Instructor Packet

Everything you need to make the most of your Dream Flight Adventures mission

 We ignite imaginations, blur the line between entertainment and education, and let dreams take flight.

Introduction

Dream Flight Adventures is an interactive learning experience teaches **teamwork**, **critical thinking**, and **problem solving** by blending **science**, **technology**, and **engineering** with **social studies**, **humanities**, and the **arts**. In other words, it's a **real-life "Magic School Bus."** It's part simulator, part game, and part theater—and it creates an out-of-this-world experience!

The Dream Flight Adventures experience centers around an educational adventure that takes place in one of our full immersion simulators. Groups of students enter the simulator, work together to operate it, and go on incredible adventures. They travel to outer space, under the sea, back in time, through the body—anywhere their imaginations take them!

Students become the captain and crew of these simulators and must **work together** to complete their missions, and their success or failure can depend on the action of a single person. Our missions are **completely flexible and open-ended**. Students must **think creatively**, and each action can change the outcome of the mission.

Dream Flight Adventures builds upon the 20+ years of experience of the Christa McAuliffe Space Education Center, which has enriched the lives of over 300,000 children. Our missions are designed around **Common Core and state standards** by professional educators and are brimming with educational content. And the kids love them! They're often described as "better than Disneyland."

Our adventures use science fiction and fantasy contexts to expose students to **standards-based curriculum**, thought-provoking **social and ethical issues**, and crucial **21st Century skills**. These unique adventures create a strong emotional experience. This helps imbue the concepts deeply in our students' memory, so the lessons they learn remain with them for their lifetimes.

How To Use This Packet

Whether you're a frequent visitor or taking your class to Dream Flight Adventures for the first time, this packet contains all the information you'll need to make the most out of a Dream Flight Adventures mission. It includes background information about the simulator and mission, instructions to prepare your students, and a variety of lesson plans and curriculum-based activities that supplement the mission. We want your experience with Dream Flight Adventure to be unforgettable from beginning to end.

 We ignite imaginations, blur the line between entertainment and education, and let dreams take flight.

Preparation Guide & Checklist

This packet is loaded with all sorts of materials to help you integrate your Dream Flight Adventures mission seamlessly into your existing lesson plans. That said, this packet can be a little daunting at times. Please take advantage of the following checklist to make sure you and your students are fully prepared for an unforgettable experience.

Getting Started

- ☐ Review the available missions at www.dreamflightadventures.com/missions and select one that matches your curriculum or seems interesting to your students.

  Each mission has multiple curriculum touch-points. If you need help deciding which one is best for your students, please contact us via www.dreamflightadventures.com/contact. We're eager to help!

- ☐ Schedule your adventure by contacting us at www.dreamflightadventures.com/contact.

Preparing for the Adventure

- ☐ Start by reviewing the **Simulator Overview** section of this packet, which describes the simulator experience and curriculum.

- ☐ Pay particular attention to the *Student Stations* section, which describes the various roles your students will have during the adventure.

  You may consider assigning these roles to your students in advance. The *Student Stations* section includes several pointers about what type of student is most appropriate for each role. For an even richer experience, allow your students to complete the *Infinity Knights Job Application* project in the **Lesson Plans & Curriculum-based Activities** section.

- ☐ Review the *Mission Introduction* for your mission with your students. This introduction is included in the **Mission Materials** section of this packet.

  The *Pre-Mission Diary* project, included in the **Lesson Plans & Curriculum-based Activities** section of this packet, provides a great way for students to reflect on their upcoming adventure.

The "Big Day"

- ☐ Arrive on time to maximize your students' time inside their simulator adventure.
- ☐ Watch the adventure unfold. While your students are engulfed in their fully immersive adventure, you are welcome to join the Dream Flight Adventures staff behind the scenes to watch your students in action.

Aftermath

- ☐ Hold a class discussion with your students. Review how the mission relates to material you've covered in your curriculum.

  The *Mission Debrief Class Discussion Guide,* included in the **Lesson Plans & Curriculum-based Activities** section of this packet, contains several thought-provoking and mission-specific questions to help spur discussion.

