity **S M** 🏃🏃🏃🏃
  - persist with more difficult movements in a range of physical activities regardless of success **S M** 🏃
  - reflect on performance and identify and demonstrate ways to perform a skill more successfully **S M** 🏃🏃
  - seek and respond to feedback from peers or teachers on their performance **S I M** 🏃🏃
- **Use strategies to work in group situations when participating in physical activities, for example: (ACPMP030)**
  - communicate positively when working in groups to encourage others and promote inclusion **I M** 🏃
  - describe and/or demonstrate how to include others in physical activity **S I M** 🏃🏃
  - suggest and trial how an activity or game can be changed so that everyone can be involved **I M** 🏃

**KIQ 3: How can we participate safely and fairly during physical activity?**

- **Identify rules and fair play when participating in physical activities, for example: (ACPMP032)**
  - explain why rules are needed in games and physical activities **I M** 🏃⚖️
  - demonstrate turn-taking when participating in physical activities and minor games **I M** 🏃
  - explain how rules contribute to personal safety and fair play and apply them in group activities **I M** ⚖️🏃🏃
  - communicate how and when they and others demonstrate safety and fair play **I M** ⚖️🏃🏃
- **Create and participate in games with and without equipment, for example: (ACPMP027)**
  - use stimuli, eg words to create and participate in games **S M** 🏃🏃🏃

Suggested Links to other Key Learning Areas:

Mathematics

**Success Criteria:**

- Shows understanding of the language used in games by responding to verbal and nonverbal directions, e.g. run, hop, skip.
- Demonstrates correct technique.
- Enjoys regular participation in worthwhile physical activity.

Learning Experience	Organisation and Resources	Teaching Tips / Strategies
<p>Students are to complete a locomotor skill, with the whole class performing the locomotor skill around the space given. Locomotor skills that can be used include:</p> <ul style="list-style-type: none"> <li>▪ Running</li> <li>▪ Hopping</li> <li>▪ Skipping</li> <li>▪ Side gallop</li> </ul> <p>Teacher asks students a maths question, the students then have to work out the answer to the question but form groups quickly in the number that is remaining.</p> <p><b>Variation:</b> Place numbered cones 1-20 around the grid. The teacher calls out an instruction such as "Run to a number that is greater than 6", "Skip to a multiple of 3," "Crab walk to an odd number", "Skip to a multiple of 3", "jump to a factor of 24".</p>	<p><b>Equipment:</b> Variation Cones numbered 1-20.</p> <p><b>Set Up:</b> Whole class in designated space e.g. Netball court.</p> <p>Time: 5-10 minutes.</p>	<p>Once groups have been established and are correct, students move randomly around the space again but complete a new locomotor activity, then the teacher asks the students the new question. Repeat this step for all of the questions.</p> <p>Correct technique using tips from <a href="#">Get skilled get active</a>.</p> <p><a href="#">Get Skilled Get Active</a></p> <p>Remember to ask children regularly why they went to a particular number.</p>

**Assessment:**

- Observe and respond to student misconception.
- Link to mathematics syllabus.

**How can this activity be differentiated? (Ideas for inclusion)**

Provide students with a variety of questions to suit the needs and abilities in your class, ranging from simple to complex. This enables the students working towards an understanding to still participate in the activity and be engaged whilst also providing revision for the students who need extending.

How can this activity be adapted to:	
Early Stage 1	Example question: Friends of 10 e.g. I have 7 how many more to 10?
Stage 1	Example question: How many sides has a rectangle?
Stage 2	Example question: What is the remainder when I divide 20 by 6?
Stage 3	What is $\frac{3}{8}$ of 40? How many vertices on a triangular prism?

