

Linked to Science & HPE V9.0

 CURRICULUM
LINKED

Australian Edition

Science
&
Physical
Education!

FOUNDATION

MINI

MOTIVATOR

PARACHUTE

BALL SKILLS +

**Bouncin' Balls
Poppin' Popcorn**

MIND MOTIVATOR SUMMARY

Strands:	Movement & Physical Activity Personal, social and community health Science Understanding Science Inquiry
Lessons:	1-2
Sub-Strands	Physical Education: <ul style="list-style-type: none"> • Interacting with others • Moving our bodies • Learning through movement Science <ul style="list-style-type: none"> • Physical sciences • Questioning and predicting
Achievement Strands (Relevant Sections)	The objective of this Mind Motivator is for the students to: Foundation <ul style="list-style-type: none"> • actively participate and show curiosity while exploring how different factors affect the movement of balls. • perform balance, locomotor, and non-locomotor activities • use personal and social skills to work and share with others
Curriculum Links	This Mind Motivator is linked between Physical Education and Science

MIND MOTIVATOR SUMMARY

This Mind Motivator has been developed with reference to the Australian Curriculum - Health and Physical Education and Science (Version 9.0).

In this engaging Mind Motivator activity, students explore the movement of balls while considering factors such as material, size, shape. They actively participate in bouncing and rolling different balls on various surfaces, making observations about how these factors affect the movement.

Additionally, students engage in parachute play, shaking the parachute to make the balls bounce and roll, while comparing their behavior. Through hands-on exploration and collaborative discussions, students develop a deeper understanding of motion, surface interactions, and the influence of different factors on ball movement.

CURRICULUM LINKS

This Mind Motivator is linked to the Australian Curriculum in 2 areas -

- Health and Physical Education
- Science

Science V9.0 -

Science Inquiry: Questioning and predicting - pose questions and make predictions based on experiences - (AC9SFI01)

Science Understanding: Physical sciences - describe how objects move and how factors including their size, shape or material influence their movement - (AC9SFU02)

Health and Physical Education V9.0 -

Movement and physical activity: Moving our bodies - practise fundamental movement skills in minor game and play situations - (AC9HPFM01)

Personal, social and community health: Interacting with others - practise personal and social skills to interact respectfully with others - (AC9HPFP02)

Movement and physical activity: Learning through movement - follow rules to promote fair play in a range of physical activities - (AC9HPFM04)

FOUNDATION

MIND MOTIVATOR - PARACHUTE

Brain Break Focus: Explore how different factors, such as the material, size, and shape of balls, influence their movement.

The objective of this activity is to investigate and understand how various factors, including the material, size, shape of balls, and the surface impact the movement of objects.

Brain Break Objective:

Additionally, the students engage in parachute play, holding a large parachute and shaking it to make the balls bounce and roll. During this play, students compare the behavior of different types of balls on the parachute surface, observing factors such as bounce height, rolling ease, and variations based on material or size.

Lesson objective for the student:

In this Mind Motivator , we will explore how various objects rolls/bounces on different surfaces and determine if the material its made of affects how it moves.

Measurable objective:

At the end of the Mind Motivator , the student aim is to:

Identify and describe at least two ways in which the movement of balls is influenced by factors such as material, size, shape, and the use of a parachute, through active participation, observations, and class discussions.

Assessment Opportunity:

- Student Worksheet
- Teacher Observation

KEY VOCABULARY

- Balls
- Foam
- Plastic
- Rubber
- Felt
- Small
- Medium
- Observe
- Parachute
- Gravity
- Large
- Bounce
- Roll
- Measure

Erin's Tip
For younger students, it's best to introduce objects/balls gradually. Begin with just two items and then incrementally add one item at a time. This approach allows children to focus on the objects and their interactions while maintaining a manageable level of engagement. As they become more comfortable, you can continue adding additional items, ensuring a smooth and enjoyable learning experience.



RECOMMENDED EQUIPMENT

Bean Bags



Parachute



Small Plastic Balls



Small Foam Balls



Tennis Balls



Prickle Balls



Feathers



Scarves/Fabric



Floor Dots



FOUNDATION - MIND MOTIVATOR - PARACHUTE

POPPIN' POPCORN

INTRODUCTION

This activity helps students explore how different factors influence the movement of objects and focuses on the influence of size, shape, and material on the movement of balls.

