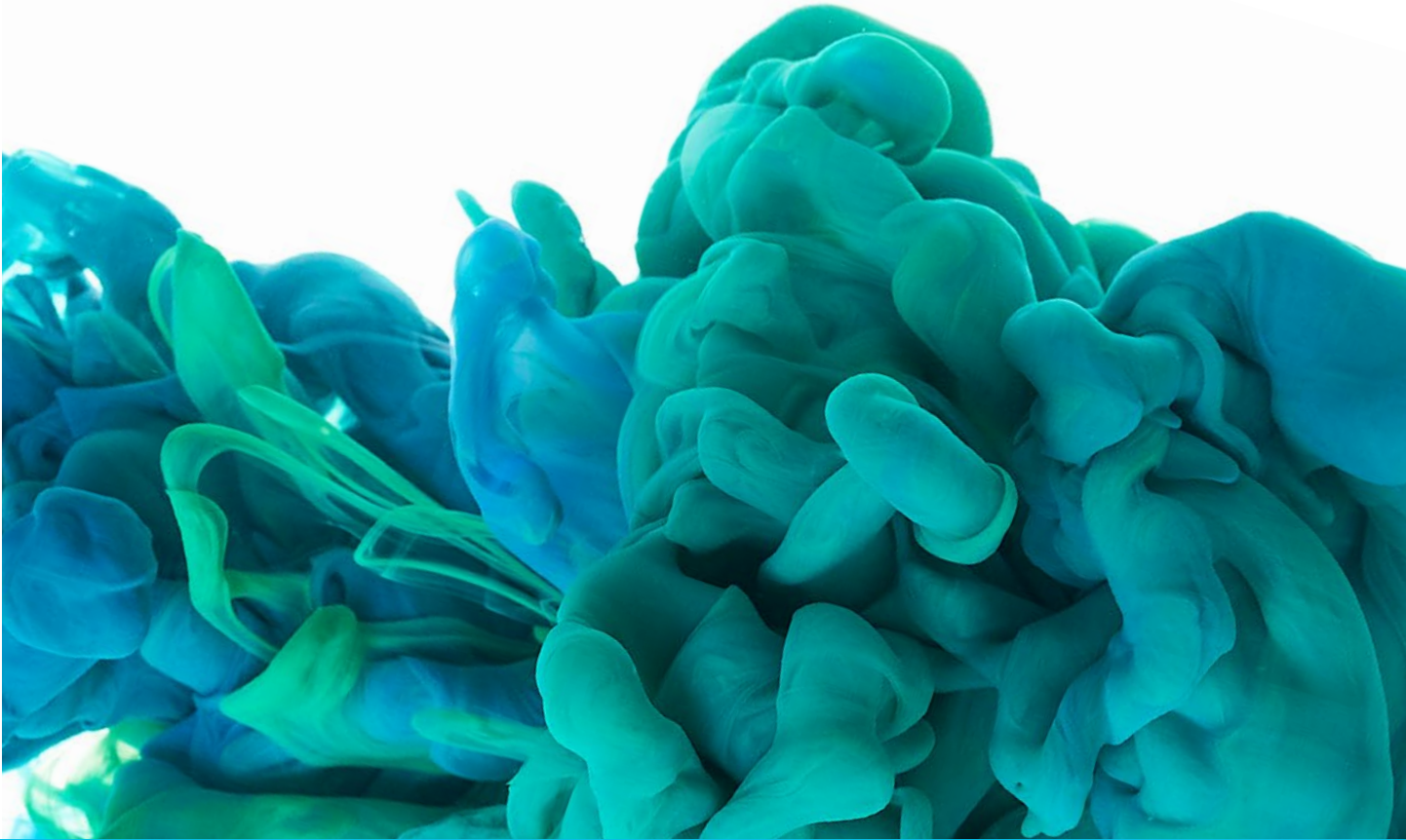


2019-2020
HOMESCHOOL
EDUCATION GUIDE



DISCOVERY PLACE
SCIENCE



HOMESCHOOL CLASS SCHEDULE

AT DISCOVERY PLACE SCIENCE

	DATES	GRADE PRE K-K	GRADES 1-2	GRADES 3-4
2019	September 9	Storybook Science	Animals Around the World	MAKE: Survival Skills
	September 23	Secret Lives of Bugs	a-MAZE-ing	DIY Rocketry
	October 7	Stuck On	Rainforest Explorers	Motors, Circuits, Arts
	October 21	Recipe for a Rainforest	Small Science	Sewing and Embroidery*
	November 4	Space Race	Candy Chemistry	Sewing and Embroidery*
	November 18	Color Investigation	Grab on to Gravity	You are what You Eat
	December 2	Conquering the Cold	What on Earth	Circulatory Highway
	December 16	Bouncing Bubbles	Invention Studio	Take a Breath
2020	January 6	Crack the Code	Wonders of Water	Senses
	January 13	Exhibit Design	Dazzling Defenses	Science of Exercise
	February 3	Mysterious Matter	Food for Thought	What's the Matter
	February 10	Eat What?	Machine Shop	Electricity
	March 2	Spring Science	Peculiar Plants	Earth & Moon
	March 16	Tiny Tinkering	Lights, Colors, Action	Force & Motion
	April 6	Sticky, Slimy Science	Animal Architects	Basic Robotics
	April 20	STEAM	Our Planet	Earth Structures
	May 4	Float Your Boat	Power Up	Fossil Fun
	May 18	Fascinating Flora	Seasonal Science	Animal Behavior & Adaptation
	June 1	Animal Olympics	Toy Lab	Invertebrate Investigation
	June 8	Looking Up	Looking Up	Frog Dissection

*Indicates a 2 or 3 class series. Participants are encouraged to take all classes in the series but are permitted to only take the first class or to join at the second class

REGISTRATION INFORMATION

For more information please call 704.372.6261 x300, Monday - Friday 8:00 a.m. - 5:00 p.m.

See a full listing of our Homeschool programs at discoveryplacescience.org

HOMESCHOOL CLASS SCHEDULE CONT.

AT DISCOVERY PLACE SCIENCE

	DATES	GRADES 5-6	GRADES 7-8	GRADES 9-12