## Rob the Nest

### Strand/s:

- Movement Skill & Performance
- Healthy Safe & Active Lifestyles

### PDHPE Syllabus Outcomes:

#### Stage 1

##### **Movement Skill & Performance**

**PD1-4** - performs movement skills in a variety of sequences and situations

**PD1-5** - proposes a range of alternatives to solve movement challenges through participation in a range of activities **PD1-10** - describes and practises interpersonal skills to promote inclusion to make themselves and others feel they belong

##### **Healthy Safe & Active**

**PD1-8** - participates in a range of opportunities that promote physical activity

### Key Inquiry Questions (KIQ):

#### Stage 1

##### **Movement Skill & Performance**

**KIQ 1:** What are the different ways we can move our body?

**KIQ 2:** How can we move and improve our involvement in physical activity?

**KIQ 3:** How can we participate safely and fairly during physical activity?

##### **Healthy Safe & Active**

**KIQ 4:** How can I be responsible for my own, and others' health, safety and wellbeing?

## Content:

## Stage 1

## Movement Skill &amp; Performance

## KIQ 1: What are the different ways we can move our body?

- **Demonstrate movement skills and movement sequences in a variety of contexts, for example:**
  - perform locomotor skills using different body parts to travel in different directions, eg walking, running, galloping, hopping, sliding, skipping, jumping **M** 🏃🏃🏃

## KIQ 2: How can we move and improve our involvement in physical activity?

- **Propose a range of alternatives and test their effectiveness when solving movement challenges, for example: (ACPMP031)**
  - select and implement different movement skills and concepts to be successful in a game and/or physical activity **S M** 🏃🏃🏃🏃
  - persist with more difficult movements in a range of physical activities regardless of success **S M** 🏃
  - reflect on performance and identify and demonstrate ways to perform a skill more successfully **S M** 🏃🏃
  - seek and respond to feedback from peers or teachers on their performance **S I M** 🏃🏃
- **Use strategies to work in group situations when participating in physical activities, for example: (ACPMP030)**
  - communicate positively when working in groups to encourage others and promote inclusion **I M** 🏃
  - describe and/or demonstrate how to include others in physical activity **S I M** 🏃🏃
  - suggest and trial how an activity or game can be changed so that everyone can be involved **I M** 🏃

## KIQ 3: How can we participate safely and fairly during physical activity?

- **Identify rules and fair play when participating in physical activities, for example: (ACPMP032)**
  - explain why rules are needed in games and physical activities **I M** 🏃⚖️
  - demonstrate turn-taking when participating in physical activities and minor games **I M** 🏃
  - explain how rules contribute to personal safety and fair play and apply them in group activities **I M** ⚖️🏃🏃
  - communicate how and when they and others demonstrate safety and fair play **I M** ⚖️🏃🏃
- **Create and participate in games with and without equipment, for example: (ACPMP027)**
  - use stimuli, eg words to create and participate in games **S M** 🏃🏃🏃

## Healthy Safe &amp; Active

## KIQ 4: How can I be responsible for my own, and others' health, safety and wellbeing?

- **Describe situations where they are required to make healthy and/or safe decisions, for example: (ACPPS018)**
  - identify and participate in opportunities that promote healthy decisions, eg free-time play **M** 🏃🏃🏃
  - identify and participate in opportunities that could encourage themselves and others to be physically active at school, home and in the community, eg outdoor recreation activities, moderate-to-vigorous games and activities **M** 🏃

**Suggested Links to other Key Learning Areas:**

Mathematics

**Success Criteria:**

- Participates in a range of minor games and practices that assist skill development.
- Displays cooperation in group activities, e.g. taking turns.
- Enjoys regular participation in worthwhile physical activity.

Learning Experience	Organisation and Resources	Teaching Tips / Strategies
<p>Split the class into 4 even groups (6-8 groups for large classes).</p> <p>Each group lines up on a corner of a square grid approx. 20m x 20m (or 1/3 netball court)</p> <p>20-30 numbered beanbags are placed in the middle of the grid inside a hoola hoop.</p> <p>On 'go' one player from each team runs to the middle to collect a bean bag.</p> <p>Once the bean bag is placed on the ground at the team corner then the next runner goes.</p>	<p><b>Equipment:</b></p> <p>20 numbered bean bags 5 hoops/game</p> <p><b>Set Up:</b></p> <p>Whole class</p> <p><b>Time:</b> 5-10 minutes.</p>	<p>Have two smaller games to increase PA.</p> <p>* Rules: one runner from each time only, no guard the bean bags, collect only one bean bag at a time, once all bean bags have been taken from the middle then teams may steal from other team's collections, play designated time, team with the most bean bags wins.</p> <p>Change the aim frequently. E.g. total the numbers, add together the even numbers etc.</p>

**Assessment:**

- Observe, listen and respond to student misconceptions.
- Link to mathematics syllabus.