To begin, gather a variety of soft balls made from different materials, such as plastic, foam, cloth, and rubber (prickle balls).

Introduce these different types of balls to your students and encourage them to observe and compare their movements.

Explore and discuss the size of the balls, and the materials which have unique properties that affect the way the balls move. For example, plastic balls are smooth and lightweight, allowing them to glide easily on surfaces and bounce up high. Foam balls are soft and absorb impact, leading to less bounce and slower rolling. Cloth balls (tennis balls) are generally heavier and slower, while rubber balls are known for their high bounce and quickness.

In these hands-on experiments, your students will gain a deeper understanding of how size, shape, and material influence the movement of objects.

This activity fosters;

- critical thinking,
- observation skills,
- cooperation skills,
- an understanding of fundamental physics concepts related to motion,
- momentum,
- surface interactions.

Discuss personal and general space before the activity. Explain the concept of personal space (the immediate area around students) and general space (larger area for movement). Emphasize the need to respect personal space to prevent collisions.

MAIN CONTENT - THE GAME

ACTIVITY ONE

Divide the students into pairs to investigate and understand how various factors, such as the material, size, and shape of balls influence the movement of objects.

The pairs explore how their assigned ball act due to the material, size, and shape impact their movement on different surfaces. Share the different balls until all pairs have observed all balls.

ACTIVITY TWO

The students stretch out around the parachute and throw multiple soft balls onto it, experimenting with different ball types to observe how each one bounces off the chute. There is a variation in which the students are divided into teams, with one side aiming to bounce the balls off the chute while the other side works together to keep the balls on the parachute, creating an element of teamwork and competition.

CONCLUSION

Bring the students back into a group and discuss the lesson focuses and ask the suggested Depth of Knowledge (**DOK**) and further thinking questions.

DOK 1

- What are the different factors we considered when exploring how balls move?
- Can you name three different ball materials we used in the activity?
- What is gravity? Can you explain in simple words what happens when we drop a ball?

DOK 2

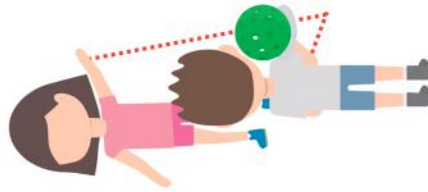
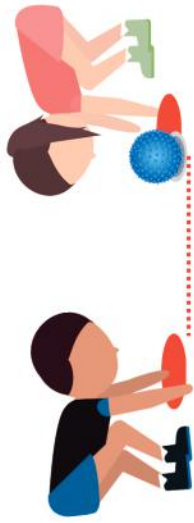
- How would you modify your technique to make a ball bounce higher off the parachute?
- What adjustments would you make to the parachute shaking to ensure the balls roll smoothly instead of bouncing?

FURTHER THINKING QUESTIONS

- Compare the bounce height of a rubber ball and a foam ball when thrown onto the parachute. What differences do you observe?
- How might the size or the heaviness of the ball influence its interaction with the parachute during the bouncing activity?

ACTIVITY TWO LAYOUT

ACTIVITY ONE LAYOUT



ACTIVITY ONE



Recommend Equipment Used

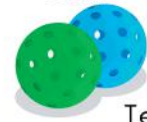
Small Foam Balls



Prickle Balls



Small Plastic Balls



Bean Bags



Tennis Balls



ACTIVITY OVERVIEW

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Ball Play: *In pairs, roll, bounce, throw the balls, and record the findings.*

- Divide the class into pairs, ensuring that each pair has one of the balls/bean bags.
- Instruct the students to take turns rolling and bouncing the ball to their partner while carefully observing and recording the behavior of each ball.
- Choose different surfaces for the experiments, such as grass, a gymnasium floor, a table, a carpet floor, and cement.
- Once they have finished the rolling and bouncing exercises, have the pairs swap their balls with another pair.
- Repeat the rolling and bouncing exercises with the new balls, noting the differences in ball behavior on each surface.

How to measure:

Rolling:

- The students will roll balls/bean bags between each other and observe how the object travels on which surface.
- The objective is to explore how various objects roll on different surfaces and determine if the material of the ball affects how it moves,
- The students will record their findings.