2019	September 9	Secret Life of Plants	Advanced Robotics I*	Transforming Bacteria
	September 23	Operation Fungi or Mycology	Advanced Robotics II*	Fruit Fly Genetics
	October 7	Mammal Study	Are We Alone	Cell Membrane Transport
	October 21	Investigating Climate	Chemistry of Combustion	Cancer Study
	November 4	Ins & Outs of H ₂ O	Waves of Sound	Detecting GMO's
	November 18	DIY Wooden Charging Station	Plant Diversity	Elemental Flame Test
	December 2	3D Modeling and Hydro Dipping*	Soil Science	Stoichiometry
	December 16	3D Modeling and Hydro Dipping*	Animal Diversity	Work on an Inclined Plane
2020	January 6	Advanced Sewing and Embroidery*	Vertebrate Zoology	Hooke's Law
	January 13	Advanced Sewing and Embroidery*	Animal Relationships	Acceleration of a Falling Object
	February 3	Intro to Biotech Tools	Jewelry Making*	Concepts of Chromatography
	February 10	Histology for Beginners	Jewelry Making*	Microbiology
	March 2	Heart Healthy	Mold Making and Casting	Isopod Behavior
	March 16	Brain Games	Advanced 3D Modeling w/ Circuits	Mammal Anatomy
	April 6	Intro to Genetics	Digital Embroidery	Demography Lab
	April 20	Aerospace I*	Take a Cellfie	3D Printing on Textiles
	May 4	Aerospace II*	Forensics	Laser Cutting 101*
	May 18	Programming Basics	Biochemistry of Cells	Laser Cutting 101*
	June 1	Energy Efficiency	Genetics	CNC Routing
	June 8	Architectural Engineering	Viruses, Fungi, and Bacteria Oh My!	Cosplay 101

*Indicates a 2 or 3 class series. Participants are encouraged to take all classes in the series but are permitted to only take the first class or to join at the second class.

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HOMESCHOOL OFFERINGS

AT DISCOVERY PLACE SCIENCE

Homeschool students can enjoy engaging science classes offered in state-of-the-art labs taught by trained science educators.

CLASSES

With classes covering three different age groups, siblings can all have unique, age-appropriate experiences.

