

CLASS DESCRIPTIONS JULY 2019

| A | Class description |
|--|---|
| <p>Attractive Science</p> <p>Years 3-4</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • All charged up! Learn about electrostatic forces and how they are created • May the force be with you: investigate the attractive and repulsion forces created through electrostatics • Levitating rings • Hair raising science! Using a Van der Graaf Generator • Magnetic forces • Create and build your own simple compass • Create your own game from what you've learned about forces! |
| B | Class description |
| <p>Bird Time Lucky</p> <p>Years 2-3</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • What Makes a Bird? • Bird Spotting: discover the abundance of birds on campus • Incursion with a bird specialist who turns the classroom into a museum! • How to Attract a Mate – Bird 101 • The Evolution of Bird Beaks • Build-A-Nest |
| <p>Bubbleology</p> <p>Years K-1</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • The science of bubbles • What makes the best bubble? • Make your own touchable bubbles • Create spooky dry ice bubbles • Learn about how rainbows form by making giant bubbles! |

| C | Class description |
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| <p>Call the Dr</p> <p>Years 6-7</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Get a taste of a day in the life of a doctor! • Passing it on: how do we get sick? How can we prevent sickness? • Detecting cancer: become a pathologist and diagnose 'patients' • Get your blood pumping: how exercise affects your heart rate & blood pressure • Electrophoresis: analyse DNA to find genetic diseases • Detecting sickle-cell anaemia • Vitamin C: which juice has the most? • Community immunity: the role of immunisation • Genetic engineering: could we eradicate malaria forever? What could be the consequences? |
| <p>CSI</p> <p>Years 5-6</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Learn how to look for evidence and solve crimes as a forensic scientist • Analysing fingerprints • Dental forensics: find out who the murderer in your class is by analysing their bite • Footprint analysis • Using chromatography to solve crime • Become a handwriting expert to find the criminal • Under the microscope: hair/fibre evidence • Put all your knowledge together to solve a crime in your group! |

| D | Class description |
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| <p>Day of the Dinosaur</p> <p>Years K-1</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Fizzing dinosaur eggs • Make your own fossil imprints • T-rex tag • Are birds dinosaurs? • Touch and feel bird experience with an incursion from a bird specialist • How big is a dinosaur's foot? • Pasta skeleton |
| <p>DNA and Evolution</p> <p>Years 4-6</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • How are we alike? How are different? • Tree of genetic traits – where do you fit in? • Create a DNA model • Dog DNA: interpreting the code then make your own species • Extracting strawberry DNA • Preying on beans: evolution and natural selection • Bird beak adaptations – how do they adapt to their environment for survival? |

| E | Class description |
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| <p>Earth and Solar System</p> <p>Years 2-3</p> <p>(with planetarium excursion!)</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Day and night – what causes it? • The power of the almighty Sun • Making Earth’s defence - our magnetic field • How do craters form? Make your own impact • Make a model of the Earth, Sun and Moon to understand their positions in our Solar System • Explore the solar system with an excursion to the Planetarium! Run by the Astronomy team at Macquarie University • Understanding the cycles of the Moon using Oreos |
| <p>Earth Explorers (formerly Astronomy 2: The Modern Earth)</p> <p>Years K-1</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Deep inside the Earth: make your own model of the Earth’s layers • Water magic: how water fundamentally changed our planet’s geology • Volcanic eruptions! • The wonder of rocks on Earth • Make your own Martian sand and take it home • Touch and observe ancient fossils: what can they tell us about the past? |
| <p>Egyptology</p> <p>Years 5-6</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Technologies of the Past: discover Ancient Egyptian tools and technologies • Make your own papyrus paper • Mummification 101: learn how to preserve bodies (well, potatoes) using osmosis and learn the science behind the mummification process • Mummify your vegetables: mummify your own tomato to take home and into the afterlife • Create your own Egyptian stylus and ink • Write like an Egyptian: learn how to write hieroglyphs using the materials you have made throughout the day! |

| F | Class description |
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| <p>Falling with Style (Flight)</p> <p>Years 2-3</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Let's fly! Discover a range of toys and objects that fly • Perfecting the paper plane: dart planes, hang gliders and circular planes • Experiment with seeds that can fly • Paper plane competition: whose plane can fly the furthest and for the longest? • Make your own paper helicopters • Make your own mini hot air balloon! |
| <p>Funky Physics</p> <p>Years K-1</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Energy and movement: exploring the pendulum • Making catapults – who can propel a marshmallow the furthest? • Galileo's gravity experiment • Balancing act • Newton's first law of physics: using eggs! • Explosions: what is the force behind them? • Exploring fair tests using paper helicopters |