- ☐ Allow your students to reflect on the adventure, record their experiences, and share what they have learned.

  The *Multimedia Mission Memoir* project, included in the **Lesson Plans & Curriculum-based Activities** section of this packet, helps students think through their mission's underlying concepts through the creative use of multimedia.

- ☐ Look ahead. Each of our missions blends a wide variety of topics. While you may have already addressed some of these topics in your lessons, others might still be down the road. Review the mission's curriculum topics and prepare to reflect back on the mission in future lessons. The curriculum topics associated with the mission are listed in the *Mission Overview*, found in the **Mission Materials** section of this packet.

Simulator Overview

A quick look at the where the magic happens

DREAM FLIGHT ADVENTURES

Inspiring the world to think and dream

Full Immersion Simulators

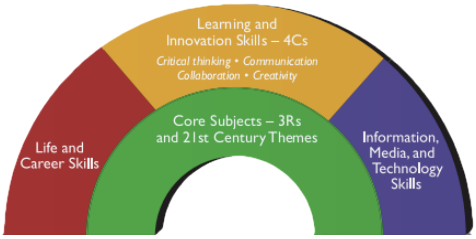
Dream Flight Adventure simulators are **immersive interactive environments** that throw students into the middle of epic stories. These stories are standards-based and built around core curriculum topics in science, social studies, technology, history, literature, and the arts.

Students become **active participants** in these stories, not passive observers. They must **learn how to operate the technology controls**, and then they must **apply that knowledge** in pursuit of their mission.

By virtue of the simulator's design, each mission—regardless of content—teaches over **forty 21st century skills**, which are organized below according to the Framework for 21st Century Learning.

Life and Career Skills

- Leadership & responsibility
- Productivity & accountability
- Cross-cultural interaction
- Initiative & self-direction
- Flexibility & adaptability
- High-stakes decision making
- Giving & following directions
- Planning
- Cost/benefit analysis
- Scarce resources & tradeoffs
- Prioritization
- Law enforcement
- Medicine
- Forensics
- Emergency response



Learning and Innovation Skills

- Critical thinking
- Problem solving
- Creativity and innovation
- Teamwork & collaboration
- Written communication
- Verbal communication
- Situational analysis
- Interpersonal relations

Information, Media, & Technology Skills

- Computers
- Music & sound
- Information literacy
- Cybersecurity
- Cryptology
- Acceleration
- Waveforms
- Additive color mixing

Core Subjects and 21st Century Themes

- Anatomy
- Immune systems
- Genetics & mutation
- Drama
- Acoustics
- Vital signs
- Navigation
- Atmospheric conditions
- Summarization

Each mission also includes its own unique curriculum aligned to Common Core and state standards. These missions all includes several relevant **STEM topics**; topics from **history, literature, and the humanities**; and thought-provoking **social or ethical issues**.

 We ignite imaginations, blur the line between entertainment and education, and let dreams take flight.

Student Stations

During a Dream Flight Adventure mission, groups of students must work together as a team to accomplish a challenging objective. Each student is assigned a station and has individual responsibility for his or her role, which contains several important tasks. Our simulators support groups of 4-16 students at a time. The stations are:

Captain

The Captain is responsible for making all command decisions and ensuring that the mission is completed successfully. The Captain also serves as the official representative of the Infinity Knights.

Embedded Concepts:
Leadership, verbal communication, high-stakes decision making, group cohesion and morale

Selection Suggestions:
The Captain should be a student who can speak clearly and think on his or her feet. Level-headed students with strong leadership skills tend to make good Captains.

First Officer

The First Officer is responsible for ensuring that the captain's orders are carried out. The First Officer will assume command in the event that the Captain is disabled.

Embedded Concepts:
Situational analysis, teamwork, leadership, summarization, oral communication, multitasking

Selection Suggestions:
The First Officer should be a student who interacts easily with his or her peers, follows directions, and exhibits strong leadership abilities. Students who pay close attention to detail tend to make good First Officers.

Second Officer

The First Officer is responsible for ensuring that the captain's orders are carried out. The First Officer will assume command in the event that the Captain is disabled.

