



North Carolina, USA - www.STEMstudytours.com



Event Categories

Gamer Maker & Tech Engineering & Physics Biology, Ecology & Anthropology

The NYC STEM Games - World Event						
Day		Morning	Afternoon		Evening	
1	Sun	Travel to New York; transfer to your Times Square Hotel		Hotel Check-In; Welcome, Safety & Orientation Meeting	Planet Hollywood Welcome Dinner	Evening Times Square Walk + Group Photo
2	Mon	Specialty Curriculum - Master Class 1	Specialty Curriculum - Master Class 2	Liberty Science Center Exploration	NYC Dinner	Empire State Building
3	Tues	Specialty Curriculum - Master Class 3	Specialty Curriculum - Master Class 4	Life Cycles of the Stars - Liberty Science Center Planetarium	NYC Dinner	Broadway Show
4	Wed	Columbia University - Campus Tour	Statue of Liberty & Ellis Island - Cruise + Audio Guide Tour + Immigration Museum		Farewell Dinner	National Geographic Encounter
5	Thur	Depart NYC for Home				

As with all sample itineraries, please be aware that this is an “example” of a schedule and that the activities and hotels shown may be variable dependent upon dates, weather, special requests, and other factors. Itineraries will be confirmed prior to travel.



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A Hammock Expeditions Company
North Carolina, USA

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E: info@STEMstudytours.com
W: www.STEMstudytours.com



The NYC STEM GAMES - SPECIALITY PROGRAMS

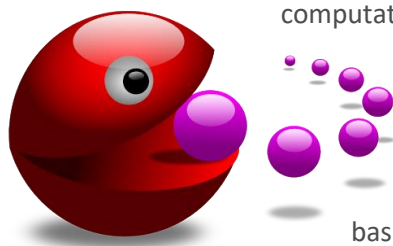
3 specialty programs are offered for our event. Schools are welcome to pick as many programs as they would like to participate in with a minimum of 10 students and 1 staff member enrolled in each program. Each specialty has 4 Master Classes designed for their focus, led by scientists and teaching specialists.

MAKER & TECH – GAMER EDITION

The NYC STEM Games - World Event Maker & Tech - GAMER EDITION

Day		Morning	Afternoon		Evening	
1	Sun	Travel to New York; NYC Guided City Tour; transfer to your Times Square Hotel		Hotel Check-In; Welcome, Safety & Orientation Meeting	Planet Hollywood Welcome Dinner	Evening Times Square Walk Group Photo
2	Mon	Intro to Game Design	Unreal Creations - Unreal Engine	Liberty Science Center Exploration	NYC Dinner	Empire State Building
3	Tues	Advanced 3D Modeling with Autodesk Maya	Virtual Reality & Your Brain	Life Cycles of the Stars - Liberty Science Center Planetarium	NYC Dinner	Broadway Show
4	Wed	Columbia University - Campus Tour	Statue of Liberty & Ellis Island - Cruise + Audio Guide Tour + Immigration Museum		Farewell Dinner	National Geographic Encounter
5	Thur	Depart NYC for Home				

Intro to Game Design - Design custom characters with animations and behaviors by completing a crash course in Stencyl. This intuitive toolset is limited only by your creativity. This platform sets a foundation of computational thinking—an essential skill in today's tech-driven world.



Unreal Creations! Designing a Game with Unreal Engine - Level up your skills in this game design and programming primer course using industry-level tools! Take the first step into professional-level game design as you learn how to set up your first project in Unreal Engine and learn the basics of coding in C++. Some programming experience is recommended for this class.

Advanced 3D Modeling with Autodesk Maya - In this program exploring advanced 3D modeling, students will learn the techniques and methods used professionally to create 3D models and meshes. Students will leave



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with access to a digital model that they have created (requires access to a Google Drive account or similar file-storage service).

Virtual Reality and Your Brain - Ever want to know what it would be like to stand on an I-beam a few hundred feet in the air without safety gear? Using HTC Vive and other tools, students will learn how their brain perceives reality and why VR is such an immersive technology.

