STEM+ Expedition Lessons





A TIGER VISITS THE DOCTOR

OMAHA, NEBRASKA

How does a 300 lb. tiger go to the doctor? Explore veterinarian science and see what it is like to perform a physical check-up on a 300 lb. animal!



AEROBATIC FLIGHT SCHOOL

DAYTON, OHIO

Twirls, dives, and death defying stunts define the life of an aerobatic pilot. Fly along with Captain Irving as he defies gravity through aerodynamic principles.



ANIMAL BEHAVIORS

OMAHA, NEBRASKA

Join Captain Irving as he investigates animal behaviors and characteristics with a group of scientists at the Omaha Zoo.



ANIMAL CONSERVATION

SINGAPORE, REPUBLIC OF SINGAPORE

Conservationists are working to conserve endangered species, such as the red panda. Learn about the animal characteristics and habits that zoos across the globe are taking into consideration to create viable habitats for endangered species.



AQUAPONICS

CHATTANOOGA, TENNESSEE

Join Captain Irving as he visits a group of students who have created an aquaponics system that aims to feed the hungry and create sustainable agriculture.



AVIATION ENTREPRENEURSHIP

LAS VEGAS, NEVADA

Private jets and luxury is the focus on this math expedition. Board a multi-million dollar jet and learn about the costs to maintain a private plane. This is not your average airliner!



BATS!

MARSH HARBOUR, BAHAMAS

Visit the Bahamas with Captain Irving as he explores a cave and learns about the mysterious life of bats!



BIONIC CHEF

BOZEMAN, MONTANA

Meet a chef with a bionic arm, learn about the advancement of prosthetics, and how the human nervous system can control robotic limbs.





BLUE ANGELS



BUILD A VIDEO GAME



BUILT BY KIDS

MIAMI, FLORIDA

Explore velocity, altitude, and how the human body reacts to extreme forces along with Captain Irving when he flies with the Blue Angels.

ORLANDO. FLORIDA

Technology and coding advance daily, but how exactly is it used in gaming? Investigate how STEM+ principles are used to design and build video games.

DALLAS. TEXAS

Have you ever dreamed of building a plane or a car? In this expedition, learn about all of the amazing innovations that kids build in Captain Irving's Build and Soar Program.



CAMERA PILL

TEL AVIV, ISRAEL

Take a virtual tour of Captain Irving's digestive system! Investigate the wonders of medical science and how a camera pill can identify potential life threatening problems hiding in the digestive tract.



CAPTAIN IRVING

MIAMI, FLORIDA

Captain Irving is a global explorer and world-famous aviator, but he faced challenges to achieve his dreams and success. Learn all about Captain Irving and how he became a global explorer!



CLIMATE CHANGE AND GLACIERS

ANCHORAGE, ALASKA

Venture to a glacier with Captain Irving and a glacial geochemist to learn about tiny organisms (microbes) hiding in glaciers, and the impact of global warming on glacial ice.



CORAL REEF RESTORATION

BALI, INDONESIA

Dynamite fishing is devastating the coral reefs in Bali. Scientists, artists, engineers, and welders have united their STEM+ expertise to create a solution to regrow their reef and preserve the ecosystem.

COMING SOON

CRAYOLA

EASTON, PENNSYLVANIA

Explore how manufacturing, research, development, science and engineering come together to create products that children across the globe use from the world of Crayola.



DEADLY LIFE SAVERS: SEA SNAKES

KOROR, PALAU

One of the deadliest animals on earth is now the biggest life saver, thanks to the venom harvested from the sea snake. Take a virtual trip to Palau with Captain Irving to catch a sea snake and study their ecosystem.



ECOSYSTEMS WITHIN THE AMAZON

PUERTO MALDONADO. PERU

Learn about the different layers and components within the Amazon Rainforest ecosystem, how they support each other, and how they are intertwined to create a healthy habitat for plants, animals and insects.



EMBRAER AIR: TREE OF LIFE

MELBOURNE, FLORIDA

Explore the interior of a luxury jet that has been created using upcycled and recycled sustainable materials.



ERUPT! VOLCANIC SCIENCE

HILO. HAWAII

Captain Irving hovers 20 feet above active volcanoes on the Big Island of Hawaii to observe lava flow and volcanic processes.