Embedded Concepts:
Situational analysis, teamwork, leadership, summarization, oral communication, multitasking

Selection Suggestions:
The Second Officer should be a student who interacts easily with his or her peers, follows directions, and exhibits strong leadership abilities. Students who pay close attention to detail tend to make good Second Officers.

Pilot & Navigator (1 or 2 students, depending on the simulator)

The Pilot and Navigator are responsible for navigating the ship. This involves understanding the current location, charting a course to the destination, and steering the ship.

Embedded Concepts:
Cartography, 2D representations of 3D space, compass directions, velocity and inertia, acoustics

Selection Suggestions:
The Pilot should be a student with strong spacial perception skills and the ability to multitask well. Students who play video games in their spare time and have a good sense of direction tend to make effective Pilots. However, hyperactive students are **discouraged** from being Pilots.

Biologist

The Biologist is responsible for mutating and controlling the onboard Chimera, a genetically modifiable creature that can be adapted to the needs of the mission.

Embedded Concepts:
Genetics, mutation, tradeoff of scarce resources, zoology, addition and subtraction

Selection Suggestions:
The Biologist should have a relatively strong number sense. Students with a love for plants or animals tend to make good Biologists.

Physicist

The Physicist is responsible for operating the ship's Versabeam, an energy beam with several different abilities. The physicist is also in charge of strategically allocating the ship's power supply.

Embedded Concepts:
Planning, tradeoff of scarce resources, effects of radiation, multitasking

Selection Suggestions:
The Physicist should be a student with quick reaction skills and a strong understanding of cause-and-effect relationships. Students who are interested in science tend to make good Physicists.

Engineer (2x)

The Engineers are responsible for making sure that all ship systems function properly. This involves repairing damaged systems and creating ammunition for the ship's weapons and Versabeam.

Embedded Concepts:
Following instructions, pattern recognition, additive color mixing, planning, multitasking

Selection Suggestions:
The Engineers should be strong readers who are good at following directions. Students with good attention to detail and interest in mechanical processes tend to make good Engineers.

Hacker

The Hacker is responsible for hacking into enemy computers. The Hacker is also in charge of strategically allocating the ship's computer capacity.

Embedded Concepts:
Technology literacy, computer engineering, artificial intelligence, tradeoff of scarce resources

Selection Suggestions:
The Hacker should be a student who is patient and pays close attention to detail. Students interested with computers and gaming tend to make good Hackers.

Gunner

The Gunner is responsible for using the ship's weapon systems to protect the crew from threats. The Gunner is also in charge of transforming the ship into different forms, depending on the needs of the mission.

Embedded Concepts:
Planning, tradeoff of scarce resources, timing, cause and effect

Selection Suggestions:
The Gunner should be a student with quick reaction skills and a strong understanding of cause-and-effect relationships. Level-headed students tend to make good Gunners. Hyperactive or aggressive students are **discouraged** from being the Gunner.

Security Chief

The Security Chief is responsible for ship wide safety and security. This involves controlling the ship's shield, stealth, and cybersecurity systems.

Embedded Concepts:
Planning, strategic thinking, tradeoff of scarce resources, IT security, leadership

Selection Suggestions:
The Security Chief should be a student who is a good team player with leadership skills. Students who are self-starters and pay close attention to detail tend to make good Security Chiefs.

Security Guard (2x)

The Security Guards are responsible for maintaining order and safety within the ship. They defend the ship from invaders, investigate shipboard disturbances, and respond to security alerts.

Embedded Concepts:
Investigative inquiry, reporting, law enforcement, teamwork, forensics

Selection Suggestions:
The Security Guards should be students who are good at following directions and have strong writing skills. Outgoing students tend to make good Security Guards.

Doctor

The Doctor is responsible for the well-being of the crew. This involves everything from maintaining crew morale to performing emergency medical operations.

Embedded Concepts:
Human anatomy, medicine, toxins, healthcare, blood cells

Selection Suggestions:
The Doctor should be a student who is comfortable multitasking and pays close attention to detail. Students with interest in biology tend to make good Doctors.