- 90 Minutes
- 1:30 - 3:00 p.m.
- Monday Afternoons

\$	1 Class	\$15 Member	\$20 Non-Member
	10 Classes	\$140 Member	\$190 Non-Member
	20 Classes	\$250 Member	\$350 Non-Member

GRADES PRE K - K

STORYBOOK SCIENCE

SEPTEMBER 9

Can your house stand up to the Big Bad Wolf? Can you build a bridge over the river? Use engineering skills to test the science behind some of your favorite stories.

SECRET LIVES OF BUGS

SEPTEMBER 23

Enter the bug world and explore amazing adaptations, mysterious metamorphosis and lots of legs. Learn about lifecycles and the benefits of bugs.

STUCK ON

OCTOBER 7

Investigate the pull magnets have on objects, discover what can resist that pull and test the strength of magnets in this action-packed class.

RECIPE FOR A RAINFOREST

OCTOBER 21

Unearth the basic ingredients needed to create these tropical treasures. Explore rainforest layers, investigate animal adaptations and discover the forest's abundant resources.

SPACE RACE

NOVEMBER 4

How would you land on Jupiter when there is no solid ground? How could you stay cool on a trip to Venus? Learn about each of the planets in our solar system, then design a space craft to explore your favorite planet.

COLOR INVESTIGATION

NOVEMBER 18

Reveal the inside of a rainbow as you explore and experiment with light and color. Mix colors and learn how light hides all the colors.

CONQUERING THE COLD

DECEMBER 2

Get ready for winter by testing out cool adaptations used by plants and animals (and people) to survive the winter or any icy environment.

BOUNCING BUBBLES

DECEMBER 16

Peak inside a bubble and find the science hiding inside. Quick before the bubble bursts!

CRACK THE CODE

JANUARY 6

Escape the maze, solve the puzzle and crack the code in this exciting class that develops science and observation skills in a unique hands-on way.

EXHIBIT DESIGN

JANUARY 13

Go on a scavenger hunt for simple machines and then use them to recreate an exhibit in the classroom.

MYSTERIOUS MATTER

FEBRUARY 3

Use your 5 senses to uncover the secret of the mystery matter. What is it? What does it do? Work on observation and problem-solving skills in this imaginative class.

EAT WHAT?

FEBRUARY 10

Look inside your favorite foods and discover what your body needs to grow big and strong. Learn ways to make smart food choices and build the perfect plate.

SPRING SCIENCE

MARCH 2

Bees are buzzing, flowers are blooming and spring is in the air. Time to take a look into the science behind our favorite signs of spring.

TINY TINKERING

MARCH 16

It's tool time for our tiny tinkerers. See what you can create using real toys and materials. Go through the design process to turn your idea into a creation.

STICKY, SLIMY SCIENCE

APRIL 6

Squid ink, snail slime and spider silk oh my! Discover the squishy secrets of slimy science and where it is used in nature.

STEAM

APRIL 20

What's the A in STEAM? Art! Connect art and science in this unique class that uses science to create art.

FLOAT YOUR BOAT

MAY 4

Will it sink or float? It's up to you as we experiment with different materials and build a boat to race through the water table.

FASCINATING FLORA

MAY 18

Are plants alive? Find out as you examine the parts of plants and discover how they allow plants to survive.

ANIMAL OLYMPICS

JUNE 1

Compete against some amazing animal athletes to see who will win the gold. Who jumps longest? Runs fastest? Travels the farthest?

LOOKING UP

JUNE 8

Explore the night sky inside our inflatable Starlab Planetarium. Look up to see the stars, the moon and the planets that light up our night sky.

GRADES 1-2

ANIMALS AROUND THE WORLD

SEPTEMBER 9

Travel around the world as we discover animals from across the globe. How can animals live in some of the harshest conditions on our planet? Find out as we explore different habitats and the adaptations needed to live there.

A-MAZE-ING

SEPTEMBER 23

Navigate through mazes to help inspire you to create your own maze.

RAINFOREST EXPLORERS

OCTOBER 7

Explore the rainforest and discover what makes this environment so special. Meet rainforest animals and learn how you and the rainforest are connected.

SMALL SCIENCE

OCTOBER 21

Can you imagine experimenting with things too small to see? Welcome to the nanoscale where we will try our hand at some of the smallest science and technology. Learn how things change when you shrink them down to the size of molecules.