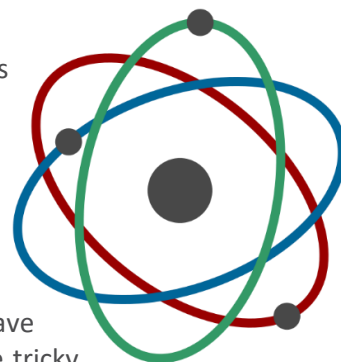
ENGINEERING & PHYSICS

The NYC STEM Games - World Event						
Engineering & Physics						
Day		Morning	Afternoon		Evening	
1	Sun	Travel to New York; NYC Guided City Tour; transfer to your Times Square Hotel		Hotel Check-In; Welcome, Safety & Orientation Meeting	Planet Hollywood Welcome Dinner	Evening Times Square Walk + Group Photo
2	Mon	Bridge Engineering & Design Challenge	The Physics of Car Crashes	Liberty Science Center Exploration	NYC Dinner	Empire State Building
3	Tues	Sphero Rovers: Mission to Mars	Aviation: From Paper Airplanes to Drones	Life Cycles of the Stars - Liberty Science Center Planetarium	NYC Dinner	Broadway Show
4	Wed	Columbia University - Campus Tour	Statue of Liberty & Ellis Island - Cruise + Audio Guide Tour + Immigration Museum		Farewell Dinner	National Geographic Encounter
5	Thur	Depart NYC for Home				

Bridge Engineering: Engineering & Design Challenge - Your group will be engaged in advanced 3D design of bridges with Autodesk Tinkercad. Learn to work in collaborative groups to solve complex problems using 3D printers.

Physics of Car Crashes - Explore the physics of car crashes and safety devices through the study of varying types of collisions (elastic and inelastic), force, and impact time. This exploration will guide your students to use Vernier sensors to engineer and analyze their own device which will survive the impact of a 'crash.'

Sphero Rovers: Mission to Mars! - Can you create the next Mars rover design? In this program use your engineering and design skills to create a Sphero driven rover that can carry a payload across our simulated Mars surface. Once you have designed your rover, jump into the driver's seat and code your way through the tricky terrain!



Aviation: From Paper Airplanes to Drones - This is drone training 101. Learn basic concepts of flight and apply this knowledge through hands-on experiences like using flight experiments and micro pocket drones.



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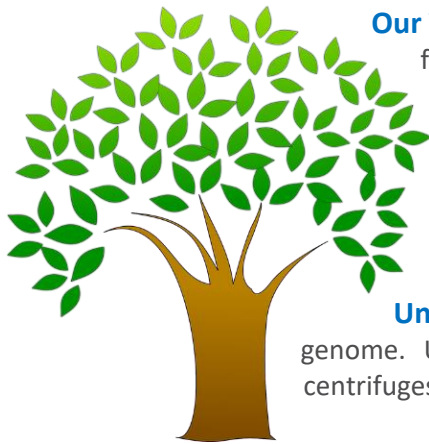
BIOLOGY, ECOLOGY & ANTHROPOLOGY

The NYC STEM Games - World Event

Biology, Ecology & Anthropology

Day		Morning	Afternoon	Evening	
1	Sun	Travel to New York; NYC Guided City Tour; transfer to your Times Square Hotel		Planet Hollywood Welcome Dinner	Evening Times Square Walk + Group Photo
2	Mon	Stabilizing the System	Water Systems: What's in our Water?	Liberty Science Center Exploration	NYC Dinner
3	Tues	Unlocking your DNA	Forensic Anthropology	Life Cycles of the Stars - Liberty Science Center Planetarium	NYC Dinner
4	Wed	Columbia University - Campus Tour	Statue of Liberty & Ellis Island - Cruise + Audio Guide Tour + Immigration Museum	Farewell Dinner	National Geographic Encounter
5	Thur	Depart NYC for Home			

Stabilizing the System - Learn about homeostasis and feedback mechanisms as you use Vernier sensors to observe and analyze your own heart rate, lung capacity, blood pressure, and more.



Our Water Systems: What's in Our Water? - Where does the water we use come from, where does it go, and what happens to it along the way? Students explore our water systems through a gallery format, becoming an "expert" on a contributing aspect such as eutrophication, combined sewage overflow, pH levels, and marine life in New York Harbor. Students then test local water from the Hudson River as well as our tap water, comparing the results to EPA guidelines.