Communications

The Communications Officer is responsible for incoming and outgoing communications, both written and verbal. This also includes decrypting encoded messages.

Embedded Concepts:
Written communication, waveform amplitude and frequency, encryption

Selection Suggestions:
The Communications officer should be a student with excellent reading and writing skills. Students with good spatial perception and a passion for reading tend to make good Communications officers.

Deck Chief

The Deck Chief is also responsible for monitoring internal and external sensors and performing detailed scans of the objects the ship encounters.

Embedded Concepts:
Forensics, 2D representations of 3D space, pressure, atmospheric conditions

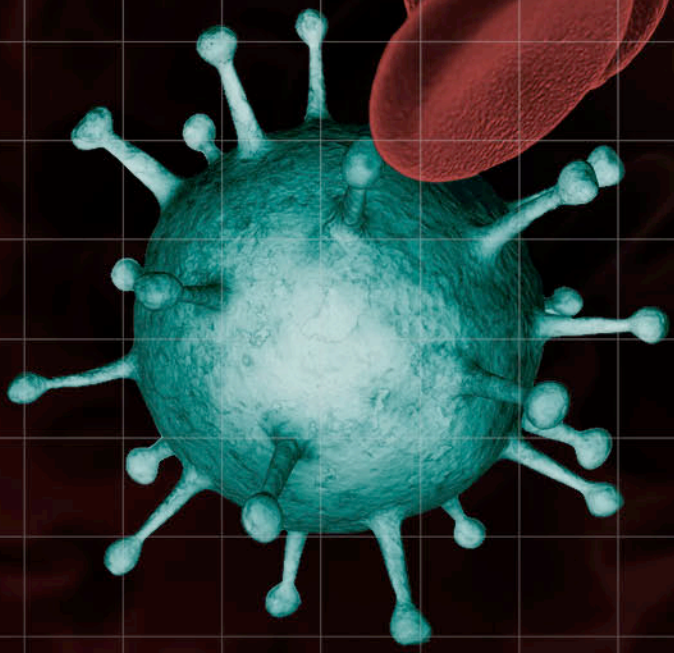
Selection Suggestions:
The Deck Chief should be a student who is comfortable multitasking and pays close attention to detail. Students with strong reading and writing skills tend to make good Deck Chiefs.

Mission Materials

Details about your specific mission

PANDEMIC

A microscopic malady with monstrous implications



SPANISH CONQUISTADORS AND THE AZTEC CIVILIZATION – ANATOMY AND PHYSIOLOGY – IMMUNE, CIRCULATORY, AND LYMPHATIC SYSTEMS – VIRUSES AND VIRAL REPRODUCTION – SCIENTIFIC METHOD – PROLONGED ISOLATION AND DISEASE RESISTANCE – ACIDITY, TEMPERATURE, AND PRESSURE – CROSS-CULTURAL UNDERSTANDING

DREAM FLIGHT ADVENTURES

PANDEMIC

Mission Overview

An emergency has erupted at the worst possible time! Two civilizations, after being separated from each other for hundreds of years, have finally decided to put aside their differences and meet together to discuss opening peaceful diplomatic relations. Both sides have many great things they can learn from each other, if only they can look past their differences and put their fear and distrust behind them. Things were looking hopeful at first, but everything broke down when suddenly one of the delegates fell seriously ill!

Doctors are baffled by the mysterious plague, and they have quarantined the delegate before the disease can spread. Accusations of biological warfare have begun to fly, each side accusing the other of sabotaging the negotiations. It's an illusive mystery, but one thing is certain: if the delegate dies all hope of peaceful relations between the two civilizations will die with him.

Fearing the worst, the delegates have called upon the Infinity Knights—the renowned protectors of peace and justice throughout the universe—for assistance. Using their advanced technology, the Infinity Knight crew will shrink their vessel to a microscopic size and enter the body of the sick delegate. They must search the body for the disease, develop a cure, and stop the plague before it can spread.

But that's not all! The crew must also unravel the mystery of where the sickness came from. If they don't, the fear, suspicion, and distrust between the two civilizations will destroy all hope of peaceful relations forever!

