**SFSCA Science NGSSS Aligned Programs**

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| **PLANETARIUM SHOWS** **Elementary School** | **Description** | **Big Ideas**  | **NGSSS**  |
| Astronaut  | Would you like to learn what it’s like to travel through space or to work on the International Space Station? Learn what it takes to be an astronaut as you travel into space in this digital fulldome planetarium show.  | Big Ideas: 5- Earth in Space and Time 14- Organization and Development of Living Organisms | SC.3.E.5.4 SC.4.E.5.5 SC.5.L.14.1  |
| Bugs!: A Rainforest Adventure | This full dome show will take you into the fascinating universe of insects magnified up to 250,000 times normal size where a leaf weighs as much as a car and a single raindrop can quench the largest thirst. | Big Ideas: 14- Development of Living Organisms 15- Diversity of Living Organisms 16- Heredity and Reproduction 17- Interdependence | SC.5.L.14.2 SC.5.L.15.1 SC.4.L.16.3 SC.4.L.16.2SC.5.L.17.1  |
| Dinosaurs Alive (Grades 3-5) (Only at the Science Center) | Journey through the Triassic and Cretaceous periods with renowned paleontologists hunting for fossilized clues, uncovering evidence that dinosaur descendants may still walk (or fly) among us today.  | Big Ideas:1- The Practice of Science 15- Diversity and Development of Living Organisms17- Interdependence | SC.3.N.1.5SC.4.N.1.7 SC.5.L.15.1 SC.5.L.17.1  |
| Kaluoka ‘hina: The Enchanted Reef | A digital fulldome planetarium show, this animated feature film transports the viewer to a tropical reef, a one-of-a-kind world inhabited by amazing creatures.  | Big Ideas: 17- Interdependence | SC.3.L.17.1SC.5.L.17.1  |
| Solar System Odyssey (Only at the Science Center) | Learn about all of the planets and major moons in our solar system on a futuristic space mission to explore the necessities for life. | Big Ideas: 2- The Characteristics of Scientific Knowledge 5- Earth in Space and Time | SC.5.N.2.1 SC.4.E.5.2 SC.5.E.5.2 SC.5.E.5.3 |
| Stars and Constellations  | What are stars made of? Is there a cold star? Find out as our science educator takes you into the night sky in our 360° planetarium and reveals the myths behind the famous constellations.  | Big Ideas: 5- Earth in Space and Time | SC.3.E.5.1 SC.4.E.5.1 SC.5.E.5.1 SC.3.E.5.2  |

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| **LABS** **Elementary School** | **Description** | **Big Ideas / NGSS** | **NGSSS**  |
| Chemical Concoctions | Students will have the opportunity to make their own polymers while conducting experiments that reinforce chemistry concepts of atoms, density and changes in states of matter. | Big Ideas: 1- The Practice of Science 8- Properties of Matter 9- Changes in Matter  | SC.1.N.1.2SC.2.P.8.1SC.2.P.8.2SC.4.P.8.1SC.5.P.9.1 |
| Circuit Science  | Students will take an electrifying look at how electricity gets around. This hands-on lab allows students to create their very own functioning electrical circuits and introduces some functional concepts like open vs. closed circuits, the difference between conductors and insulators, and much more. Students will use their newfound knowledge to construct a simple motorized robot of their very own! | Big Ideas: 10- Forms of Energy | SC.4.P.10.1SC.4.P.8.4SC.5.P.8.4SC.5.P.10.1SC.5.P.10.2SC.5.P.10.2SC.5.P.11.1SC.5.P.11.2SC.5.P.11.3 |
| Digging Around the World (Only at the Science Center) | Students will explore the field of paleontology as they dig for fossils as well as make models of them. | Big Ideas: 15- Diversity and Development of Living Organisms | SC.1.N.1.2SC.1.E.6.1 SC.2.E.6.2SC.3.N.3.2SC.4.E.6.1 |
| Dissections | Study anatomical structures and how these relate to body systems function in a squid or frog. Our expert educator will provide specimens, equipment and worksheets for this hands on dissection lab. | Big Ideas: 14- Organization and Development of Living Organisms 17- Interdependence | SC.5.L.14.1SC.5.L.14.2SC.6.L.14.5 |