EVTOL: UBER AIR

WASHINGTON. D.C.

Unmanned flying vehicles or flying machines powered by electricity have arrived! This expedition is about how electricity charged vehicles are taking flight.



FOOD WASTE

SAN DIEGO, CALIFORNIA

Discover how much food waste the human population produces and the environmental harm it creates. Watch as Captain Irving spends 48 hours eating out of dumpsters to highlight the food waste epidemic.



GLACIERS: THE ALASKAN CLIMATE

ANCHORAGE, ALASKA

Venture to the "Land of the Midnight Sun" to discover the unique Alaskan climate filled with glaciers, snow, ice, and constant changes.



HALO JUMP

MEMPHIS, TENNESSEE

Watch Captain Irving jump out of a plane at 30,000 feet, free falling at 250 mph, and battling extreme temperatures in this investigation of the atmosphere and gravity.



HIGH ALTITUDE BALLOON LAUNCH

OMAHA, NEBRASKA

The Flying Classroom heads to space by launching a weather balloon. Gain a glimpse of the earth's ozone layers and weather as we venture to a height of 100,000 feet.



HONEY BEES: NEED FOR POLLINATION

SANTA ROSA BEACH, FLORIDA

Honey, almonds, chocolate and coffee are just a few of the daily items consumed by humans that are pollinated by bees. However, the global honey bee population is dwindling at an alarming rate. Captain Irving becomes a bee keeper for the day to learn about the life cycle of honey bees and their importance to our food supply.



ICELAND: BLUE LAGOON & GEOTHERMAL ENERGY

REYKJAVIK, ICELAND

What is geothermal energy? Explore geothermal energy from a unique perspective, the Blue Lagoon.



ICELAND: GEOGRAPHY AND GEOLOGY FORMATIONS

REYKJAVIK, ICELAND

Teachers, use this expedition to kick-off students understanding what is STEM and the engineering design process.



INSECT CULINARY ARTS

DETROIT, MICHIGAN

Have you ever crunched down on an insect as a snack or as part of your food? Venture to Detroit, Michigan where students in a culinary arts program are incorporating cricket powder into new and traditional recipes.



INVASIVE LIONFISH

FORT LAUDERDALE, FLORIDA

Lionfish have been invading the waters off of south Florida for decades. This mysterious and invasive creature is ruining the environment that natural aquatic animals live in. Captain Irving collaborates with a research scientist to learn more about this creature and what can be done to prevent them from destroying natural habitats.



INVASIVE SPECIES VS. THE AUSTRALIAN ECOSYSTEM

DARWIN, AUSTRALIA

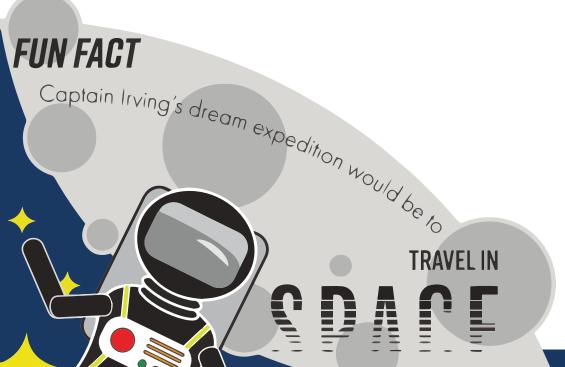
Captain Irving visits the "Land Down Under" to learn about the poisonous cane toad, its devastating impact on the ecosystem, and the research behind stopping the cane toad from ruining the habitat that it lives in.



JELLYFISH LAKE

KOROR, PALAU

Swimming with jellyfish is off limits since their tentacles sting and can even cause human death! Captain Irving braves swimming with millions of jellyfish in Koror, Palau.





KING OF THE AMAZON FOOD WEB: LANCE-HEAD VIPER SNAKE

PUERTO MALDONADO, PERU

Captain Irving dares to journey into the Amazon to investigate the food web, the key component to an ecosystem, through the eyes of the master hunter, the Lance-head Viper Snake.