Standards-Based Curriculum

Spanish Conquistadors and the Aztec Civilization
Anatomy and physiology
Immune, circulatory, and lymphatic systems
Viruses and viral reproduction
Scientific method
Prolonged isolation and disease resistance
Acidity, temperature, and pressure
Cross-cultural understanding

Higher Order Thinking

How does prolonged isolation influence culture?
How do vastly different cultures interact when they collide?
What actions should be taken to maintain genetic diversity?
What is the future of nanomedicine?
What precautions should be implemented to protect against pandemics?

PANDEMIC

Mission Introduction

An emergency has erupted at the worst possible time, and now the fate of two civilizations hangs in the balance! For hundreds of years, the Aztlans and the Iberians have lived in the same solar system. The Aztlans live on one planet, and the Iberians live on another. They've known about each other's existence, but they've never visited each other or even communicated for as long as anyone can remember. The Iberians despise the Aztlans, and Aztlan children tell each other scary stories about the Iberians at night. Both sides fear and distrust each other, and it's been that way for centuries.

However, after all this time things have finally started to change. Bold thinkers on both sides have begun questioning what all the fear and distrust is about. They feel that both sides have many great things they can learn from each other, if only they can look past their differences and put their suspicions behind them.

The Iberian and Aztlan leaders have recently decided to hold a round of diplomatic negotiations on a space station between both of their planets. If things go well it could be the beginning of significant peace, learning, and trade. Things were looking hopeful at first, but everything broke down when the Aztlan delegate fell seriously ill!

Doctors are baffled by the mysterious plague, and they have quarantined the delegate before the disease can spread. Accusations of biological warfare have begun to fly, each side accusing the other of sabotaging the negotiations. It's an illusive mystery, but one thing is certain: if the delegate dies all hope of peaceful relations between the two civilizations will die with him.

Fearing the worst, the delegates have called upon the Infinity Knights—the renowned protectors of peace and justice throughout the universe—for assistance. Using our advanced technology, we will shrink your ship to a microscopic size and insert it into the sick delegate's body. Your ship is equipped with a modified Stealth System, which will disguise your ship so the body's immune system does not detect it; otherwise it would think your ship is a disease and try to destroy you.

Your mission is to search the Aztlan delegate's body for the disease, develop a cure, and stop the plague before it can spread. Very little is known about the disease, except that it appears to be a virus of some kind. You must travel to various organs and take key scientific measurements. The doctors and ship's computer will help guide you, but only you can effectively find a cure. In each organ, record the blood pressure, temperature, pulse, and other vital signs. Look for clues that will help identify a cure, and do whatever you can to keep the disease from spreading. You must keep the delegate alive! Stop the virus at all costs!

But that's not all! You must also unravel the mystery of where the disease came from. If you don't, the fear, suspicion, and distrust between the Aztlans and Iberians will destroy all hope of peaceful relations forever!

DREAM FLIGHT ADVENTURES

Inspiring the world to think and dream

Lesson Plans & Curriculum-based Activities

Helpful tools to extend the magic before and after the mission

We ignite imaginations, blur the line between entertainment and education, and let dreams take flight.

Name _____

Infinity Knights Job Application

In the near future you will embark on an exciting Dream Flight Adventures mission. You and your peers will become members of the *Infinity Knights*, the protectors of peace and justice throughout the universe. Together, you will operate a fantastic ship to accomplish a challenging mission. It will not be easy, and you will need to work as a team to be successful.

It is a great honor to serve with the *Infinity Knights,* and every station on your ship is important. Review the ship's stations at www.DreamFlightAdventures.com/simulators/. Pay attention to how your crew must work together and think about the stations that interest you most.

Identify the three stations where you'd most like to serve. Write a persuasive essay describing why you'd be a good choice for these positions. Describe why you are interested in the roles and how you think you would do a good job. Share how these positions relate to past experiences you've had or goals you have for the future. Use the space below or separate sheets of paper to write your persuasive essay.

_____

_____

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_____

Name _____

Pre-Mission Diary

Read the *Mission Introduction* for your upcoming Dream Flight Adventures mission. Write a journal entry describing how you feel about the mission. What do you think it will be like? What will you do? What challenges will you face, and how do you plan on handling them? Use the space below or a separate sheet of paper if you need more room.