| Engineering is Elementary  | Students will gain first hand engineering practice as they use logical thinking, problem solving, and creativity to plan, build, test, and tweak a project that solves a physical engineering problem.  | Big Ideas: 3- The Role of Theories, Laws, Hypotheses, and Models 10- Forms of Energy 12- Motion of Objects | SC.4.E.6.3SC.4.P.10.4SC.5.P.10.1 |
| Everglades: All About the Alligator (Only at the Science Center)  | Students will learn all about food webs, Florida’s fascinating ecosystems and the anatomy of a real alligator. | Big Ideas: 14- Organization and Development of Living Organisms | SC.K.L.14.3SC.1.E.6.1SC.1.L.17.1SC.3.L.15.1SC.3.L.17.2[SC.4.L.17.3](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1703.aspx?kw=food%20chain)SC.5.L.15.1 |
| Investigating Insects  | Hold live insects in the palm of your hand as we discuss habitats, characteristics and the beneficial role that insects play in our environment.  | Big Ideas: 14- Organization and Development of Living Organisms 17- Interdependence | SC.K.L.14.3SC.1.L.14.1SC.3.L.15.1SC.5.L.17.1SC.5.L.14.2 |
| Panthers Physics Lab | In this unique program, students are introduced to the fascinating concepts of gravity, force, friction and motion using Newton’s Laws of Motion! | Big Ideas: 3- The Role of Theories, Laws, Hypotheses, and Models 10- Forms of Energy 13- Forces and Changes in Motion | SC.K.P.13.1SC.1.P.12.1SC.2.P.13.1SC.3.E.5.4SC.4.P.10.2SC.5.P.10.2SC.5.P.13.1 |
| Pollinating Plants and Flower Dissection  | Enjoy an interactive flower dissection activity and find out more about the flower petals, sepals, anther, stamens, and how each play a role in the life cycle of all living things. | Big Ideas: 14- Organization and Development of Living Organisms | SC.3.L.14.1SC.3.L.14.2SC.3.L.15.2SC.3.L.17.1SC.3.L.17.2SC.4.L.16.2SC.4.L.17.2SC.4.L.17.4 |
| Shark Tooth Lab | Student teams will utilize scientific observation to sort and classify genuine fossil shark teeth, examine real shark jaw specimens, learn about various shark habitats, and create their own shark tooth necklaces.  | Big Ideas: 15- Diversity and Development of Living Organisms 16- Heredity and Reproduction 17- Interdependence  | SC.5.L.14.2SC.5.L.15.1SC.5.L.17.1 |
| Technology Today | Learn the basics of the world of electronics and computer science using the latest advancements in modular electronics and creating real working automated machines.  | Big Ideas: 10- Forms of Energy | SC.2.P.10.1 SC.3.P.10.1 SC.5.P.10.4SC.5.P.11.1SC.5.P.8.4 |

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| **DEMONSTRATIONS Elementary School** | **Description** | **Big Ideas** | **NGSSS** |
| Exciting Electrons | Electrifying, hands-on demonstrations which include testing the strength of an electromagnet and experiencing the static electricity from a Van der Graaf Generator. | Big Ideas: 10- Forms of Energy | SC.3.P.10.1SC.3.P.10.2SC.3.P.11.2SC.4.P.8.4SC.4.P.10.1SC.4.P.10.2 |
| Nitromania | Students will see physical changes occur before their very eyes as they learn about the states of matter in this “chilling” program about liquid nitrogen. | Big Ideas: 8- Properties of Matter 9- Changes in Matter | [SC.2.P.8.4](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1612.aspx?kw=observe)[SC.2.P.8.3](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1615.aspx?kw=solid)SC.3.P.9.1SC.4.P.8.2SC.5.P.8.4SC.5.P.9.1 |
| Touch Tank (Only at the Science Center) | Experience ocean organisms through observation, touch and fun narration while learning about animals’ internal and external structures that keep them alive.  | Big Ideas: 14- Organization and Development of Living Organisms | SC.1.L.14.1SC.2.L.17.2SC.3.L.15.1SC.5.L.17.1  |