CANDY CHEMISTRY

NOVEMBER 4

Too much Halloween candy? Use it for science! These sweet chemistry experiments are even better than eating candy.

GRAB ON TO GRAVITY

NOVEMBER 18

Gravity is the force that is always pulling things down to Earth. Can you stop it? Engineer contraptions and test ways to fight the pull of gravity.

WHAT ON EARTH

DECEMBER 2

Learn to read a map and use a compass as you explore Earth's land forms. Discover how land forms are made and work on forming your own.

INVENTION STUDIO

DECEMBER 16

Use some of the world's most impressive inventions as inspiration to design and build your own invention prototype.

WONDERS OF WATER

JANUARY 6

Take a closer look at the substance that covers over 70% of our planet - water!

DAZZLING DEFENSES

JANUARY 13

Why is a poison dart frog so brightly colored? Why does a porcupine have such sharp quills? Make connections between senses and animal defenses as you reveal how animal senses differ from your own and discover ways that animals defend themselves.

FOOD FOR THOUGHT

FEBRUARY 3

The foods you eat and the games you play all help you stay strong and healthy. Learn ways to make healthy choices and find out what is inside foods and how they help you to grow.

MACHINE SHOP

FEBRUARY 10

Even the coolest, most complicated things were built using simple machines. What can you build using simple machines? Find out in this hands-on class that explores mechanical advantage and construction.

PECULIAR PLANTS

MARCH 2

Unearth the peculiar adaptations that plants use for survival and defense. Dissect the parts of a plant and discover their purpose.

LIGHTS, COLORS, ACTION

MARCH 16

Figure out what a rainbow is made of and explore the color wheel. Use light to make things glow and see things that make their own light.

ANIMAL ARCHITECTS

APRIL 6

Could you build a dam like a beaver or weave a nest like a bird? Take a look at some amazing animal builders and try to build your own animal structure.

OUR PLANET

APRIL 2

Celebrate the 50th anniversary of Earth Day by looking below the surface to find out what the Earth is made of and ways we can help keep our planet healthy.

POWER UP

MAY 4

Test out different ways to make and use electricity as we explore where electricity comes from and how it powers our world.

SEASONAL SCIENCE

MAY 18

It's almost summer, but what happened to winter? Explore why the seasons change and the cool science that happens throughout the year.

TOY LAB

JUNE 1

Make a toy that uses science - spinning tops and balancing birds. Learn about science concepts as you learn about science concepts in this fun hands-on class.

LOOKING UP

JUNE 8

Explore the night sky inside our inflatable Starlab Planetarium. Look up to see the stars, the moon and the planets that light up our night sky.

GRADES 3-4

MAKE: SURVIVAL SKILLS

SEPTEMBER 9

Thinking of taking a trip into the great outdoors soon? Learn basic skills to thrive using nature's resources.

DIY ROCKETRY

SEPTEMBER 23

Learn how rockets work, build your own and test it out!

MOTORS, CIRCUITS, ARTS

OCTOBER 7

Using markers, motors and basic crafting tools, make a robot that can draw.

SEWING AND EMBROIDERY: PART 1

OCTOBER 21

Learn a variety of sewing techniques using *Thinker Space* tools and materials.

SEWING AND EMBROIDERY: PART 2

NOVEMBER 4

Continue trying your hand at different sewing techniques using *Thinker Space* tools and materials.

YOU ARE WHAT YOU EAT

NOVEMBER 18

Gain a better understanding of why we need vitamins, minerals and exercise in our daily lives. Investigate nutritional labels and learn how calories give us energy.

CIRCULATORY HIGHWAY

DECEMBER 2

Explore how nutrients are delivered throughout your body by your heart and blood vessels. Learn the importance of balanced nutrition and a healthy lifestyle for your heart.

TAKE A BREATH

DECEMBER 16

Explore how humans get the air they need to survive. Learn more about the importance of a healthy lifestyle and your lungs.

SENSES

JANUARY 6

Examine the five senses and what they tell our brains about the world around us.

SCIENCE OF EXERCISE

JANUARY 13

Study the body in motion and gain a better understanding of exactly what it takes to finish that race, make that basket or score that goal. Discover the importance of the human body and nutrition in active play.

