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It’s Rocket Science

This booklet is to help you decide on the lessons you would like you learners to learn and how we can work together to inspire learners about all thing space

Some important information

What I Need To Do	What You Need To Do
Complete and send risk assessment documents	Book your school oval and inform your PE teacher (remind them on the day too, just in case).
Send through learning pathway documents, including extension ideas and how to incorporate our incursion into a whole unit of learning.	Share learning pathways and resources with other teachers participating in the incursion (or we can do that too!)
Bring all materials for the workshop - lesson resources, rocket launch system.	Supply added materials as needed, i.e. bottles, card.

It’s Rocket Science

About space4alleducation

We are a small dedicated team who love space and wishes to share their love with anyone who wants to learn about space/astrometry and rockets and more.

I am Andy the owner and lead tutor for space4education.com a small company dedicated to improving the education for all learners who want to be involved in the developed of space.

Over the last 7 years we have been developing a program aimed helping and supporting leaners from 10 years and younger.

The Booklet that you are holding is the beginning of that journey, as it the beginning of your journey as you begin to explore the various regions of space.

This is the first in series of booklets that will give you various information about space.

This booklet was created by

Andy (Content creator) and Steve (I.T Management).

Please check out our website

ww.space4alleducation.com

It’s Rocket Science

Prep/Foundation (Make It Move)
Be a rocket scientist for the day, exploring the properties and movement of flying objects. Students will make a simple loo roll rocket then use their senses to compare the push and pull forces used to move flying objects to see what flies higher, faster or further. Watch their excitement take off as their rocket is launched 60 metres into the air! Curriculum: PC on the Move; C2C Move It, Move It.

Year 1 (Living things in Space)
Create your very own habitat for growing plants on another planet. Students will explore the conditions needed for living things to grow and learn fun facts about food grown in space. They will experiment with their own bean seed in a bag which will have to survive a rocket launch and journey before sprouting in its new destination. Your classroom will become a mini greenhouse to monitor plant growth and discover how plants are vital for sustainable existence.
Curriculum: PC Schoolyard Safari; C2C Living Adventure.

Year 2 (Push and Pull Parachutes)
Discover the fast-moving fun of air transport and understand how push and pull forces make things fly. Students will explore the factors that affect an object’s movement through air, then conduct a class parachute experiment to understand how the parachute affects the movement of an object of different weights when dropped. Curriculum: PC Physical Science - Push Pull; C2C Toy Factory.

It’s Rocket Science

Years 7-10(Astro Egg)
The egg drop experiment has been launched out of this world! Students build a water rocket booster and parachute to keep their ‘astronaut’ safe, but the challenge is for Astro Egg to survive the G-force of launch, shock of booster separation and return safely to earth. His life depends on you!

Years 7-10 (Advanced Rocketry Challenge)
Rockets are the oldest form of self-contained vehicles in existence, evolving from simple tubes filled with black powder into engineering wonders capable of launching a spacecraft off the earth’s atmosphere. Investigate the science and physics behind rocket flight and the exchange of thermal energy. Students will then construct and launch their own chemical-fuelled model rocket! Participants will take home a reusable model rocket. *Additional costs will apply for resources in this workshop

It's Rocket Science

Year 3 (Sustainable Space)
Sustainable Space is an engineering, sustainability and recycling challenge. Students will investigate the suitability of materials and components to build and test a sustainable flying vehicle using the reduce, reuse and recycle concept. Discovering the methods of space transport from the past and present, they will explore the environmental impact of space junk and why sustainable space exploration using renewable energy will be essential for shaping the growth of future communities and habitats. Curriculum: C2C Design and Technologies.

Composite: Prep/Foundation - Year 3 (go for launch)
Students will be rocket scientists for the day, exploring the science behind rockets and flight. Using recycled and repurposed items, make a simple bottle rocket before squeezing the trigger to extraordinary excitement as their rocket is launched 60 metres!
Curriculum: PC On the Move, Physical Science - Push Pull; C2C Move It, Move It; Design and Technologies.

Composite: Prep/Foundation - Year 3 (Aviation Explorers)
Experience imagination-fuelled flights in a real-life aircraft with an airport set up at your location. Develop an understanding of basic aerodynamics, properties of air and discover how and why things move. Students will experiment with these concepts by creating their own simple flying machine, a foam glider. *SE Old only
Curriculum: PC on the Move, Physical Science - Push Pull; C2C Move It, Move It.

It's Rocket Science

Year 4 (Flying Forces)
Using the power of air, this gravity-defying unit will have students explore the interaction of forces, direction of motion and gravity, with effects of friction when exerted on vehicles that fly. Students will conduct a fair test investigation and experience the extraordinary fun of rocket science to build, launch and measure the thrust (push) force on each launch of their bottle rocket. Discover the principles of basic aerodynamics, flight trajectories and propulsion (energy) with real flying bottle rockets. Curriculum: C2C Fast Forces.

Year 5 (My Place in Space)
Explore the science that overcame enormous challenges to help man walk on the moon. Find out how space missions past and present contributed to scientific understanding of our place in the universe. Students will consider the advances in technology made from space exploration and discuss the future of space junk, sustainable tourism and interplanetary travel. They will experience the spectacular fun of rocket science and launch their own space mission through this STEM investigation. Curriculum: PC Earth's Place in Space.

Year 6 (Watt are the Chances?)
Discover the spectacular energy transformations involved in motion and flight. Students will be introduced to the sources of energy, energy efficiency, and renewable fuels and will explore the potential energy sources possible for space travel. They will construct and test a bottle rocket to see energy conversion in action, at the same time conducting a probability and chance experiment.
Curriculum: PC Essential Energy.