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| **PLANETARIUM SHOWS****Middle School** | **Description** | **Big Ideas** | **NGSSS** |
| Astronaut  | Would you like to learn what it’s like to travel through space or to work on the International Space Station? Learn what it takes to be an astronaut as you travel into space in this digital fulldome planetarium show.  | Big Ideas: 5- Earth in Space and Time 14- Organization and Development of Living Organisms | SC.8.E.5.4 SC.8.E.5.10 SC.6.L.14.5 SC.8.N.1.6  |
| Dynamic Earth  | Students will explore the inner workings of Earth’s climate system as they ride along on swirling ocean and wind currents, dive into the heart of a monster hurricane, come face-to-face with sharks and gigantic whales, and fly into boiling volcanoes. | Big Ideas: 5- Earth in Space and Time 7- Earth Systems and Patterns | SC.8.E.5.9 SC.6.E.7.2SC.6.E.7.9 SC.6.E.7.3SC.6.E.7.5  |
| Black Holes: The Other Side of Infinity | Viewers encounter a range of spectacular cosmic wonders, including a depiction of the beginning of the universe, the first stars, the collision of two galaxies, and a virtual trip into the center of the Milky Way galaxy, as they witness a scientifically accurate perspective on black holes.  | Big Ideas: 2- The Characteristics of Scientific Knowledge 5- Earth in Space and Time | SC.8.E.5.5 SC.8.E.5.4SC.6.N.2.2 |
| Dinosaurs Alive (Only at the Science Center) | Journey through the Triassic and Cretaceous periods with renowned paleontologists hunting for fossilized clues, uncovering evidence that dinosaur descendants may still walk (or fly) among us today.  | Big Ideas: 1- The Practice of Science 15- Diversity and Development of Living Organisms | SC.7.L.15.2SC.7.L.15.1SC.7.L.15.3SC.7.L.17.2  |
| Solar System Odyssey (Only at the Science Center) | Learn about all of the planets and major moons in our solar system on a futuristic space mission to explore the necessities for life. | Big Ideas: 2- The Characteristics of Scientific Knowledge 5- Earth in Space and Time | SC.8.E.5.7 SC.8.E.5.4 SC.8.E.5.9 |
| Stars and Constellations  | What are stars made of? Is there a cold star? Find out as our science educator takes you into the night sky in our 360° planetarium and reveals the myths behind the famous constellations.  | Big Ideas: 2- The Characteristics of Scientific Knowledge 5- Earth in Space and Time | SC.8.E.5.5 SC.8.E.5.6 |

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| **LABS****Middle School** | **Description** | **Big Ideas** | **NGSSS** |
| Brain in Action | Hold a brain in the palm of your hand to discover the structure and function of this three pound organ and its role in coordinating all five senses.  | Big Ideas: 14- Organization and Development of Living Organisms | SC.6.L.14.1SC.6.L.14.5 |
| Chemical Concoctions | Students will have the opportunity to make their own polymers while conducting experiments that reinforce chemistry concepts of atoms, density and changes in states of matter. | Big Ideas: 1- The Practice of Science 8- Properties of Matter 9- Changes in Matter | SC.7.P.11.1SC.8.P.8.1SC.8.P.8.4SC.8.P.8.9SC.912.P.8.1SC.912.P.8.2 |
| Cleaning the Everglades Presented by Harrison Fisher  | This hands-on lab investigates the pollutants in South Florida waters and offers an inquiry-based approach to determining potential cleaning methods. | Big Ideas: 1- The Practice of Science 4- Science and Society 7- Earth Systems and Patterns | [SC.6.E.7.7](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1764.aspx?kw=natural)SC.7.E.6.6 |
| Digging Around the World (Only at the Science Center) | As they transform into paleontologists, students step back in time and dig for fossils to explore the wild world of the past. | Big Ideas: 15- Development of Living Organisms | SC.7.N.1.5SC.7.E.6.4SC.7.L.15.1 |