Future Pilots

(previously known as Flight)

Years 5-6

Learning experiences include:

Day 1

- Exploring gravity, lift, thrust, drag and all things that fly
- Discover and experiment with plane manoeuvres during flight
- Creating flight using the fast-moving air challenge
- Make objects fly using hot and cold air
- Create and test your own paper planes: Nakamura and Alpine
- Explore thrust with your own pocket rockets!

Day 2

- The propeller problem: how do helicopters fly?
- Test your own paper plane designs – Kamikaza and Hipster
- Use plane launchers to propel your creations!
- Can you break a ruler using only two sheets of newspaper?
- Take home your own customizable electric plane
- Invent flying machines of the future
- Family showcase: join us for afternoon tea and a presentation organised by your children. See their creations and be amazed by their demonstrations!

| G | Class description |
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| <p>Good Vibrations</p> <p>Years 1-2</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Sensing Sound: how does it all work? • How Sound Travels • Identifying Sound: discover new sounds and vibrations through a variety of experiments • Good Vibrations: learn the science behind sound and the role of vibrations • Making Different Sounds • 'Seeing' Sound: creating vibrations you can see! • The Science of Music: make your own 'instruments' |
| <p>Goody Poo Shoes</p> <p>Years 5-6</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • What can your poo tell you? Learn about gut health, the microbiome and all the fascinating things poop can tell us about human and animal health. • Whose Poop? Create animal poop samples in groups and analyse them to find out which animal they belong to. • Footprints in the wild: animal tracks and the stories they tell. Create your own 'story' using animal tracks and see if anyone can detect what happened! • Incursion: Special visit from the Scoop-a-Poop citizen science research project at Macquarie University. This project looks at antibiotic resistance in the wild and is currently studying possum poop to find out how antibiotic resistant bacteria are finding their way into the guts of wildlife around NSW. • Learn and practise lab work techniques and collect possum poop samples safely for scientists at the university to study! • Take home a collection kit to show your families your new scientific fieldwork skills! |

| H | Class description |
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| <p>The Human Circulatory System</p> <p>Years 2-3</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • How strong are you? • Physical experiment: what gets our heart pumping the most? • Go with the flow: create a model of blood circulation around the body using a friend! • Make your own blood: making a model of human blood containing plasma, red blood cells, white blood cells and platelets. • How do our lungs work? Make your own model to see what your lungs do! • Model of the heart – how does the heart pump blood around the body? • Sheep heart and lung dissection: see for yourself what the heart and lungs look like and how lungs inflate when we breathe. <i>Please note: an alternate activity will be provided for children who don't want to participate in the dissection.</i> • Discover your lung capacity • How clean are your hands? Using UV light to discover how well your children <i>really</i> wash their hands... |
| I | Class description |
| <p>Incredible Forces</p> <p>Years 2-3</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Egg-citing science! Design and create a parachute that can keep 'Eggbert' safe from a fall to the ground • Balloon Rockets: whose can travel the furthest? • Magnetic Forces: investigate how strong magnets are and whether there really is iron in your cereal • Froggy Friction: use friction to create a climbing frog • Building Bridges Competition: design a bridge that can hold the most weight! • Create your own force dance routine in groups |