WHAT'S THE MATTER?

FEBRUARY 3

Don't let the phase fool you - it's all matter. Explore density and molecular motion as you investigate the phases of matter through a series of hands-on experiments that emphasize lab directions and phase changes.

ELECTRICITY

FEBRUARY 10

Our whole world is powered by a particle too small to see. Discover how it works and how to control the source of lightning through building circuits. Finish by investigating the connection between electric fields and magnetism.

EARTH & MOON

MARCH 2

Our moon is more unique and mysterious than you know. From tides to climate, learn about its beginning and eventual end. Recreate the moon phases in an interactive manner and see what makes our moon special.

FORCE & MOTION

MARCH 16

Inertia is a property of matter. For every action, there is an equal and opposite reaction. Familiar terms from Isaac Newton and his three laws of motion. A deeper exploration of these laws will help us to complete challenges and better understand our world.

BASIC ROBOTICS

APRIL 6

Robots are becoming more and more common, especially in our homes. Learn the basics of control and programming to open the doors to the future.

EARTH STRUCTURES

APRIL 20

Exploding volcanoes, moving faults and water erosion! Unearth our planet's unique physical features through various hands-on activities including model building, map reading and diagrams. Learn how water shapes and changes our Earth utilizing a stream table.

FOSSIL FUN

MAY 4

Explore Earth's history through various geological periods by analyzing fossils. Compare fossil types and ways they are created by observing various fossils from our collection. Become a paleontologist, learn about casting and excavate a fossil to take home!

ANIMAL BEHAVIOR & ADAPTATION

MAY 18

Observe, experiment and discover some of the fascinating behaviors and adaptations of animals and how various factors affect them. Students explore a variety of living things and participate in guided-inquiry activities on this adventure. Live animal encounters will enhance the learning experience.

INVERTEBRATE INVESTIGATION

JUNE 1

Invertebrates account for 97% of all living things! Analyze this diverse group of organisms that span over 8 phyla, meet some of our fascinating bugs and learn how these creepy crawlies have adapted to life on land, under water and even in space.

*Participants are encouraged to take both classes but may join at the second class.

FROG DISSECTION

JUNE 8

Investigate the diverse class of amphibians. Get an up-close look at our cold-blooded vertebrates and how they've adapted to life in various ecosystems. Learn about frog anatomy and how it is similar to our own.

GRADES 5-6

SECRET LIFE OF PLANTS

SEPTEMBER 9

Investigate the basic structure of green plants and how they adapt to both biotic and abiotic factors, as well as influence the cycles through which energy and matter flow.

OPERATION FUNGI OR MYCOLOGY

SEPTEMBER 23

Uncover the secret world of molds, fungi and yeast unlocking what environments allow this macroscopic life to thrive. Learn the anatomy of fungi with a mushroom dissection and learn how to clone a mushroom.

MAMMAL STUDY

OCTOBER 7

How do researchers study mammals in the wild? Investigate the world of mammals and learn about the internal anatomy of a rat through dissection.

INVESTIGATING CLIMATE

OCTOBER 21

Learn how climate is regulated by complex interactions of Earth and its inhabitants. Analyze how human activities impact Earth's climate by creating your own greenhouse effect and observing how this increase in CO2 affects our oceans.

INS & OUTS OF H₂O

NOVEMBER 4

Students will learn how water moves through the water cycle and gets to your sink. Learn about different types of water pollution and participate in an interactive case study to find the source of pollution.

DIY WOODEN CHARGING STATION

NOVEMBER 18

Using the human-centered design process, create a personalized wooden object to house your accessories. Participants will learn basic CAD software and CNC routing skills.

ADVANCED 3D MODELING AND HYDRO DIPPING: PART 1

DECEMBER 2

Using Blender, participants will create a vase. In our second workshop, we will customize our 3D prints.

ADVANCED 3D MODELING AND HYDRO DIPPING: PART 2

DECEMBER 16

After creating a vase in the first part of this series, we will use a process known as hydro dipping to transfer graphics onto our 3D prints using water and hydrographic film.

ADVANCED SEWING AND EMBROIDERY: PART 1

JANUARY 6

Learn a variety of sewing techniques using *Thinker Space* tools and materials.