| Dissections | Study anatomical structures and how these relate to body systems function in a squid, frog, spiny dogfish shark, or fetal pig. Our expert educator will provide specimens, equipment and worksheets for this hands-on dissection lab. | Big Ideas: 14- Organization and Development of Living Organisms 17- Interdependence | SC.6.L.15.1SC.6.L.14.5SC.6.L.14.1 |
| DNA in Motion | Students will use cell models to explore the different parts of an animal cell, take a look at their own cells, and work as genetic scientists to isolate DNA by using real world technology in this hands-on lab. | Big Ideas: 4- Science and Society 15- Diversity and Development of Living Organisms 16- Heredity and Reproduction | SC. 6.L.14.2SC. 7.L.16.1SC. 8. N.2.2  |
| Engineering is Elementary | Students will gain first hand engineering practice as they use logical thinking, problem solving, and creativity to plan, build, test, and tweak a project that solves a physical engineering problem | Big Ideas: 10- Forms of Energy 12- Motion of Objects | SC.7.P.11.2 |
| Heart in Motion Lab | Students use EKG (electrocardiogram) machines to monitor heart rate, compare active versus resting cardiograms and work with their own model heart. | Big Ideas: 14- Organization and Development of Living Organisms | SC.6.L.14.5SC.7.L.16.1SC.8.N.2.2 |
| Investigating Insects | Become an entomologist by observing insects and exploring some of the oldest living creatures on earth. Hold live insects in the palm of your hand as we discuss habitats, characteristics and the beneficial role that insects play in our environment. | Big Ideas: 14- Organization and Development of Living Organisms 17- Interdependence | SC.6.L.15.1SC.7.L.17.1SC.7.L.17.2 |
| Panthers Physics Lab | Our expert educator will incorporate team challenges, multimedia, and real-life examples to show that Newton’s Laws of Motion extend beyond the classroom, in this unique program. | 3- The Role of Theories, Laws, Hypotheses, and Models 12- Motion of Objects 13- Forces and Changes in Motion | SC.6.N.3.2SC.6.N.3.3SC.6.P.13.1SC.6.P.13.2SC.6.P.13.3 |
| Shark Tooth Lab | Student teams will utilize scientific observation to sort and classify genuine fossil shark teeth, examine real shark jaw specimens, learn about various shark habitats, and create their own shark tooth necklaces. | 15- Diversity and Development of Living Organisms 16- Heredity and Reproduction 17- Interdependence | SC.6.L.15.1SC.7.N.1.6 |
| Technology Today | Learn the basics of the world of electronics and computer science using the latest advancements in modular electronics and creating real working automated machines. | Big Ideas: 10- Forms of Energy | SC.7.P.11.2SC.8.P.8.7  |
| 3D Printing and Design (Only at the Science Center) | Students will use modern software to create designs that they can view in a 3D environment. (Not available Jun - Aug) | Big Ideas: 10- Forms of Energy | SC.68.CS-CS.5.1SC.68.CS-CS.6.2SC.68.CS-CS.6.6 |

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| **DEMONSTRATIONS Middle School** | **Description** | **Big Ideas** | **NGSSS** |
| Exciting Electrons | Electrifying, hands-on demonstrations which include testing the strength of an electromagnet and experiencing the static electricity from a Van der Graaf Generator. | Big Ideas: 10- Forms of Energy | SC.8.P.8.4SC.P.8.1SC.8.P.8.7 |
| Nitromania | Students will see physical changes occur before their very eyes as they learn about the states of matter in this “chilling” program about liquid nitrogen. | Big Ideas: 8- Properties of Matter 9- Changes in Matter | SC.7.P.11.1SC.8.P.8.1SC.8.P.8.4SC.912.P.8.1SC.912.P.8.2 |

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| **PLANETARIUM SHOWS****High School** | **Description** | **Big Ideas** | **NGSSS** |