**How can this activity be differentiated? (Ideas for inclusion)**

Provide students with a variety of questions to suit the needs and abilities in your class, ranging from simple to complex. This enables the students working towards an understanding to still participate in the activity and be engaged whilst also providing revision for the students who need extending.



How can this activity be adapted to:	
Early Stage 1	e.g. Place numbers in numerical order, make friends of 10.
Stage 1	e.g. Sort odd and Even numbers.
Stage 2	e.g. Multiply the two highest numbers.
Stage 3	e.g. Make the largest improper fraction $8/3$ .

## Ladder Activities

### Strand/s:

- Movement Skill & Performance
- Healthy Safe & Active Lifestyles

### PDHPE Syllabus Outcomes:

#### Stage 2

#### **Movement Skill & Performance**

**PD2-4** - performs and refines movement skills in a variety of sequences and situations

**PD2-5** - applies strategies to solve movement challenges

**PD2-10** - demonstrates a range of interpersonal skills that build and enhance relationships and promote inclusion in various situations

#### **Healthy Safe & Active**

**PD2-8** - investigates and participates in physical activities to promote the benefits of physical activity on health and wellbeing

### Key Inquiry Questions (KIQ):

#### Stage 2

#### **Movement Skill & Performance**

1. How can we move our bodies to perform skills in different ways?
2. How can we demonstrate our understanding of movement to solve challenges?
3. How can we include others in physical activity?

#### **Healthy Safe & Active**

4. How can I take action to enhance my own and others' health, safety, wellbeing and participation in physical activity?

## Content:

**Stage 2****Movement Skill & Performance****KIQ 1: How can we move our bodies to perform skills in different ways?**

- **Perform and refine movement skills in a variety of movement sequences and contexts, for example:**
  - perform activities where locomotor, object control and stability skills are combined to complete a movement sequence, activity or game, eg swerving, sidestepping, running, dodging, skipping, hopping, jumping, landing, balancing **M** 🍷
  - demonstrate variations of force and speed in movement, eg slow, fast, light, strong, sudden, sustained using the body and objects **M** 🍷
  - perform fundamental movement skills to demonstrate weight transference in different physical activities, eg sidestepping or running backwards **M** 🍷📺
  - participate and use equipment in a variety of games and modified sports **M**
  - adapt movement skills to improve accuracy and control in a variety of contexts **M** 🍷

**KIQ 2: How can we demonstrate our understanding of movement to solve challenges?**

- **Pose questions, test solutions and use problem-solving strategies to solve movement challenges, for example:**
  - apply movement skills and respond to feedback to solve movement challenges **S M** 🍷🍷
  - draw on and apply prior knowledge, feedback and skills to solve movement challenges **S M** 🍷
  - identify how to modify plans within a game to achieve success **S M** 🍷
  - participate in physical activities which require problem-solving and persistence to achieve a goal **S M** 🍷🍷
  - use problem-solving strategies to identify ways to make environments safer **S M** 🍷

**KIQ 3: How can we include others in physical activity?**

- **Adopt inclusive practices when participating in physical activities, for example: (ACPMP048)**
  - use interpersonal skills to complete a movement task, eg team strategy **I M** 🍷
  - work collaboratively with team members to maintain possession in a game **I M** 🍷
  - modify physical activities to ensure that everyone is included, eg changing equipment, rules or playing space **S I M** 🍷
  - identify situations where it is appropriate to adopt a role and take on responsibilities to solve movement challenges **I M** 🍷
- **Apply basic rules and scoring systems, and demonstrate fair play when participating in physical activities, for example: (ACPMP050)**
  - contribute to fair decision-making in physical activities by applying the rules safely and appropriately **S I M** 🍷📺
  - recognise fairness and inclusion in a game situation, and propose strategies to promote these actions **S I M** 🍷📺

**Healthy Safe & Active****KIQ 4: How can I take action to enhance my own and others' health, safety, wellbeing and participation in physical activity?**

- **Perform physical activities designed to enhance fitness and discuss the impact of regular participation on health and wellbeing, for example:**

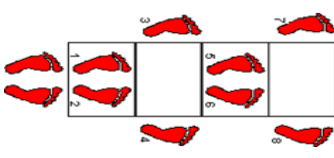
- create and participate in a physical activity designed to develop understanding of the health-related fitness components, eg fitness circuit, fun run, aerobics, obstacle course **M** 🏃
- perform and describe a range of physical activities that explore health, fitness and skill benefits, eg stretching and warm-up techniques **M** 🧘 🏃 🏠

**Suggested Links to other Key Learning Areas:**

**Mathematics**

**Success Criteria:**

- Demonstrates efficient ways of using equipment while working cooperatively with others.
- Moves proficiently.
- Enjoys regular participation in worthwhile physical activity.