Unlocking Your DNA - Discover the world of genetics as you explore the human genome. Use hands-on lab techniques and lab equipment such as micro-pipettes, centrifuges, and gel electrophoresis chambers as you solve a genetic mystery.

Forensic Anthropology - Tibia or not tibia, that is the question! Learn to observe and identify the bones and features that make us unique. Tell the story of a human by reading the patterns in various skeletal features. Then, solve an archaeological crime by using clues dug up from Earth to determine whether you're dealing with a funeral or a fraud.



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Your Itinerary

Day 1 – Welcome to New York City!

Meals en route on own; dinner included



Travel to NYC and upon your arrival, meet our Guide for your NYC City Tour by coach. Get a feel for Manhattan and the great NYC area, learning all about the neighborhoods, customs and iconic sights before being delivered to your hotel. Our Guide will be able to answer all your questions about the city and key you into the best places and details that every New Yorker needs to know!

When you arrive at your hotel, take some time to get settled and then meet back up for your Welcome, Safety & Orientation Meeting with your Event Ambassador. If you arrive early and have free time, explore the city and have fun! This evening, we'll head out for Times Square and dinner.

Your hotel will be allocated upon booking. Dependent upon hotel options, breakfasts will generally be taken at your hotel, lunches are on your own so we can stop at a variety of places and enjoy different types of food, and dinners are at various restaurants in the NYC area. Hotel selections will feature two queen/double beds to sleep four pupils. Staff will lodge in the same room type with two adults sharing a room. If you desire different rooming options, please let us know as we are happy to quote with your tailored preferences.



New York City... Immerse yourself in New York City for five minutes and you'll see why it's

like no other place on earth. New York can be anything you want it to be. It's why countless people have pinned their dreams on the place, thrown caution to the wind and shown up on its doorstep. And it's why visitors keep streaming in from all corners of the globe, grasping at their silver-screen visions but discovering plenty more on the way. New York is a city that's surprising yet malleable, incredibly straightforward yet bafflingly complex. It's got so many sides and so much to offer that it can be intimidating at times but visit with an open mind and you're likely to fall in love with this city!

It's not especially modest to call New York City the center of the modern world. But then, as New Yorkers are the first to admit, their hometown has never been shy about tooting its own horn. The buildings are soaring, "look-at-me" towers; crowds are boisterous and diverse; zillions of restaurants and shops cater every conceivable taste; museums and performance venues offer everything from masterworks to avant-garde creations. Around almost any corner is a commingling of energy, congruous and clashing at the same time. The result is a messy, beautiful, energetic New York City!



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Did you know?

- ✓ The term “Big Apple” originally referred to horse racing. The city got its most famous nickname from a local newspaper’s racing column in the 1920s. Prior to the city’s adoption of the nickname, the phrase “Big Apple” was used to describe a big money prize at important horse races held around the city.
- ✓ New York City is home to more than just pigeons, and Central Park is an amazing place to bird watch with 275 species of birds in Central Park alone. Bird watchers have been known to spot up to 100 species a day during spring migration.
- ✓ New Yorkers speak approximately 800 languages. Over 37 percent of New Yorkers were born in another country, so it’s unsurprising that the city’s residents speak a wide range of languages—but by any account, 800 is impressive. 4 in 10 households speak a language other than English.
- ✓ NYCs population is the highest of any American city and a little over 8 million people live in the City. It means 1 in every 38 people in the United States call the city home. With over 27,000 people per square mile, it’s not just the densest major city, it also accounts for more than 40 percent of New York State’s entire population. The borough of Brooklyn alone would be the fourth largest city in the United States. Queens would also rank fourth nationally.
- ✓ It would take approximately 24-hours to navigate the entire NYC subway system. With 34 lines and 469 stops, the subway system is one of the largest urban mass transportation systems in the world.
- ✓ The Bronx takes its name from its first European settler. Jonas Bronck, who moved to America from Sweden in 1639, was the first European to settle in the Bronx. His farm, covering about 500 acres, was referred to as “Bronck’s Land,” and the river was called “Bronck’s River.” Over the years, people started calling the whole area the “Bronx”.
- ✓ France gifted the Statue of Liberty to the United States in 1886 for its centennial celebration. The statue was shipped as 350 pieces in 214 crates and took 4 months to assemble on Ellis Island.
- ✓ New York City’s Federal Reserve Bank has the largest gold storage in the world. The vault is 80 feet below street level and contains \$90 billion in gold.
- ✓ The first pizzeria in the United States opened in NYC in 1895. Since the 1960s, the price of a slice of pizza has been roughly the same price as a subway ride, generating the idea of “Pizza Principle” among economists.
- ✓ Times Square is named after the New York Times. It was originally called Longacre Square until the Times moved there in 1904.
- ✓ New York City became the first capital of the United States in 1789.
- ✓ NYC beautifully encompasses the diversity of the world. More Chinese people live in New York City than any other city outside of Asia. More Jewish people live there than any other city outside of Israel.



