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

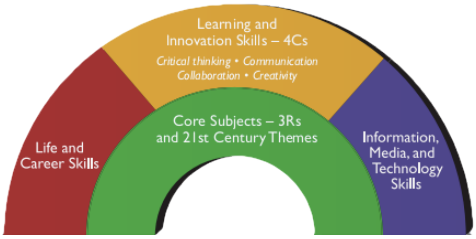
Dream Flight Adventure simulators are **immersive interactive environments** that throw students into the middle of epic stories. These stories are standards-based and built around core curriculum topics in science, social studies, technology, history, literature, and the arts.

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**.

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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.