Learning Experience	Organisation and Resources	Teaching Tips / Strategies
<p>Students perform various agility runs through the ladder (e.g. one step, double step, side-step, in &amp; out) and then sprint forward to the end marker.</p> 	<p><b>Equipment:</b> Agility Ladders / chalked markings similar to ladders Bean Bags/variety of Balls.</p> <p><b>Set Up:</b> Groups of 4-6 maximum Time: 5-10 minutes.</p>	<p>- Ball passing can be added to extend the skill, as can additional maths equations.</p> <p>Maths Integration: tasks added (e.g. Multiplication tables) Allow students to choose their own maths tables.</p>

**Assessment:**

- Observe, listen and respond to student misconceptions.

**How can this activity be differentiated? (Ideas for inclusion)**

- Chalk the tables in the ladders.
- Encourage students to randomly pick a numbered bean bag from a selection 1-12.
- Introduce throwing and catching to develop manipulative skills.

How can this activity be adapted to:	
Early Stage 1	Roll a die and count on.
Stage 1	Skip count 2, 5 10.
Stage 2	Tables 1-10.
Stage 3	Encourage students to randomly pick a numbered bean bag from a selection 1-12.

## Tabloid of Activities

### Strand/s:

- Movement Skill & Performance
- Healthy Safe & Active Lifestyles

### PDHPE Syllabus Outcomes:

#### Stage 3

#### **Movement Skill & Performance**

**PD3-4** - adapts movement skills in a variety of physical activity contexts

**PD3-5** - proposes, applies and assesses solutions to movement challenges

**PD3-10** - selects and uses interpersonal skills to interact respectfully with others to promote inclusion and build connections

#### **Healthy Safe & Active**

**PD3-8** - creates and participates in physical activities to promote healthy and active lifestyles

### Key Inquiry Questions (KIQ):

#### Stage 3

#### **Movement Skill & Performance**

1. How can we adapt and perform movement skills in different situations?
2. How can we use strategies and tactics to create solutions to movement challenges?
3. How can we work with others to build positive relationships during physical activity?

#### **Healthy Safe & Active**

5. How responsible am I for my own and others' health, safety and wellbeing?

## Content:

**Stage 3****Movement Skill & Performance****KIQ 1: How can we adapt and perform movement skills in different situations?**

- perform and refine movement skills to a variety of situations, for example:
  - vary locomotor movement patterns to cater for variations in movement, eg sprinting, distance running, sidestepping, dodging and defensive/offensive game skills **M** 🎯
  - adapt movement techniques to cater for the use of different equipment and physical activities or games settings, eg accuracy, force, speed, distance, direction and control **M** 🎯
  - adapt movement skills to perform own or set movement sequences with consistency **S M** 🎯
- **Practise specialised movement skills and apply them in a variety of movement sequences and situations, for example: (ACPMP061)**
  - jumping, hopping or stepping with control for height and/or distance, eg long, high or triple jump **M** 🎯
  - apply locomotor and stability skills to create deception in different movement situations, eg dodging **M** 🎯
  - refine object-control skills to perform specialised movement patterns related to a variety of sports and Olympic Events eg shoulder pass, chest pass, bounce pass **M** 🎯
  - apply throwing skills to propel an object for accuracy and/or distance to maintain possession and/or implement strategies in games and sports, physical activities
  - design a sequence of passes between teammates to maintain possession or move a piece of equipment from one point to another **M** 🎯 🏀 🏈
  - perform physical activities that involve a transition from one skill to another, eg from dribbling to shooting, leaping to balancing, running and passing, running to kicking **M** 🎯 🏀 🏈