| L | Class description |
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| <p>Let It Grow</p> <p>Years K-1</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Do you know what it needs to grow? Learn about what plants need to survive and thrive. • Rainbow Roses • Bush Tucker Garden excursion with a garden expert who works at Macquarie University! • Why do leaves change colour? • Garden scavenger hunt! • Create your own grass heads |
| <p>Let's Get Physics</p> <p>Years 3-4</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • It's All About Energy • How Fast Are You? Test your reaction time in groups and see if you can react faster! • Left or right? Explore dominance in the body and how this impacts daily activities • It's All About Balance: discover centre of gravity and its effect on balance • Create a balancing sculpture using your newfound knowledge of gravity! • Build a better bike helmet: can you protect Egg Sheeran from his fall? |
| <p>Life on Mars</p> <p>Years 5-6</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Creating Martians: what kind of life could live on Mars (in the past or in the future)? How could they differ from life on Earth? • Testing for Life in Martian Soil • Did Martian Life come to us in a Meteorite? • Inflatable Landing on Mars: Create your own space craft that can safely land on Mars with Neil Eggstrong inside! • Construct a Martian Dome • The Problem of Frostbite: observe the effect of frostbite on plant life. How can this impact astronauts going to Mars? |

| M | Class description |
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| <p>Magic Tricks</p> <p>Years K-1</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Is it magic...or is it science? • Walking on water: the experiment that defies gravity! • Explore chemical reactions by making your own lemon volcano! • Create your own mad scientist potions • Slimy science! Make your own slime and learn the science behind it |
| <p>Matter Mayhem</p> <p>Years K-1</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Cooking Science: making honeycomb to discover science in cooking • Birdseed Ornaments: discover what ingredients bind others together • Iodine clock: witness a chemical reaction right before your eyes! • Elephant's toothpaste • Explore chemical reactions and a non-Newtonian fluid using slime • Blow It Up! Experimenting with gas |
| <p>Medieval Mayhem Robocamp (2 day course)</p> <p>Years 3-4 Years 5-6</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Cross the moat: bridge building challenge • Build and create your own rover knights • Design, build and test your own catapults! • Use touch and colour sensors to create and compete in a Jousting Tournament • Breaching the castle challenge • Use your robotic designs to go on a quest! |

Microscope Magic

Years 4-5

Learning experiences include:

- Become a master at using a microscope
- Collect and examine your own DNA
- Discover the secret life of little critters living in our pond water
- Compare the cells collected from humans, plants and bacteria
- Explore the life cycle of a Sea Monkey

Minibeasts

Years K-1

Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.

Learning experiences include:

- What is a minibeast?
- Life as a worm: what do they do anyway?
- Excursion to Banksia Cottage: learn all about composting, worm farms and the importance of healthy soil
- Oeey Goey Worms: make your own using a chemical reaction
- Beautiful Bees: learn about how important that are to our ecosystems and why we need to take care of them
- Minibeast Safari: how many minibeasts can you spot around campus?
- Minibeast Hotel: learn all about minibeast habitats
- Make your own minibeast!

| R | Class description |
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| <p>Robotics</p> <p>Years 1-2</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Use Lego Education WeDo 2.0 sets to build and code your own robots • Solve real-life problems using robotics! • Construct a cooling fan and program the motor to turn at different speeds • Build a spy robot • Program motion sensors to create a hungry crocodile • Challenge yourself by building a satellite that can turn and change direction |
| <p>Roman Weaponry</p> <p>Years 5-6</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Think like a Roman: use Newton's law to understand force and motion • Build a Roman Shield to protect you from attacks! • Make your own mini catapult • Excursion to the Ancient History Museum: learn all about the fascinating world of Ancient Rome • Test out different ammunition for your catapults • Romans vs Barbarians Battle: The battle has begun! Your only weapons are marshmallows to attack and a cardboard shield to protect you and your team. Use your knowledge of forces, motion, and energy to seize the day! |
| <p>Rube Goldberg</p> <p>Years 3-4</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Who was Rube Goldberg? Create your own wacky, complicated machines like Rube that accomplish very simple tasks. The more complex and strange your creation is, the better! • Design and create working models of simple machines • Collaborate with others to solve problems • Build your own pulleys to transport objects from one level to another • Construct a working Rube Goldberg machine! |