Bouncing:

- To measure the bounce, the students will conduct an experiment where one student stands still while a ball is bounced next to them.
- The students will then document their observations and record the results on a data sheet.



Erin's Tip
When choosing types of balls, making sure they aren't hard or heavy balls (basketballs, golf balls, softballs etc) as these balls will also be bouncing around on a parachute.

ACTIVITY TWO

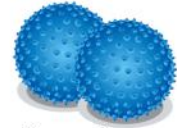


Equipment Used

Small Foam Balls



Prickle Balls



Small Plastic Balls



Bean Bags



Tennis Balls



Parachute



ACTIVITY OVERVIEW

FOUNDATION

Poppin' Popcorn: *As a class, use the parachute to investigate how different balls interact.*

- Begin by having all students hold the parachute stretched out. Throw as many balls as you have onto the parachute, aiming to have a variety of different balls for more exploration!
- While holding the parachute tightly, instruct the children to bounce the balls off the chute as quickly as they can, creating a popcorn-like effect.

Variation:

- Divide the students into two teams. One team will focus on bouncing the balls off the parachute, while the other team will work together to keep the balls on the chute, adding an element of teamwork and competition.
- Encourage the children to try using different balls and observe how each ball behaves when bounced off the parachute. By experimenting with various ball types, such as plastic, foam, cloth, or rubber, they can explore how different materials affect the bounce and movement of the balls. This adds an additional dimension to the game, allowing for a deeper understanding of how ball characteristics influence their interaction with the chute.

Other objects:











Besides balls, there are numerous other objects and materials that you can use on a parachute to make the activity more engaging, fun, and a great sensory component. Here are some suggestions:

- **Scarves:** Lightweight scarves are a classic choice for parachute play. They float and billow in the air, creating a visually appealing effect as they glide down. Students can fluff them up and watch them float back down onto the parachute. (Like fluffing out a quilt cover)
- **Stuffed Animals:** Plush toys or stuffed animals can be placed on the parachute to add an element of whimsy. Students can experiment with gently bouncing or launching the toys into the air and observing their descent. (Try a Mexican wave effect)
- **Lightweight Balls with Bells:** If you still want to incorporate balls but prefer a softer option, consider using lightweight balls with small bells inside. The bells will produce a pleasing sound as the balls move on the parachute. (These also can be used in the worksheet)
- **Feathers:** Gather a collection of feathers and sprinkle them onto the parachute. As the parachute lifts and falls, the feathers will float in the air, creating a delightful sensory experience.











Name: _____

STUDENT WORKSHEET

ROLLING




Which objects ROLL? Tick the boxes of the ones that roll.						Which objects ROLL on the parachute? Tick the boxes of the ones that roll on the parachute.				
	Foam Ball 	Tennis Ball 	Prickle/Rubber Ball 	Plastic Ball 	Bean Bags 	Foam Ball 	Tennis Ball 	Prickle/Rubber Ball 	Plastic Ball 	Bean Bags 
Grass										
Cement						DRAW THE BALLS ON THE PARACHUTE				
Table										

BOUNCING

Which objects BOUNCE on the ground? Tick the boxes of the ones that roll on the ground.						Which objects BOUNCE on the parachute? Tick the boxes of the ones that roll on the parachute.				
	Foam Ball 	Tennis Ball 	Prickle/Rubber Ball 	Plastic Ball 	Bean Bags 	Foam Ball 	Tennis Ball 	Prickle/Rubber Ball 	Plastic Ball 	Bean Bags 
Grass										
Cement										

HOW HIGH DID IT BOUNCE?

Draw a line to show how high which objects bounced.

Foam Ball		Grass 
Tennis Ball		Cement 
Prickle Ball/ Rubber Ball		
Plastic Ball		
Bean Bags		

Name: _____

STUDENT WORKSHEET

ROLLING

Which objects ROLL?
Tick the boxes of the objects that roll.

Which objects ROLL on the parachute?
Tick the boxes of the objects that roll on the parachute.

DRAW THE BALLS ON THE PARACHUTE

BOUNCING

Which objects BOUNCED on what type of floor?
Tick the boxes of the objects that bounced.

Which objects BOUNCE on the parachute?
Tick the boxes of the objects that bounced on the parachute.

HOW HIGH DID IT BOUNCE?

Draw a line to show how high which objects bounced.

Grass —
Cement —