This evening, after dinner in Manhattan, we'll trek through **Times Square** to soak up the culture. We'll meet for a photo op and enjoy the night!



Times Square Exploration – Times Square is a major commercial intersection, tourist destination, entertainment center and neighborhood in the Midtown Manhattan section of NYC at the junction of Broadway and 7th Avenue. Brightly lit by numerous billboards and advertisements, it stretches from West 42nd to West 47th Streets, and is sometimes referred to as “the Crossroads of the World”, “the Center of the Universe”, “the Heart of the Great White Way”, and “the Heart of the World.” It is one of the world's busiest pedestrian areas, the hub of the Broadway Theater District, and a major center of the world's entertainment industry. Times Square is one of the world's most visited tourist attractions, drawing an estimated 50 million visitors annually. Approximately 330,000 people pass through Times Square daily, many of them tourists, while over 460,000 pedestrians walk through Times Square on its busiest days.

Day 2 – Start your scientific adventure!

Breakfast & dinner included; lunch on own

After breakfast at our hotel, we'll head to the Metro station, transferring to lower Manhattan and onto the New Jersey PATH system to take us to the Liberty Science Center.



The Liberty Science Center – At LSC, your students will be inspired to learn about the power, promise, and pure fun of science and technology. LSC's hands-on extended laboratory programming offers high-quality, interdisciplinary project-based learning that combines critical thinking, collaboration, and problem-solving skills using real world examples to help support students in making the connection to learning. Students will strengthen the tools and skills necessary for scientific study into math and science connections as well as the world of medical technology and engineering during STEM instructor led facilitated classroom discussions and experiments.

Master Class Series – Day 1 - Today, we'll have our first two Master Classes specifically offered for our independent specialty programs, then have a bit of time to explore the fascinating Liberty Science Center.



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Late afternoon, we'll head back to Manhattan for a local dinner and then we're off to discover the incredible engineering found at the Empire State Building!



The Empire State Building - New York's famous Empire State Building, a New York City and National Historic landmark, soars more than a quarter of a mile into the atmosphere above the heart of Manhattan. Located on the 86th floor, 1,050 feet (320 meters) above the city's bustling streets, the Observatory offers an immersive experience with panoramic views from within a glass enclosed pavilion and from the surrounding open-air promenade. The building, one of New York City's main tourist attractions, offers a variety of activities. Check out the two-story building model and stunning art deco ceiling murals along with the historical "Dare to Dream" exhibit. There are restaurants, a sushi bar, coffee shops, a drug store, a post office and two banks in addition to the plethora of restaurants and nightlife activities in the surrounding area.

The Observation Deck wraps around the building's spire, providing 360-degree views of New York and beyond. From up here you'll get one-of-a-kind views of Central Park, The Hudson River and East River, The Brooklyn Bridge, Times Square, The Statue of Liberty, and much more. Their official Observatory Experience app teaches you about your view from every direction. Then, take advantage of the high-powered binoculars to get a closer look!

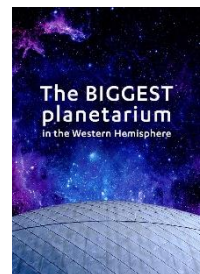
Day 3 – Continued specialty courses....

Breakfast & dinner included; lunch on own

After breakfast today, we're off to New Jersey for our second day of specialty programming. We'll travel to the Liberty Space Center by Metro/PATH and get ready to conquer the world!