ADVANCED SEWING AND EMBROIDERY: PART 2

JANUARY 13

Continue to hone sewing techniques using *Thinker Space* tools and materials.

INTRO TO BIOTECH TOOLS

FEBRUARY 3

Get introduced to a wide variety of tools used by scientists. Explore how these tools are used in the exciting world of biotechnology.

HISTOLOGY FOR BEGINNERS

FEBRUARY 10

Get introduced to the microscopic study of human tissue. Compare human tissue slides and discover the importance of histology to science.

HEART HEALTHY

MARCH 2

Explore what it takes to keep your heart healthy. Build a better understanding of the importance of this powerful organ.

BRAIN GAMES

MARCH 16

Explore the electric world of your nervous system. Learn more about reflexes, balance and how your brain works.

INTRO TO GENETICS

APRIL 6

Get introduced to the science of inherited traits by discovering why organisms are similar to their parents.

AEROSPACE I

APRIL 20

In almost half a century, humans went from first flight to the moon. We'll start with airplanes, from the very first to the modern and figure out how they fly.

AEROSPACE II

MAY 4

Make one small step for yourself by learning rocketry's history and space travel's future. Learn the basics of rockets and build one to try and escape Earth. Requires Aerospace I

PROGRAMMING BASICS

MAY 18

More than just lines of code, programming is its own living language that can make robots move, work and dance. Learn how to control your own robot by starting to learn this language.

ENERGY EFFICIENCY

JUNE 1

How can you save money at home by making a few simple changes? What's with those new curly lightbulbs? Let's be more efficient together by sifting through what's practical and what's myth when it comes to green energy and how to conserve it.

ARCHITECTURAL ENGINEERING

JUNE 8

Bridges and buildings need to hold up a lot of weight and withstand the elements. Can you build one that survives catastrophe? What forces are at constant war with human structures and how did engineers overcome them to make our tallest and most impressive buildings?

*Participants are encouraged to take both classes but may join at the second class.

GRADES 7-8

ADVANCED ROBOTICS I

September 9

Learn to program a Lego EV3 robot to complete a series of challenges designed to test your critical thinking skills.

ADVANCED ROBOTICS II

September 23

Continue our challenge and build on your robotics skills by including sensors for your robot to interact with its environment. Requires Advanced Robotics I.

ARE WE ALONE?

October 7

Discuss the current theories and possible locations of life outside our planet and what scientists and amateurs alike are doing to find life inside and outside our solar system. Whether we are or aren't alone, both answers are equally interesting..

CHEMISTRY OF COMBUSTION

October 21

Fire is more complex than the fire triangle and harder to make than you think. So, let's try. Using a series of hands-on experiments you'll attempt to start the chain reaction and discover how to control it.

WAVES OF SOUND

November 4

You think your hearing is good? Not compared to other animals. What can they hear that we can't and how can we see sound?

PLANT DIVERSITY

November 18

Learn the basic characteristics of ten plant phyla, observe the body plans of liverworts, mosses, ferns, gymnosperms, and angiosperms; compare the morphology of monocots and dicots through plant dissection. Make your own slides and investigate cellular respiration.

SOIL SCIENCE

December 2

Examine a soil profile from different environments, learn the effects of topography on the soil moisture in these habitats and compare using qualitative and quantitative methods. Explore Uptown Charlotte's urban environment and determine our soil profile.

ANIMAL DIVERSITY

December 16

Investigate nine animal phyla by observing and comparing different animal forms, functions and habitats. Recognize the major animal phyla, meet a representative organism from each one and create a cladogram.

VERTEBRATE ZOOLOGY

January 6

Take an in-depth look at the Chordata phylum, learn all about the different vertebrate taxonomic groups and what characteristics led scientists to group them this way. Meet some of our favorite vertebrates from the *Explore More Life* lab.

ANIMAL RELATIONSHIPS

January 13

Each organism plays an important role in its ecosystem. Investigate the symbiotic relationship between mites and cockroaches and use a compound microscope to explore the gut bacteria of termites.

JEWELRY MAKING: PART 1

February 3

Learn how to pierce sheet metal, shape wire and weave with beads.

