

Movement Maths

Year 3 – Health and Physical Education, Maths

Year 4 – Health and Physical Education, Maths

Year 5 – Health and Physical Education, Maths



(Maths; Yr 3, ACMMG066)

Identify symmetry in the environment

(Maths; Yr 4, ACMMG091)

Create symmetrical patterns, pictures and shapes with and without digital technologies

(Maths; Yr 5, ACMMG114)

Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries

(HPE; Yrs 3 & 4, ACPMP047)

Combine elements of effort, space, time, objects and people when performing movement sequences

(HPE; Yrs 5 & 6, ACPMP061)

Practise specialised movement skills and apply them in a variety of movement sequences and situations

Movement Maths

Symmetry in motion

This practical maths lesson activates the mind and the body. Students practise sequences of movements. They then work in pairs to sequence them into a 'code' or a recipe/food message. Can others understand? It's a bit like mathematical charades.

This maths lesson will be noisy and fun, with a settled-down learning section at the end.

Equipment:

16 cards or slips of paper, each with one vegetable, fruit or nut (see list in the box on page 3)

Copies of the Moves on page 6 if students are not already familiar with them

One die per pair or group of three

(optional) A box or hula hoop and a dozen bean bags or similar

(optional) A circle about 2–3 m diameter marked on the floor, with four segments in it

Before the lesson:

Students will need to know the Good Mood Moves to complete this lesson. The core six moves are in the appendix (page 6).

Duration:

30 minutes – extensions can continue the lesson or be enjoyed in later sessions

Location:

A large indoor space or out of doors

Notes:

Getting Started



Movements for meaning

- Ask students to tell you ways that people communicate without using written or spoken words. Remind them of any of the following that might be familiar to them.
- People communicate using symbols such as:
 - ◇ emojis
 - ◇ hand gestures such as a thumbs up
 - ◇ hieroglyphics and other pictograms
 - ◇ sign language
 - ◇ morse code and flag codes like semaphore
- Tune in with a quick picture or demonstration of one or more of these examples.

? Discuss:

- ◇ What did the Nomcast make students wonder, in relation to moods and foods?
- ◇ Do students think moving makes them happy?
- ◇ Does it depend on what sort of movement?
- ◇ What about mental exercise such as figuring out a movement puzzle (like a maze)? What does this make students feel (emotions)?



Coded conversations

- Divide the class into pairs or groups of 3.
- Tell them we're playing a completely cracked version of charades, the 'acting-out game'.
- Provide each pair or group with the name of a vegetable, fruit or nut. Tell them to keep this TOP SECRET from everyone else in the class.
- Ask the class to think and remember the movement that they have learned for this item.

List of vegetables, fruits and nuts and their movements:

- 1 – Carrot Yoga (Standing Mountain Pose)
 - 2 – Unreal Banana Peel (Floor Cobra Pose)
 - 3 – Orange Navel Gaze (Standing Forward Bend)
 - 4 – Kale Chest Stretch
 - 5 – Brussels Sprout 'n' Hop (Squat Jumps)
 - 6 – The Grape Vine (Grapevine!)
- (See page 6 for full descriptions)

Real-life recipes

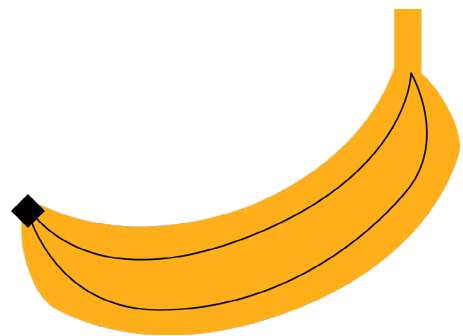
- Ask pairs/groups to roll a die. The numbers indicate:
 - 1 – salad
 - 2 – soup
 - 3 – pizza
 - 4 – smoothie
 - 5 – sorbet
 - 6 – juice
- Pairs/groups write this on their slip of paper with the vegetable, fruit or nut they were assigned.

Creating codes

- Give groups 2 minutes to come up with a sequence that includes the assigned movement for the vegetable, fruit or nut they were assigned PLUS make up a new movement to signify the food item corresponding to their number on the die.
- For example: 'Grab a banana sorbet'.
- Groups practise their movement until they can all do it.

Synchronised signing

- Taking turns, each group performs their sequence of moves for the class (who has to guess what they mean). Set a time limit, such as 1 minute. No talking! (Giggling is definitely allowed.)
- The pair/group may repeat their movements to a max of three times.
- If you want to incentivise this, place a hula hoop or box on the floor and have students drop a bean bag or similar into this each time the class guesses correctly within the time frame.



Cooking up complications (optional)

- If that goes well, and if students know how to cook a few things, have them try to communicate a simple recipe using only movement signs.
- For example, a carrot and apple salad.
- They could even add new dishes such as a stir-fry or sandwich. This can get quite fun as more than one person can make a movement (sandwich = two people 'move' like bread and one person in the middle does the movement of the filling.)
- Let them have some fun with it and see if they can communicate in movement.

Symmetrical signing

- Bring the focus back to maths and discuss the features of line and radial symmetry. Use simple images to remind or share the key features of each type of symmetry.
- Pairs now have to mirror-image, or line symmetrically show their movements. This is quite a challenge!
- Have a 2 minute practise, then get them to perform for the class. The class can call 'freeze frame' and help the performers adjust their motions until what the class sees is symmetrical. (This helps with physical memory of what symmetry is.)
- A real challenge would be radial symmetry. Gather two groups or pairs into a larger group and give this a try. It may be hard to see the radial symmetry, so you could use a marked-out circle with pie shapes on the floor to help performers check their location and placement. If this begins to 'work' for a group, it looks like a dance. Take it slowly, there are NO points for speed!

Taking it to paper

- At the end of the session, to confirm students' spatial awareness of the characteristics of line and (possibly) radial symmetry, have them draw a stick-figure representation of any symmetrical code from the last section of the lesson.
- Their image should show, and they should be able to explain, how this demonstrates which kind of symmetry.



Carrot Yoga Pose

1. Feet together – toes touching
2. Stand tall, reach overhead and press hands together
3. Breathe deeply while holding (30 secs)



Unreal Banana Peel

1. Lie on your tummy, palms flat on the ground beside your shoulders
2. Push through your hands and lift your chest
3. Look up and take deep breaths (3x)



Orange Navel Gaze

1. Stand with knees slightly bent
2. Tuck your chin and roll down slowly until your chest is flat on your thighs
3. Roll up slowly (3x)



Kale Chest Stretch

1. Standing with your hands interlaced behind your back
2. Straighten your elbows and push your hands up and away
3. Hold for 5 deep breaths



Brussels Sprout 'n' Hop

1. Squat down and touch the ground
2. Stand up, jump and land with control (5x)



The Grape Vine

1. Step left, step back, step left then tap right toes
2. Step right, step back, step right then tap left toes (5x)