Master Class Series – Day 2 - Today, we'll have our last two Master Classes specifically offered for our independent specialty programs. After, we'll have a chance to view the Planetarium.

Jennifer Chalsty Planetarium and Giant Dome Theater – This planetarium is the largest in the Western Hemisphere. The 89-foot dome, coupled with the all-dome video and astronomical object database, provides an immersive environment in which to explore the Earth and Space Systems Performance Expectations. View astronomical objects and celestial phenomena from the surface of Earth, and then travel into space to truly understand these difficult concepts by flying up to, around, and through the objects. [VIDEO LINK](#) Time can also be sped up in the planetarium, allowing you to make an entire year of space system observations during one program—seasons, Moon phases, seasonal constellations, and more. Tour the universe without ever leaving your seat!



Life Cycles of the Stars Master Class - Explore observations of the Sun, planets, and stars to discover the objects in our amazing sky. Develop a conceptual model of the formation of the universe and the life cycle of a star. Construction of this model will use evidence from stellar light spectra, the motion of distant galaxies, the composition of matter in the universe, nuclear fusion, and the production of elements in stars. The immersive environment of the planetarium allows students to travel back in time to the formation of the universe to explore these space science phenomena.

In the afternoon, we'll say our goodbyes to our new friends in New Jersey and head back to Manhattan for an early dinner and then a night out at the theatre!

Broadway Show – There's nothing quite like seeing a show on Broadway! Watch magic come alive with incredible performers, sets and scenes. Imagination turns into reality when you sit back and take it all in. The specific show will be announced prior to travel and will apply to all guests traveling. Seating is based on a specific budgeted amount and generally includes student group seating on a balcony level.



Day 4 – Hello Manhattan! A celebration of history & diversity

Breakfast & dinner included; lunch on own

After breakfast at our hotel, today we'll have some time to get to know Manhattan. We'll meet our Ambassador in the morning and travel to Columbia University for a campus tour! [Walking Tour Map & Directions](#)

Columbia University Campus Tour - Columbia University is a **private Ivy League research university** in New York City. Established in 1754 on the grounds of Trinity Church in Manhattan, Columbia is the oldest institution of higher education in New York and the fifth-oldest institution of higher learning in the United States. It is one of nine colonial colleges founded prior to the Declaration of Independence, seven of which belong to the Ivy League. It has been ranked by numerous major education publications as among the top ten universities in the world.

Columbia scientists and scholars have played an important role in the development of notable scientific fields and breakthroughs including brain-computer interface, the laser and maser, nuclear magnetic resonance, the first nuclear pile, the first nuclear fission reaction in the Americas, Thomas Hunt Morgan's drosophila experiment – considered the origin of modern genetics, the first evidence for plate tectonics and continental drift, and much of the initial research and planning of the Manhattan Project during World War II. The Columbia University Physics Department has been affiliated with 33 Nobel Prize winners as alumni, faculty or research staff, the third most of any American institution behind MIT and Harvard. In addition, 22 Nobel Prize winners in Physiology or Medicine have been affiliated with Columbia, the third most of any American institution.



The university's research efforts include the Lamont-Doherty Earth Observatory, Goddard Institute for Space Studies and accelerator laboratories with major technology firms such as IBM. Columbia is one of the fourteen founding members of the Association of American Universities and was the first school in the United States to grant the M.D. degree. The university administers the Pulitzer prize annually. Columbia is organized into twenty



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schools, including three undergraduate schools and numerous graduate schools. It maintains research centers outside of the United States known as Columbia Global Centers.

In 2019, Columbia's undergraduate acceptance rate was 5.1%, making it one of the most selective colleges in the United States, and the second most selective in the Ivy League after Harvard. Columbia is ranked as the 3rd best university in the United States by U.S. News & World Report behind Princeton and Harvard. The university's endowment stood at \$10.9 billion in 2019, among the largest of any academic institution.

As of 2018, Columbia's alumni and affiliates include: five Founding Fathers of the United States—among them an author of the United States Constitution and a co-author of the Declaration of Independence; three U.S. presidents; 29 foreign heads of state; ten Justices of the United States Supreme Court, two of whom currently serve; 96 Nobel laureates; 101 National Academy members; 53 living billionaires; eleven Olympic medalists; 33 Academy Award winners; and 125 Pulitzer Prize recipients.