_____

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Name _____

Temperature Conversion Worksheet

You can convert a temperature from **Celsius to Fahrenheit** in 3 steps:

1. Take your Celsius temperature _____ and multiply it by 9.
   _____ x 9 = _____
2. Take the answer from step one and divide it by 5.
   _____ ÷ 5 = _____
3. Take the answer from step two and add 32 to it.
   _____ + 32 = _____

Example: Let's convert 20° Celsius to Fahrenheit:

20° Celsius x 9 = 180
180 ÷ 5 = 36
36 + 32 = 68° Fahrenheit

To convert from Celsius to Fahrenheit:

$T_F = 9/5\ T_C + 32$

You can convert a temperature from **Fahrenheit to Celsius** in 3 steps:

1. Take your Fahrenheit temperature _____ and subtract 32 from it.
   _____ - 32 = _____
2. Take the answer from step one and multiply it by 5.
   _____ x 5 = _____
3. Take the answer from step two and divide it by 9.
   _____ ÷ 9 = _____

Example: Let's convert 200° Fahrenheit to Celsius:

200° Fahrenheit - 32 = 168
168 x 5 = 840
840 ÷ 9 = 93° Celsius

To convert from Fahrenheit to Celsius:

$T_C = 5/9\ (T_F - 32)$

Now, convert the temperature units to finish the below table.

Fahrenheit		Celsius	Comments
	=	100º	Water boils
200º	=		
100º	=		
80º	=		
70º	=		
	=	20º	Typical room temperature
	=	10º	
	=	0º	Water freezes
-40º	=		

Special thanks to www.teachengineering.org for this worksheet.

Name _____

Virus Worksheet

Use your textbooks, library, or the internet to research and answer the following questions about viruses.

1. What is a virus made of?

2. What does the word virus mean?

3. Viruses that infect bacteria are called _____.

4. Study the incorrect statements below. Change the underlined word(s) to make each sentence correct. Write the correct new word(s) on the line.

   a. Viruses are <u>in the kingdom Archeabateria</u>. _____

   b. Viruses are made of <u>cells</u>. _____

   c. Viruses can be seen with <u>a light</u> microscope. _____

   d. Viruses can cause damage <u>only in humans</u>. _____

   e. Each kind of virus infects <u>several</u> hosts. _____

   f. Viruses are always <u>larger</u> than the cells they infect. _____

   g. Viruses reproduce <u>outside</u> of living cells. _____

   h. Viruses <u>do not harm</u> the cells in which they live. _____

5. Viruses are sometimes confusing to scientist because they show signs of acting both alive and not alive. List three things they have in common with living things (cells).

    a.

    b.

    c.

6. List three reasons why scientists do not believe viruses are alive.

    a.

    b.

    c.

Mission Debrief Class Discussion Guide

Your students will encounter a wide variety of educational topics in their Dream Flight Adventures mission. After the mission is complete, use this guide to lead your students in a class discussion to explore these topics in more depth.

Consider dividing your students into small groups to discuss each question and then share their group's opinion with the entire class. Be sure to let every student's voice be heard. Dream Flight Adventure missions are multi-faceted, and each student is exposed to a slightly different part of the story. Let every student share their thoughts and experiences so the entire group can benefit.

Suggested thought-provoking questions for *Pandemic* are:

How does prolonged isolation influence culture?

How do vastly different cultures interact when they collide?

What actions should be taken to maintain genetic diversity?

What is the future of nanomedicine?

What precautions should be implemented to protect against pandemics?

The Iberians and Aztlans had much to gain by working together, but fear, distrust, and superstition kept them apart for many years. What are some real world examples where fear, distrust, and cultural differences stand in the way of progress?

If you could do the mission again, what would you do differently?

How do you relate to the characters, events, or issues that you encountered during the mission?

What parts of the mission were the most challenging?

What new things did you learn during the experience?

Name _____

Multimedia Mission Memoir

Reflect on your recent Dream Flight Adventures mission and prepare a multimedia project that tells about your experience.