**KIQ 2: How can we use strategies and tactics to create solutions to movement challenges?**

- **Apply critical and creative thinking to generate, create and access solutions to movement challenges, for example: (ACPMP068)**
  - recognise and consider a number of solutions to movement challenges and justify which solution is most appropriate or effective **S M** 🎯 🏆
  - apply movement skills and strategies from other contexts to generate a solution to an unfamiliar movement challenge, eg games **S M** 🎯 🏆
  - assess and refine strategies to persist and successfully perform new and challenging movement skills and sequences **S M** 🎯 🏆
  - demonstrate defensive and offensive play in modified games **M** 🎯
  - implement tactics which account for their own strengths and the strengths of others in group and team activities **S M** 🎯 🏆
  - explain the rationale for particular rules, strategies and tactics in individual/group/team physical activities, games and sports **S I M** 🎯 🏀

**KIQ 3: How can we work with others to build positive relationships during physical activity?**

- **Participate positively in groups and teams by encouraging others and negotiating roles and responsibilities, for example: (ACPMP067)**
  - understand and perform different roles and responsibilities in physical activities that promote enjoyment, safety and/or positive outcomes for participants **I M** 🏆 🏆

- demonstrate negotiation skills when dealing with conflicts or disagreements in movement situations **I M** 🏆 🏆
- respond appropriately to others when working in small groups on movement tasks or challenges **I M** 🏆 🏆
- perform in ways that enhance the contribution of self and others in a range of cooperative situations **I M** 🏆
- **Demonstrate ethical behaviour and fair play that aligns with rules when participating in a range of physical activities, for example: (ACPMP069)**
  - propose changes to the rules and/or conditions to create more inclusive play and allow for a fairer contest **S I M** 🏆 🏆 🏆
  - correctly interpret, explain and/or apply rules in games and physical activities **I M** 🏆 🏆 🏆
- **Participate in physical activity from their own and others' cultures and examine how involvement creates community connections and intercultural understanding, for example: (ACPMP066)**
  - research physical activity in Aboriginal and Torres Strait Islander cultures **I M** 🏆
  - research and participate in different culturally diverse physical activities that people in other countries play **M** 🌐 🌐

### Healthy Safe & Active

#### IQ 4: How responsible am I for my own and others' health, safety and wellbeing?

- **Recognise how regular physical activity and movement situations promote enjoyment and positive outcomes for participants, for example:**
  - observe and explain how individual strengths and teamwork contribute to achieving success in physical activities **S I M** 🏆 🏆 🏆
  - examine the benefits of physical activity to social health and mental wellbeing **S** 🏆
  - understand the contribution of different roles and responsibilities in games and physical activities **S** 🏆 🏆
  - participate safely and positively in groups and teams by encouraging others and negotiating roles and responsibilities during physical activity, eg initiative/challenge physical activities (ACPMP067) **I M** 🏆 🏆 🏆 🏆
  - discuss how safe participation in outdoor activities creates connections to natural and built environments (ACPPS059) **S I** 🏆 🏆 🏆 🏆


#### Suggested Links to other Key Learning Areas:

Mathematics

#### Success Criteria:

- Adapts throwing action to cater for different types of equipment for distance, accuracy and speed, e.g. koosh ball.
- Helps others to achieve set tasks.
- Works independently or in a group to devise a simple game.
- Enjoys regular participation in worthwhile physical activity.