JEWELRY MAKING: PART 2

February 10

Continue your work of art - pierce sheet metal, shape wire and weave with beads!

MOLD MAKING AND CASTING

March 2

Learn how to create molds and cast them in a variety of materials like chocolate, soap, resin and more.

ADVANCED 3D MODELING W/ CIRCUITS

March 16

Using Tinkercad, we will 3D model and print designs that can house LEDs.

DIGITAL EMBROIDERY

April 6

Learn about computerized embroidery and create designs using CAD design software.

TAKE A CELLFIE

April 20

Delve into the human cell and explore the different organelles and how they all contribute to the basic functions of life. Understand how cells form tissues, organs and body systems.

FORENSICS

May 4

Hone your detective skills as you learn the science of fingerprinting, DNA analysis and blood detection. Exercise your powers of deduction to solve the crime.

BIOCHEMISTRY OF CELLS

May 18

Dig a little deeper into the cells that make up our body. Learn the basics about carbohydrates, lipids, proteins and nucleic acids and how our cells use them.

GENETICS

June 1

Explore genotypes, phenotypes, alleles and traits. A variety of guided-inquiry experiments and investigations build a better understanding of genes and heredity.

VIRUSES, FUNGI AND BACTERIA OH MY!

June 8

Learn about various invaders to our human body and how our body fights them off. Grow your own bacteria and be disgusted by what's around you!

GRADES 9-12

TRANSFORMING BACTERIA

**AP level lab
September 9**

We will explore the concepts of genetics and information transfer through this hands-on experiment. Then use Biotechnology skills to learn how genetic engineering can be used to manipulate genetic information.

FRUIT FLY GENETICS

**AP level lab
September 23**

Learn about the basic patterns of heredity using fruit flies in a variety of crosses. Create your own genetic crosses to identify various phenotypes in flies.

*Participants are encouraged to take both classes but may join at the second class.

CELL MEMBRANE TRANSPORT

AP level lab
October 7

Explore the concepts of diffusion and osmosis by observing cellular functions in living cells. Design your own experiment to observe how external factors affect homeostasis.

CANCER STUDY

AP level lab
October 21

Enhance your biotech skills as you study the relationship between mitosis and cancer. Learn about the role of the p53 gene in the cell cycle.

DETECTING GMO'S

AP level lab
November 4

Use your biotech skills to perform a series of tests on certain foods to detect genetically modified foods. Use gel electrophoresis to analyze specific DNA patterns.

ELEMENTAL FLAME TEST

AP level lab
November 18

Explore the many elements that produce a characteristic color when burned in a flame which directly relates to an electron's energy loss. Calculate this energy loss in Group 1 and 2 metals and some transition metals.

STOICHIOMETRY

AP level lab
December 2

Stoichiometry concerns mass relations in chemical formulas and chemical reactions. Determine the mass relation of two chemical compounds and practice mass percent and mole calculations.

WORK ON AN INCLINED PLANE

AP level lab
December 16

Ramps are one of the basic simple machines, but how specifically does a ramp change the way work occurs? Calculate force of kinetic friction, gravitational force and potential energies at a variety of different angles.

HOOKE'S LAW

AP level lab
January 6

Springs and bands have given amounts of stretch or elasticity. Calculate these numbers using Hooke's Law and data logging software.

ACCELERATION OF A FALLING OBJECT

AP level lab
January 13

You'll work to calculate the acceleration of a falling object and compare the result to the accepted value of the acceleration of a freely-falling object near the surface of the Earth.

CONCEPTS OF CHROMATOGRAPHY

AP level lab
February 3

Explore how a chromatograph of pigments is formed from both paper and thin layer chromatography through hands-on experimentation. Isolate and identify some of the various pigments in spinach and other plants.

MICROBIOLOGY

February 10

Get introduced to the wonderful world of microorganisms. Learn microbiological techniques like serial dilution and plating, isolating bacteria and identifying common bacteria.

ISOPOD BEHAVIOR

AP level lab
March 2

Become an ethologist by observing and recording the behavior of pillbugs. Build a behavior chamber to analyze and track how they respond to stimuli and then design your very own experiment.

MAMMAL ANATOMY

March 16

Get an in-depth look at the class Mammalia through hands-on activities including a mink dissection. Learn how the Mustelidae family use their physical adaptations to survive in their environment.