Be creative and draw upon any type of multimedia to create your project. Possible examples include posters, collages, short stories, PowerPoint presentations, dioramas, plays, podcasts, animations, videos, music, or comic books.

In your project, be sure to address the following questions:

- What happened during your mission? Summarize the events.
- What was your responsibility?
- What did you do in your mission? What were the results?
- If you could do the mission over again, what would you do differently?
- How do you relate to the characters, events, or issues that you encountered during the mission?
- What parts of the mission were the most challenging?
- What parts of the mission were the most exciting?
- What new things did you learn during the experience?
- Did the mission change the way you think about anything? If so, what, and how has your perspective changed?

Be prepared to share your project with your peers and to describe why you chose the form of multimedia you did.

Enrichment Materials

Resources for deeper inquiry and advanced students

The following third-party resources are recommended as enrichment materials for gifted or advanced students.

Spanish Conquistadors and the Aztec Civilization

Videos

History.com: *The Aztecs*
http://www.history.com/topics/aztecs/videos#the-aztecs

Guns, Germs, and Steel
http://www.youtube.com/watch?v=dCoSRhRfExk

Websites

The Fall of the Aztec Empire
http://www.aztec-history.com/fall-of-the-aztec-empire.html

Additional Instructor Resources

Discovery School — Cortes and the Aztecs: A Lesson in Leadership, grades 9-12
http://streaming.discoveryeducation.com/teacherCenter/lessonPlans/pdfs/9-12_SocialStudies_CortesAndTheAztecsALessonInLeadership.pdf

PBS.org — Cortes and the Aztecs: Different Views of the World
http://www.pbs.org/opb/conquistadors/teachers/pdf/unit1.pdf

Discovery Education — Conquest of the Americas, grades K-5
http://www.discoveryeducation.com/teachers/free-lesson-plans/conquest-of-the-americas.cfm

The Conquest of the Aztec Civilization, grades 9-12
http://www.outreachworld.org/Files/florida_internatl_u/ConquestofAztecCivilization.pdf

Anatomy and Physiology

Videos

Abirami & Magic Box: Learn about Human Body Parts For Kids - Introduction
http://www.youtube.com/watch?v=0nKz81R327w

Abirami & Magic Box: Learn about Human Body Parts For Kids - Heart
http://www.youtube.com/watch?v=gxUNxvsG7Ic

Abirami & Magic Box: Learn about Human Body Parts For Kids - Skeleton
http://www.youtube.com/watch?v=gmV8z0G2pv4

Websites

Online Blood Typing Game
http://www.nobelprize.org/educational/medicine/bloodtypinggame/index.html

Discovery — Human Body: Pushing the Limits interactive games and media
http://dsc.discovery.com/tv/human-body/human-body.html

National Geographic — Human Body interactive media
http://science.nationalgeographic.com/science/health-and-human-body/human-body/

Additional Instructor Resources

Variety of anatomy class activities for grades 3-5
http://teachers.net/lessons/posts/1185.html

Collection of anatomy links for teachers and kids
http://science.lotsoflessons.com/anatomy.html

Immune, Circulatory, and Lymphatic Systems

Videos

KidsHealth.org video introduction to the immune system
http://kidshealth.org/kid/htbw/ISmovie.html

Disease Detectives: Chance To Grow Up
http://videos.howstuffworks.com/health/immune-system-videos.htm

Appu Series — Learn Human Body - Immune System
http://www.youtube.com/watch?v=PkQcSMTRzjw

Animated introduction to the Lymphatic System
http://www.youtube.com/watch?v=Kh-XdNnTZUo

Circulatory System: Bill Nye on the Heart (two part series)
Part 1: http://www.youtube.com/watch?v=GbttJ-5do9M
Part 2: http://www.youtube.com/watch?v=RiYOuI7iyp8

Websites

KidsHealth.org introduction to the Immune System
http://kidshealth.org/kid/htbw/immune.html

Simple but thorough introduction to the Immune System
http://www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=152&id=2402

Additional Instructor Resources

Immune System lesson plan, grades 4-5
http://www.squidoo.com/immune-system-lesson-plan