Learning Experience	Organisation and Resources	Teaching Tips / Strategies
<p><b>Olympic Maths Stations</b></p> <p><b>Activity 1: Archery</b></p> <p>Take turns to underarm throw 3 koosh balls on to a target. Total up your score and multiply your score by the number you roll on the dice.</p> <p>Have 3 attempts.</p> <p>Work out your total and your mean score.</p> <p><b>Activity 2: Shot Put</b></p> <p>Using a shot put technique aim 4 bean bags into hoops. Each successful aim should be placed before the decimal place, each miss after the decimal place.</p> <p>Using your digits work out your lowest and highest possible totals (place value).</p> <p>For example: 4 and 9 missed, 3 and 7 were accurate. Highest score= 73.94 Lowest Score = 37.49</p> <p><b>Activity 3: Basketball</b></p> <p>Estimate how long you think it will take you to bounce a ball a set number of times. Time each other how long it takes you to bounce a ball 10 times, 20 times and 30 times.</p> <p>Record your answers for three attempts.</p> <p>Work out the total time taken include hundredths.</p> <p><b>Activity 4: Triple Jump</b></p> <p>Estimate the total distance you think you will jump.</p> <p>From the mark, hop, step and jump as far as you can. Use a</p>	<p><b>Equipment:</b> Bean Bags/variety of Balls Target Mat Variety of Dice</p> <p>4 hoops. Bean bags numbered 1-9. Chalk.</p> <p>Basketballs Stop watches</p> <p>Chalk Tape measure</p>	<p><b>Groups of 4 per station.</b> <b>Time: 20-30 minutes.</b> <b>4-6 minutes per station.</b></p> <p>Encourage student autonomy on tasks. For example having a variety of dice.</p> <p>Encourage estimation on all tasks.</p> <p>Use chalk to record answers on the playground if possible.</p> <p>Encourage students to create their own station.</p> <p>Create task cards for each station.</p> <p><b>Example task Card</b></p> <div data-bbox="1045 898 1455 1211" style="border: 1px solid black; padding: 10px;"> <p style="text-align: right;"><b>Olympic Maths</b> </p> <p><b>Activity 1 Archery</b></p> <p>Take turns to underarm throw 3 koosh balls on to The target. Total up your score and multiply your score by the number you roll on the dice. Have 3 attempts. Work out your total and your mean score.</p> </div>

<p>chalk mark/ bean bag to indicate your final landing place.</p> <p>Estimate the distance travelled. Check your answer using the tape measure.</p> <p>Work out the difference.</p> <p><b>Activity 5: Boxing</b></p> <p>How many skips can you do in 30 seconds?</p> <p>How many skips can you do in 60 seconds?</p> <p>If you skipped at this pace how many skips would you manage in hour, 1 day and one leap year.</p>	<p>Skipping ropes. Stop watches.</p>	
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<p><b>Assessment:</b></p>
<ul style="list-style-type: none"> <li>▪ Observe, listen and respond to student misconceptions.</li> <li>▪ Work product analysis.</li> <li>▪ Group Interaction/social skills.</li> </ul>

<p><b>How can this activity be differentiated? (Ideas for inclusion)</b></p>
<p>Students should be encouraged to develop their own mathematics and physical activity stations.</p>

<p><b>How can this activity be adapted to:</b></p>	
<p>Early Stage 1</p>	<p>This approach can be used for all stages by making both the physical tasks and the mathematics stage appropriate.</p>
<p>Stage 1</p>	
<p>Stage 2</p>	
<p>Stage 3</p>	

### Other Considerations:

- Monitor participation of girls and boys in all games and learning experiences.
- Use gender-inclusive language and actively encourage students to use the same.
- Balance competitive and cooperative movement experiences.
- Students need to be reassured and supported in all learning situations.
- Establish a class borrowing system to ensure that all students can have access to resources by enabling students to take them home or use them outside of class time.
- Every child has a right to participate in learning - make activities inclusive.
- All students can learn and succeed if tasks are appropriate and meaningful.

### Links to Technology:

- Use of I pads to record scores for additional mathematics from data collected during activity.
- YouTube links to add significance to the physical activity eg. Hop step jump activity.  
[https://www.youtube.com/watch?v=M1GAX\\_7hXv0](https://www.youtube.com/watch?v=M1GAX_7hXv0)

# Physically Active Numeracy Ideas - Nick Riley

## 1: Skipping Activities

Students are to have their own individual skipping rope. Maths Integration: Students have to complete the number of skips that is a friend to ten, for example if the teacher says 7; the students have to complete 3 skips.

Students can ask each other the algorithms e.g. How many more to 10, if I have got 5. Students in Stage 2 and 3 can complete problem solving questions, for example: 76% of students like weekends, what percentage do not like weekends.

Fractions- what is  $\frac{3}{7}$  of 21 etc. Partner A skips the number of Skips from the answer. Partner B skips the other fraction. E.g.,  $\frac{3}{5}$  of 20. Then discuss their answers.

Partner A		Partner B
Total number to skip	How many to skip?	Total number to skip
	$\frac{2}{5}$ of 20	
	$\frac{3}{4}$ of 12	
	$\frac{3}{8}$ of 24	
	$\frac{6}{10}$ of 30	
	$\frac{2}{9}$ of 18	

How many edges are there on a triangular prism? Students skip their response.

## 2: Area:

Students are to estimate and measure the area of selected areas using standard and non-standard measures.

