

POUMĀHAKA SCIENCE QUEST: THE PLAYGROUND

Playgrounds have lots of fun equipment. Your mission is to find out more about the physics involved in some playground activities. **WHAT TO DO:** You need to complete 4 of the activities listed below. You need to complete at least one practical activity and one written activity as part of your 4 activities.

Practical Activities	Date finished	Written Activities	Date finished
Find out how to go down a slide with the most possible speed. Does your size matter? Does lying down versus sitting up matter? Does the material of your clothing matter? Using a stopwatch and the tallest slide you can find record the time it takes to slide down in each case.		Draw a diagram of a lever with a fulcrum in the middle, a person pushing down on one end, and a load on the other end. Label each part. Write a list of three things that use levers and explain how they work.	
Take a member of your whanau who is bigger than you to the park. Sit on the see saw and try balance yourselves. Who must move closer to the pivot? Measure the distance each person is from the pivot and draw a diagram to show your teacher.		Learn about gravity and how it affects the world around us. Create a presentation that shows: What gravity is/how gravity works/why gravity is important and give a fun fact about gravity.	
Predict whether two different objects dropped from the SAME HEIGHT at the SAME TIME will hit the ground together. Now try it out - careful, it takes a bit of skill to do this correctly. You will need someone to help with timing.		Find out about either gravitational potential energy or kinetic energy. What is this type of energy?/How does it work?/Where do we find it in everyday life?/Why is it important?	
Sit on a swing and twist it slowly around and around until it is wound up tightly. Let go and time how long it takes for the swing to unwind. Try it again but stretch your arms and legs out as far as they will go. Do it again but pull your arms and legs close into your body. How do the changes affect the spinning speed? Which body position allows you to spin the fastest?		With the permission of an adult - go onto YouTube and watch Brian Cox visits the world's biggest vacuum. https://youtu.be/E43-CfukEgs?si=jIGg3P_o961F7ML Write a paragraph saying what you thought would happen when the feather and bowling ball were dropped versus what did happen in the vacuum.	

SCIENCE QUEST