Viruses and Viral Reproduction

Videos

National Geographic — Health: Virus Crisis
video.nationalgeographic.com/video/science/health-human-body-sci/health/virus-crisis-sci/

NPR — Flu Attack! How A Virus Invades Your Body
http://www.youtube.com/watch?v=Rpj0emEGShQ

Beauty of Nature - Viruses
http://www.youtube.com/watch?v=A409yO-G1Mk

Websites

KidsBiology.com — Viruses - The Sixth Kingdom?
http://www.kidsbiology.com/biology_basics/virus/virus_1.php

Kids Wanna Know: What is a Virus?
http://www.uskidsmags.com/blog/2011/03/21/adc-what-is-a-virus/

National Geographic — History News: How Flu Viruses Attack
http://video.nationalgeographic.com/video/news/history-archaeology-news/swine-flu-overview-vin/

Additional Instructor Resources

Discovery Education — Understanding Viruses lesson plan, grades 9-12
http://www.discoveryeducation.com/teachers/free-lesson-plans/understanding-viruses.cfm

PBS.org — Secrets of the Dead: Identifying Viruses
http://www.pbs.org/wnet/secrets/previous_seasons/lessons/lp_virus.html

Scientific Method

Videos

Virus-Vector Entertainment — The Scientific Method for Kids
http://www.youtube.com/watch?v=GUGFzQ4hZO8

Teaching the Scientific Method to K-5th graders
http://www.youtube.com/watch?v=2Afo1dmoPNs

Websites

Science In Action: Scientific Method for Kids
http://www.science-fair-projects-and-more.com/scientific-method-for-kids.html

Science Kids overview of the scientific method
http://www.sciencekids.co.nz/projects/thescientificmethod.html

Reasoning in Science
http://www.biology4kids.com/files/studies_scimethod.html

Additional Instructor Resources

Scientific Method lesson plan
http://chemistry.about.com/od/k12gradelessons/a/Scientific-Method-Lesson-Plan.htm

Teacher Feature: *MythBusters*: Scientific Inquiry
http://school.discoveryeducation.com/teachers/myth-busters/

BrainPop Jr. Activities
http://www.brainpopjr.com/science/scienceskills/scientificmethod/grownups.weml

Collection of anatomy links for teachers and kids
http://science.lotsoflessons.com/scientificmethod.html

Acidity,Temperature, and Pressure

Videos

Chem for Kids: Acids and Bases
http://www.youtube.com/watch?v=rHRoCyAc4YI

Stuff to Blow Your Kid's Mind: Atmospheric Pressure
http://videos.howstuffworks.com/howstuffworks/51302-stuff-to-blow-your-kids-mind-atmospheric-pressure-video.htm

Make Me Genius — Temperature
http://www.youtube.com/watch?v=W5teyd8srp8

Make Me Genius — Thermometer: Measuring Temperature
http://www.youtube.com/watch?v=0E46TN0rK_Y

Websites

Chem4Kids.com — Acids and Bases Are Everywhere
http://www.chem4kids.com/files/react_acidbase.html

Science Buddies — Acids, Bases, & the pH Scale
www.sciencebuddies.org/science-fair-projects/project_ideas/Chem_AcidsBasespHScale.shtml

BrainPop — pH
http://www.brainpop.com/science/matter/ph/preview.weml

Additional Instructor Resources

Measuring pH as it Relates to Water Quality — Grade 5 Science pH Activity
https://www.teachingchannel.org/videos/measuring-ph-science-activity

Prolonged Isolation and Disease Resistance

Videos

The Economist — Resistance to antibiotics: The spread of superbugs
http://www.economist.com/node/18483671

Center for Disease Control and Prevention: Dangerous Creatures – A Visit To The CDC Insectary
http://www.cdc.gov/cdctv/

Center for Disease Control and Prevention: Quarantine and Isolation
http://www.cdc.gov/quarantine/

Additional Instructor Resources

PBS.org — Evolution and Antibiotic Resistance
http://www.pbs.org/wgbh/evolution/educators/lessons/lesson6/act1.html