Location:	Units used:	Estimated Measurements:			Actual measurements:			Perimeter
		Length:	Breath:	Overall Area:	Length:	Breath:	Overall Area:	
Area :	My unit							
	2 footed jumps							
Area :								

## 3: Maths Scavenger Hunt

Using i pads send students on a maths trail. At each point they are to perform an additional physical activity. Make question cards, and allow students to set trails. Use a map of school and overlay a grid to teach coordinates. Students return to teacher at end of each clue to receive another clue.

For Example: Power walk to find an acute angle. Take a picture of your group at the acute angle and perform a Mexican wave!

**4: Higher or lower**

Choose a number between 1 and 100. Choose one child to come out to the front and take a guess as to which number it is. If the number chosen by you is lower all the other students’ squat, if higher students jump up.

**5: Making shapes**

Give a group of students a small number of cones/markers. Ask them to set out an estimate of a shape and then measure. E.g. An irregular pentagon with a perimeter of 25m. Allow students to measure with a tape measure to check for accuracy.

**6:** Have students hypothesize which activity (30 seconds) burns more energy: *hopping, skipping, jumping rope, jogging on spot, or walking*. Rank each activity in terms of energy expenditure from 1 (hardest) to 5 (easiest).

Have students complete each activity and record steps taken and energy expended.

Activity (30 secs)	Estimated Ranking (1-5)	Heart rate	Energy expended	Actual ranking (1-5)
Hopping				
Skipping				
Jumping rope				
Jogging on spot				
Walking				

## Recording Sheet

Activity 1	Attempt 1			Attempt 2			Attempt 3		
ARCHERY									
Total x dice									
Mean									

Activity 2	20	30	40
Time estimated			
Actual time			
Difference			

Activity 3	Record numbers	Highest	Lowest
Shot Putt 1			
Shot Putt 2			

Activity 4	Estimate	Actual	Difference
Attempt 1			
Attempt 2			


Activity 5	30 seconds	1 minute	1 hour	1 day	1 leap year
Skip 1					
Skip 2					



### *Pedometers*



Outline instructions for wearing pedometers and entering personal data for stride length (press mode to distance then press set to change) and weight (press mode to kcal then press set to change).

Students to calculate their own stride length using a 10m distance. Have each student calculate stride length by walking 10m and dividing 10m by number of steps. For quick reference, see table:

Steps	Stride length (cm)
9	110
10	100
11	91
12	83
13	77
14	71
15	67
16	63
17	59
18	55

	Estimated distances	Steps taken	Actual distance	Difference between estimated and actual
TOTALS				
TOTALS				

<h3 style="text-align: center;">Olympic Maths </h3> <p><u>Activity 1 Archery</u>                  Take turns to underarm throw 3 koosh balls on to The target.                  Total up your score and multiply your score by the number you roll on the dice.                  Have 3 attempts.                  Work out your total and your mean score.</p>	<h3 style="text-align: center;">Olympic Maths </h3> <p><u>Activity 2 Basketball</u>                  Estimate how long you think it will take you to bounce a ball a set number of times. Time each other how long it takes you to bounce a ball 10 times, 20 times and 30 times.                  Record your answers for three attempts.                  Work out the total time taken include hundredths.</p>
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<h3 style="text-align: center;">Olympic Maths </h3> <p><u>Activity 3 Shot Putt</u>                  Using a shot putt technique aim 4 bean bags into the hoops. Each successful aim should be placed before the decimal place, each miss after the decimal place.                  Using your digits work out your lowest and highest possible totals (place value).                  For example: 4 and 9 missed, 3 and 7 were accurate.                  Highest score= 73.94                  Lowest Score =49.37</p>	<h3 style="text-align: center;">Olympic Maths </h3> <p><u>Activity 4 Triple Jump</u>                  Estimate the total distance you think you will jump.                   From the mark, hop, step and jump as far as you can. Use a chalk mark/ bean bag to indicate your final landing place.                   Estimate the distance travelled.                   Check your answer using the tape measure.                   Work out the difference.</p>
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### Olympic Maths

Activity 5 Boxing  
 How many skips can you do in 30 seconds?  
  
 How many skips can you do in 60 seconds ?  
  
 If you skipped at this pace how many skips would you manage in hour, 1 day and one leap year.