| Dynamic Earth  | Students will explore the inner workings of Earth’s climate system as they ride along on swirling ocean and wind currents, dive into the heart of a monster hurricane, come face-to-face with sharks and gigantic whales, and fly into boiling volcanoes. | Big Ideas: 5- Earth in Space and Time 7- Earth Systems and Patterns | SC.912.E.5.4SC.912.E.6.1SC.912.E.6.6SC.912.E.7.2SC.912.E.7.3SC.912.E.7.9 |
| Black Holes: The Other Side of Infinity | Viewers encounter a range of spectacular cosmic wonders, including a depiction of the beginning of the universe, the first stars, the collision of two galaxies, and a virtual trip into the center of the Milky Way galaxy, as they witness a scientifically accurate perspective on black holes.  | Big Ideas: 2- The Characteristics of Scientific Knowledge 5- Earth in Space and Time | SC.912.E.5.1SC.912.E.5.2SC.912.E.5.7 |
| Dinosaurs Alive (Only at the Science Center) | Journey through the Triassic and Cretaceous periods with renowned paleontologists hunting for fossilized clues, uncovering evidence that dinosaur descendants may still walk (or fly) among us today.  | Big Ideas: 1- The Practice of Science 15- Diversity and Development of Living Organisms | SC.912.L.15.1SC.912.N.3.1 |
| Stars and Constellations  | What are stars made of? Is there a cold star? Find out as our science educator takes you into the night sky in our 360° planetarium and reveals the myths behind the famous constellations.  | Big Ideas: 2- The Characteristics of Scientific Knowledge 5- Earth in Space and Time | SC.912.E.5.2SC.912.E.5.3SC.912.E.5.10SC.912.E.5.5 |

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| **PROGRAMS & LABS** **High School** | **Description** | **Big Ideas** | **NGSSS** |
| Brain in Action | Hold a brain in the palm of your hand to discover the structure and function of this three pound organ and its role in coordinating all five senses.  | Big Ideas: 14- Organization and Development of Living Organisms | SC.912.L.14.50SC.912.L.14.27SC.912.L.14.26 |
| Cleaning the Everglades Presented by Harrison Fisher  | This hands-on water lab activity investigates the waters of South Florida and offers an inquiry-based approach to identifying pollutants in our water and how to clean them. | Big Ideas: 6- Earth Structures 7- Earth Systems and Patterns 17- Interdependence | SC.912.L.17.11SC.912.L.17.19[SC.912.L.17.16](http://www.floridastandards.org/Standards/PublicPreviewBenchmark2041.aspx?kw=environment)[SC.912.L.17.17](http://www.floridastandards.org/Standards/PublicPreviewBenchmark1996.aspx?kw=environment)[SC.912.L.17.18](http://www.floridastandards.org/Standards/PublicPreviewBenchmark2028.aspx?kw=environment)[SC.912.L.17.](http://www.floridastandards.org/Standards/PublicPreviewBenchmark2028.aspx?kw=environment)20[SC.912.L.18.12](http://www.floridastandards.org/Standards/PublicPreviewBenchmark2055.aspx?kw=environment) |
| Dissections | Study anatomical structures and how these relate to body systems’ function in a squid, frog, spiny dogfish shark, or fetal pig. Our expert educator will provide specimens, equipment and worksheets for this hands-on dissection lab. | Big Ideas: 14- Organization and Development of Living Organisms 17- Interdependence | SC.912.L.14.50SC.912.L.14.27SC.912.L.14.26SC.912.L.14.11SC.912.L.14.40 |
| The Great Shark Trek | Using real field equipment and creative problem solving skills, students will learn how to tag and track sharks as they enter the exciting underwater world of these ancient predators and discover the reasons sharks are so important to our oceans. | Big Ideas: 14- Organization and Development of Living Organisms 17- Interdependence | SC.912.N.1.1SC.912.L.15.3SC.912.L.15.4SC.912.L.17.1SC.912.L.17.8SC.912.L.17.9 |
| 3D Printing and Design (Only at the Science Center) | Students will use new software to create designs that they can view in a 3D environment. (Not available Jun - Aug) | Big Ideas: 10- Forms of Energy | SC.912.CS-CC.1.4SC.912.CS-CS.3.1SC.912.CS-CS.6.7 |