After a general tour of Columbia University, we're off to explore Liberty Island!

Statue Cruises: Statue of Liberty & Liberty Island exploration, plus the Ellis Island Immigration Museum – Departing from Battery Park, get a chance to see the Statue of Liberty National Monument and the Ellis Island National Immigration Museum in this absolutely fascinating journey. Enjoy an audio tour and get an in-depth look at America's enduring symbol of freedom: **The Statue of Liberty**. Continue to Ellis Island for access to the **Ellis Island Immigration Museum** and free time to explore. Indoor and outdoor seating is available; concessions and souvenirs are available on board. Be sure to wear comfortable clothing and shoes!



This evening we'll have our farewell dinner and then one last amazing activity to wrap up our trip!

National Geographic Encounter: Ocean Odyssey - Dive into an ocean of fun in the heart of Times Square without getting wet! Nat Geo is a ground-breaking immersive entertainment experience that uses cutting-edge technology to transport you on an incredible underwater journey across the ocean to encounter its greatest wonders and mightiest creatures.



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Join your new friends on this interactive, walk-through experience where National Geographic Encounter's stunning photo-realistic animation gives you access to rarely witnessed moments in nature, including an up-close encounter with a life-sized Humpback whale, a battle between ferocious Humboldt squid, a magnificent bait ball feeding frenzy, and much more.

Day 6 – Goodbye NYC!

Breakfast included; all other meals on own

After our incredible week, we'll start to say 'goodbye' to New York as we prepare to travel home. If you have a later flight and we can assist you with booking extra activities, please call upon us!

Goodbye NYC... Until we meet again!



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Traveling from afar and looking for a longer trip?

If your school is traveling from a long distance and would like to add on more time in the USA or Canada, we'd be delighted to assist you with this. Options may include:

A longer stay in NYC
Boston, Massachusetts
Washington DC
Philadelphia, Pennsylvania
San Francisco, California
Los Angeles, California
Houston, Texas,
Orlando, Florida
Wilmington, North Carolina
Toronto, Canada
Niagara Falls, Canada
Ontario, Canada
or other customized option

Just let us know how much time you would like to spend while here, your preferences and budget, and we are happy to design an add-on custom STEM itinerary.

As an example, some of our schools in Australia and Asia prefer to add on a San Francisco and Silicon Valley extension since they are flying home from the American west coast. Some of our UK and European schools like to add on options to Washington DC or Boston. Whatever your preference, we are delighted to assist!



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THE NYC STEM GAMES

Minimum Booking Numbers:

20 students

What's Included:

Roundtrip flights or motorcoach transfers to New York City
4-nights' accommodation in Manhattan
Airport transfers on arrival and departure
5-Day NYC Metro Card for daily transportation
2-Day NJ PATH Card for transport to Liberty Science Center
Breakfasts & dinners daily starting with dinner on Day 1 and ending with breakfast on Day 5
4 Master Classes dependent upon elected program:

- Maker & Tech, GAMER EDITION
- Engineering & Physics
- Biology, Ecology & Anthropology

NYC Guided City Tour
Evening Times Square Exploration
Group Photograph in Times Square
Empire State Building excursion
Broadway Show (specific selection TBD)
Life Cycles of the Stars Master Class at the Chalsty Planetarium
Columbia University Campus Tour
National Geographic Encounter
Statue Harbor Cruise
Statue of Liberty exploration with Audio Guide
Ellis Island Immigration Museum with Audio Guide
Event Ambassador
Fund-a-Forest: A tree is planted in the name of each guest
Dollar\$ For Scholars: \$2 donation in the name of each guest
24-hour emergency cover

What's Not Included:

Lunches, snacks & extra beverages – Budget \$15 - \$20 per day
Fully comprehensive insurance (**mandatory**)
Transfers to/from home airport
Cost of visas, full or collective passports
Cost of inoculations or medication required for travel
Sightseeing / Entertainment Options not shown in Itinerary
Hotel incidental deposits & bills – meals, mini-bar items, recreation charges, purchases billed to room, etc.
Any gratuities – Ambassador, local guides

As always, our staff are always available to you to answer any questions you may have regarding programming.
If we may serve you in any way, please do not hesitate to contact us.



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