| S | Class description |
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| <p>Science is Real</p> <p>Years 1-2</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Soak It Up: explore biology and how plants absorb water • An Apple a Day: explore oxidation and food preservation • Marble physics and Newton's Laws • Where is my tree? Use your observational skills to complete this challenge • Coke chemistry • Up, up and away! |
| <p>Slick Science</p> <p>Years 1-2</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Milk, cream and butter – what's the difference? • Oil and water: learn about density and molecular properties • Oil spill: learn how oil reacts with fresh water and our oceans, how it impacts wildlife and solutions to oil spills • Walking on Water: how do objects float on water? • Water Density Magic • Oil and Water Art • Make your own Lava Lamp! |
| <p>Space Cadets (formerly Astronomy 1: The Solar System)</p> <p>Years K-1</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Explore the birth and death of stars • Learn about gravity and the rotation of our planet • Create your own UV bracelet that tells you when you need sun protection! • Discover how planets formed in our solar system • Model the creation of a planet |

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| <p>Space Robots Robocamp (2 day course)</p> <p>Years 3-4 Years 5-6</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Cross the abyss: bridge building challenge • Use ultrasonic sensors to build habitats • Construct your own rovers to explore unknown planets • Search for the Pole • Slingshot testing • Collecting resources: Minesweeper activity • Manoeuvre your robots through obstacles! |
| <p>Special Effects</p> <p>Years 4-6</p> | <p>Learning experience include:</p> <ul style="list-style-type: none"> • Make spooky, bubbling potions that change colour • Create your own invisible ink and write secret messages! Experiment with different solutions to uncover your friend's messages • Learn all about the brain in a sheep's brain dissection • Spreading the Zombie virus: will you become one? • Make realistic-looking fake blood • Create wounds to scare your parents! |
| <p>T</p> | <p>Class description</p> |
| <p>Take to the Skies (previously known as Flight)</p> <p>Years 4-5</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Discover things that fly • Learn how to make the best paper plane • How are birds able to fly? • Discover seeds that fly • Make your own seed casing that can propel seeds • Construct paper planes – Phantom, Nakamura and Cardinal • Make your own flying toy! • How heavy is air? Explore air resistance and pressure to break objects |

| W | Class description |
|---|---|
| <p>We Build this City</p> <p>Years 1-2</p> <p>**Learning activities will go until 4.00pm only. Care is available until 5.30pm and children will play inside and outside from 4.00pm - 5.30pm. You can collect your child anytime from 4.00pm - 5.30pm.**</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Engineer a house for a mouse • Learn about buoyancy by building and testing your own floating boat • Design a bridge for your mouse to cross a river • Invent and create a new game for your mouse • Take home your awesome constructions to show your families! |
| <p>What's the Matter?</p> <p>Years 3-4</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Learn about the three basic states of matter that exist all around us • Make your own working thermometer • Excursion to the Chemistry Magic Show! Discover and create your own chemical reactions with the Macquarie University Chemistry Team • Molecule tag: understand the role of molecules in changing states of matter • Make your own non-Newtonian fluid to take home (it's slime!) • Seeing air: create a chemical reaction that allows you to see invisible gases! • Classic candle experiment: understanding gases and flame • Acids or bases? Make your hypotheses and discover the pH of liquids in your house |
| <p>The Wonder Gears</p> <p>Years 4-5</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none"> • Explore the world of engineering • Learn how engineers use gears to construct simple and complex machines • Design and construct your own working gears! • Build gear train models using different gear types • Design and build a motorised bat using Lego sets • Become an engineer and solve real-life problems! Design and create simple and complex machines for specific purposes |

| Z | Class description |
|--|---|
| <p>Zippy Balloon Science</p> <p>Years 3-4</p> | <p>Learning experiences include:</p> <ul style="list-style-type: none">• Heat conduction with bursting balloons!• Explore friction by making your own hovercraft• Use chemical reactions to create a rocket!• Flushed away: what can be flushed down the toilet? Are flushable wipes really “flushable”?• Investigate the impact of salt on ice: by making ice cream!• Create a chemical reaction in your mouth: by making sherbet!• Marshmallow puff tube experiment: how far can you fire a marshmallow? |