DEMOGRAPHY LAB

AP level lab
April 6

Learn how factors such as advances in medicine and environmental protection may have affected human demography over the past 150 years; how human demography might change in the future based on the current socio-political reality and the presence of incurable diseases. Collect cemetery data and construct a survivorship curve. Parent permission slip required.

3D PRINTING ON TEXTILES

April 20

Learn techniques using a variety of textiles and three primary printing techniques to create innovative wearables.

LASER CUTTING 101: PART 1

May 4

Laser cutters are every maker's dream. Participants will learn to use vector-based software to create 2D patterns and designs. Using 3D modeling software, participants will also fabricate complex 3D objects on the laser.

LASER CUTTING 101: PART 2

May 18

Laser cutters are every maker's dream. Participants will learn to use vector-based software to create 2D patterns and designs. Using 3D modeling software, participants will also fabricate complex 3D objects on the laser.

CNC ROUTING

June 1

Learn about subtractive manufacturing and the pipeline from design, to prototype, to finished product using a CNC router.

COSPLAY 101

June 8

Step into a world where pop culture, fashion and digital fabrication collide! Create props and wearables with real life cosplayers.



WORKSHOPS

AT DISCOVERY PLACE SCIENCE

Multi-session workshops are 90-minute programs over five days focusing on a single science topic. Exciting and educational, workshops allow students to explore a subject in-depth.

90 Minutes

1:00 - 2:30 or 2:30 - 4:00 p.m.

Wednesday Afternoons

See grade specific times below

\$ 1 Workshop
\$75 Member \$100 Non-Member

5 Workshops
\$250 Member \$350 Non-Member

3D PRINTING

October: 2, 9, 16, 23, 30

2:30-4:00 p.m.

Utilize freeware and additive manufacturing to explore concepts of 3D modeling and 3D printing. Learn a variety of innovative 3D printing techniques and post-processing methods.

LASER PRINTING

May: 6, 13, 20, 27 June:3

2:30-4:00 p.m.

If you enjoy the combination of science and art, this is the workshop for you. Learn to design and laser cut a variety of 2D and 3D objects using CAD programs, Adobe Illustrator and other vector based programs

ROBOTICS

October: 2, 9, 16, 23, 30

1:00-2:30 p.m.

Work with LEGO® NXT robots to explore the concepts of robot assembly, simple motion programming, utilization of sensors, loops and switches. Then devise creative solutions to complete a set of robot challenges.

HUMAN ANATOMY

May: 6, 13, 20, 27 June:3

1:00-2:30 p.m.

Compare and contrast the human body with other animals. Through dissections you will discover how the body is divided into different systems and learn about organs and their function



EDUCATIONAL FILMS

 Approximately 40 minutes

 See website for showtimes

 \$5 with class or workshop
(IMAX only tickets available)

PANDAS

March 29 – September 27, 2019

Come along on an exciting and educational journey that offers an up-close look at a species loved the world over – Giant Pandas.

Pandas follows a researcher at Chengdu Panda Base in China where scientists are dedicated to protecting the species by breeding adult Giant Pandas in order to introduce the captive-born cubs into the wild. The researcher's passion leads her to initiate a new technique inspired by a black bear rehabilitator in rural New Hampshire. What starts as a cross-cultural collaboration becomes a life-changing journey for one special panda named Qian Qian. Join Qian Qian on her breathtaking new adventure in the mountains of Sichuan as she takes her first steps outside her protected habitat, discovering her true animal nature.

SUPERPOWER DOGS

June 29 – December 27, 2019

In this inspiring true story, our best friends are also real life superheroes. Journey around the globe to meet remarkable dogs who save lives and discover the powerful bond they share with their human partners.

Follow 'Halo', a rookie puppy training to join one of the most elite disaster response teams in America. Meet 'Henry', an avalanche rescue expert in the Canadian Rockies, 'Reef', a Newfoundland lifeguard with the Italian coastguard, 'Ricochet', a Californian surf legend helping people with special needs, and the Bloodhound brothers, 'Tipper and Tony', who are leading the fight to save endangered species in Africa. As we discover the incredible abilities of dogs and the astonishing science behind their superpowers, we'll never look at our best friends the same way again!