

## GRADE SIX WORKSHOPS

### ADVENTURES IN THE BONE ZONE\*

#### SPECIAL INTEREST

Join this ecological adventure and dissect an owl pellet, use magnifying glasses to sort and identify bones and assemble a rodent skeleton. Examine a variety of mammalian skulls to determine species and explore similarities and differences between herbivores and carnivores.

### AIR AND FLIGHT

#### STRUCTURES AND MECHANISMS

Soar as you explore the science behind powered and non-powered flight! Discover the properties of air and the principles of flight. Explore the forces of flight by coordinating parachute drops, measuring human thrust, finding the best wing design and angle of attack for maximum lift, and discovering the correct mechanics of propeller construction.

### CELESTIAL SLEUTHS

#### EARTH AND SPACE SYSTEMS

Come and explore the nature of the universe and our solar system, its shape, and the bodies within it! Each student will build their own planisphere map showing stars and constellations visible from the region. Move through the phases of the moon, and build a comet. Discuss gravity with Sir Isaac Newton, learn how to draw an ellipse, and build a solar system to scale. Build your own Canadarm End Effector and compete in a team to lift a chair.

### CLASSY CRITTERS

#### LIFE SYSTEMS

Work as a taxonomist! Create order from the vast diversity of living things using the Linnaean classification system. Examine the microscopic world of protists and monerans and match real macroscopic specimens by uncovering similarities and differences. Compare important connections between species to understand why a classification system from 1735 still works today.

### ELECTRICITY: GET CHARGED

#### MATTER AND ENERGY

Explore the nature of electricity, its generation and use. Investigate how static electricity makes objects move. Design and build series and parallel circuits and learn how a house is wired. Test conductors, insulators and switches. Explore electromagnets and various electrical gadgets.

### MATH BUILDERS:

#### MATH FROM THE GROUND UP!\*

#### MATH

Create a company and win a lucrative building contract! Precise measurements and team participation will win you points. Learn to estimate, calculate area and perimeter and use decimals to select and cost flooring. Plan and build a structure with walls strong enough to withstand an unnatural disaster!

## GRADE SEVEN WORKSHOPS

### ADVENTURES IN THE BONE ZONE\*

#### SPECIAL INTEREST

Join this ecological adventure and dissect an owl pellet, use magnifying glasses to sort and identify bones and assemble a rodent skeleton. Examine a variety of mammalian skulls to determine species and explore similarities and differences between herbivores and carnivores.

### CLOSE ENCOUNTERS OF A CHEMICAL KIND

#### MATTER AND ENERGY

Discover the differences between pure substances and mixtures! Investigate ways to separate a mechanical mixture. Mix and match solutes and solvents and sharpen your observation skills by following the disappearing water. Explore how different factors affect solubility.

### ENGINEERING CHALLENGES

#### STRUCTURES AND MECHANISMS

Design and build a functioning cantilever able to withstand a substantial load. Investigate how to fortify beam, truss, arch and suspension bridges. Join a class-wide challenge to build a truss bridge resistant to static and dynamic loads and internal forces using only newspaper and masking tape!

### HOT STUFF!

#### EARTH AND SPACE SYSTEMS

Join our Research and Development team at the 'SiS Toy Company'. Challenge yourself to discover the secret workings behind a candle-powered putt-putt boat. Analyze how conduction, convection and radiation work together to propel these boats. Investigate how the particle theory explains changes in state, the properties of matter and how energy transformations keep things moving!

### MATH IS MY BUSINESS\*

#### MATH

Create your own bank account and earn money as you learn about probability and percentages. Build a dream team for the hockey or basketball playoffs; calculate cap space and the probability of losing your star players to injuries. Invest the money you earn to build equity with low, medium or high risk investments.



Making a connection in Electricity: Get Charged

## GRADE EIGHT WORKSHOPS

### CELL EXPLORERS: INVESTIGATING CELL STRUCTURE AND FUNCTION

#### LIFE SYSTEMS

Become a cell biologist and examine a variety of plant and animal cells using compound microscopes and a videoscope. Examine animal and human body cells to determine their structure. Make wet mounts of plant cells and compare their structure to animal cells. Get absorbed in the study of osmosis and explore pond water samples for living organisms.

### FLUID POWER

#### MATTER AND ENERGY

Explore fluids and their application in mechanical systems! Use hydrometers to investigate the relative density of a variety of liquids and join a liquid race in viscosity tubes. Move a load with dump trucks to compare hydraulic and pneumatic systems and analyze the compressibility of fluids. Build and operate models of real-life equipment that use fluid power, like a robotic arm!

### GENE: HOW DO YOU PASS IT ON?

#### SPECIAL INTEREST

Work as a geneticist to learn how traits are passed from one generation to the next. Meet some of the world's genetic pioneers and explore cell reproduction through mitosis and meiosis. Discover where your eye colour came from by delving into dominant and recessive genes!

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#### MATH

Create your own bank account and earn money as you learn about probability and percentages. Build a dream team for the hockey or basketball playoffs; calculate cap space and the probability of losing your star players to injuries. Invest the money you earn to build equity with low, medium or high risk investments.

### OPTICS IN MODERN TECHNOLOGY

#### SPECIAL INTEREST

Students will explore reflection, refraction, diffraction, and polarization of visible light. Recognize how these properties are used daily in devices such as your computer mouse, iPod, flat screen TV and digital camera. Learn how we use polarizing glasses to see 3-D movies. Use mirrors to create an optical illusion and ultraviolet light to detect counterfeit money. Use lasers to show how light is transmitted down an optical fiber and how it is used to bring us the internet.

? Ask about our workshops in French!

## HOW TO BOOK A WORKSHOP

**Choose your topic:** We have something for everyone: topics which enrich the Science and Technology, Kindergarten or Math Curriculum; special interest topics; and workshops which are ideal for combined-grade classes. For your convenience, workshop descriptions are organized by grade.

**Request your workshop:** We accept workshop requests throughout the year. You may choose to fax/mail a completed booking form or to book online at [www.scientistsinschool.ca](http://www.scientistsinschool.ca). All online booking requests will receive a confirmation email acknowledging receipt of your request.

**ALLERGY ADVISORY:** Our workshop kits contain a wide variety of diverse items and are handled by many students. While we regularly maintain our kits for cleanliness and safety, we cannot guarantee they are free from all allergens. Please advise us of any known allergies in your classroom or special restrictions in your school.

**Send in your deposit:** A \$25 deposit per workshop is required to process your request. Please send in your deposit cheque by mail attached to your booking form, or if booking on-line, attached to your email confirmation. An invoice for the balance of the workshop fee will be sent to your school following completion of your workshop. Please visit our website for booking terms and conditions.

**Reserve your date:** A presenter will contact you to schedule a specific date for your workshop - at the beginning of September if your request was received during the summer months - within 2-3 weeks of receipt of your request during the school year

Please do not hesitate to contact us at any time to check the status of your request. Thank You!

A PDF version of this catalogue is available at: [www.scientistsinschool.ca](http://www.scientistsinschool.ca)

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