MOLECULAR SCANNER

TEL AVIV, ISRAEL

Do you ever wonder what the food you are eating is made from, or what is in the vitamin you are swallowing? In Tel Aviv, Captain Irving learns how the SCIO Scanner can breakdown the molecular composition of any food item, medicine or plant.



ORBIS FLYING EYE HOSPITAL: AIRCRAFT AND OVERVIEW

KINGSTON. JAMAICA

Venture with Orbis Flying Eye Hospital as they travel across the globe to perform eye saving surgery to those in need, all aboard a high tech Flying Eye Hospital.



PARASITES

SAN DIEGO. CALIFORNIA

Slimy, creepy and crawly but a critical part of our ecosystem, this expedition explores the often unknown world of parasites.



MONEY ON THE HIGH SEAS

FORT LAUDERDALE, FLORIDA

Have you ever dreamed of owning a yacht? Venture on the high-seas with Captain Irving to learn about the cost to purchase and maintain a luxury vacht. This expedition will put student's math knowledge to test!



NIKE TECHNOLOGY ADVANCEMENTS

BEAVERTON, OREGON

As technology advances, products we use daily are enhanced by engineers and scientists. Venture to Nike with Captain Irving to learn how new technology has advanced the accessibility and comfort of shoes and athletic devices.



ORBIS FLYING EYE HOSPITAL: PATIENT SURGERY

KINGSTON. JAMAICA

Orbis Flying Eye Hospital visits Kingston, Jamaica to train doctors on advanced technology within the field of biomedical engineering, all aboard a plane that serves as a hospital and training center.



ORBIS FLYING EYE HOSPITAL: BIOMEDICAL ENGINEERING

KINGSTON, JAMAICA

Delicate eye surgery takes place on a plane that serves as mobile hospital.



POWER OF FLIGHT

DALLAS. TEXAS

How do airplanes fly? How are airplanes uniquely designed to support long flights, missions and cargo? Fly with Captain Irving in the MU-2 Turbo Prop to learn how an airplane flies and about aerodynamic principles incorporated within airplane design.



RED TIDE

SARASOTA. FLORIDA

Join Captain Irving and Dr. Tracy Fanara as they investigate the devastating but naturally occurring, Florida Red Tide.



REGENERATIVE MEDICINE

WINSTON-SALEM, NORTH CAROLINA

If salamanders and zebra fish can regenerate their body parts, why can't humans? Visit Wake Forest University and Dt. Atala, with Captain Irving to understand biomedical engineering and research regenerative medicine as a way to grow organs without the need for a donor.



STEM+ PRINCIPLES AND UNDERSTANDINGS

EVERYWHERE!

Teachers, use this expedition to kick-off students understanding what is STEM and the engineering design process.



WATER HYDRODYNAMICS

SYDNEY, AUSTRALIA

Nic Douglass (The Sailing Girl) and Captain Irving sail in Sydney to investigate buoyancy and water hydrodynamics. Will Captain Irving and Nic Douglass sink or float?



SILFRA FISSURE: BETWEEN TWO CONTINENTS

REYKJAVIK, ICELAND

Dive between two continental shelves to learn about tectonic plates and land formations.



SUSTAINABLE CITIES

SHANGHAI, CHINA

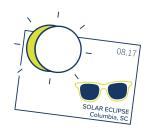
By 2050 the number of people living in cities will have nearly doubled from 3.5 billion to more than 6 billion. How can building a sustainable city reduce pollution and create places for people to live in a small area?



WEATHER AND FLIGHT PLANS

HOUSTON, TEXAS

Monsoons, snow storms, torrential rains, and extreme heat are just some of the weather conditions that Captain Irving has encountered on his global adventures. Investigate how he navigates his journeys while considering earth's unpredictable weather and maintaining his flight plans.



SOLAR ECLIPSE

COLUMBIA, SOUTH CAROLINA

Fly high with Captain Irving as he chases a solar eclipse! This expedition focuses on space, moon and stars.



URBAN FARMING

BOSTON, MASSACHUSETTS

What does a carrot from the 1960's taste like? How can a sustainable agricultural environment exist within a city? Explore how a food computer can replicate crops from any point in history and lead to sustainable agricultural practices.

