



**DREAM FLIGHT
ADVENTURES**

Inspiring the world to think and dream

Instructor Packet

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



Introduction

Dream Flight Adventures is an interactive learning experience that 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.



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.



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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.



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Simulator Overview

A quick look at the where the magic happens



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 spatial 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.



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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.



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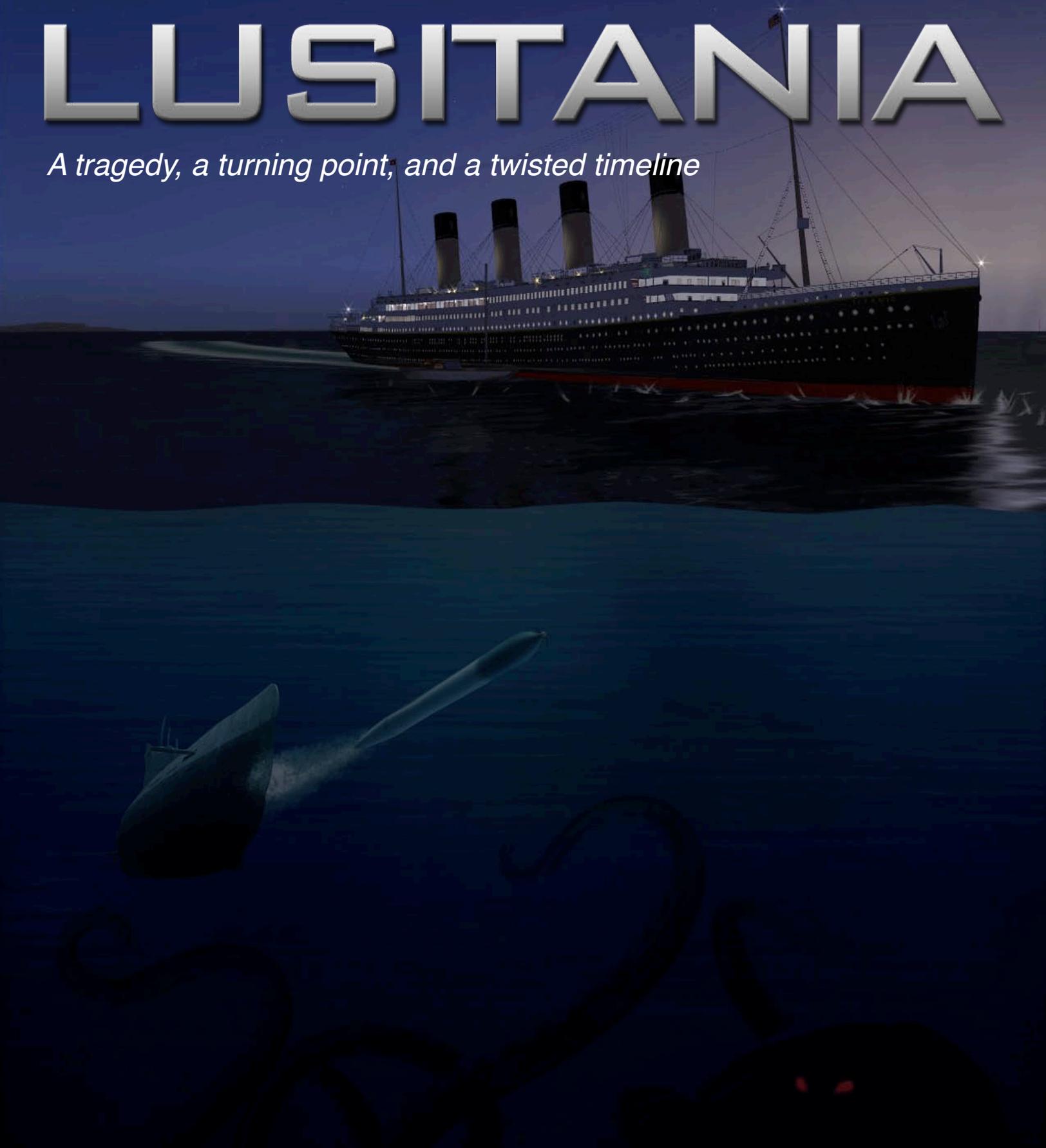
Mission Materials

Details about your specific mission

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

LUSITANIA

A tragedy, a turning point, and a twisted timeline



WORLD WAR I HISTORY – MARINE BIOLOGY – METRIC WEIGHTS AND MEASURES –
SONAR – CLASSIC LITERATURE: 20,000 LEAGUES UNDER THE SEA – DEPTH AND
PRESSURE – OCEANOGRAPHY – TURNING POINTS IN HISTORY



LUSITANIA

Mission Overview

The timeline has been altered! A fissure in time has opened and something from another world has crossed into the Atlantic Ocean in the year 1915. Its presence has triggered a chain of events that threatens to unravel human history as we know it!

In 1915 Europe was engulfed in World War I. German forces spread across the continent, and their powerful U-boat submarines threatened the seas. On May 7, 1915, a German U-boat sank a British passenger ship—the *Lusitania*—which was carrying almost 2,000 people, including many Americans. The *Lusitania* was unarmed, and this attack ultimately led to the United States entering the war.

With the help of the U.S., Germany was defeated in World War I and was punished severely. Germany was outraged and humiliated by its defeat, and over time this led to the Nazi's rise to power and the beginning of World War II 21 years later.

At the time of World War II, America was suffering through the Great Depression. The war helped America pull itself out of the Great Depression and become a political and economic superpower. This, in turn, led to many of the vital advances in science, technology, and medicine in the modern world.

At least, that's what was *supposed* to happen. But now the timeline has been altered, history is unraveling, and the world may change completely. The Infinity Knights—the renowned protectors of peace and justice throughout the universe—must act quickly to restore the timeline before Earth's history is overwritten.

Standards-Based Curriculum

World War I history
Marine biology
Metric weights and measures
Sonar

Classic Literature: 20,000 Leagues Under the Sea
Depth and Pressure
Oceanography
Turning Points in History

Higher Order Thinking

What positive outcomes can stem from tragedies?
How should one respond to oppression?
Who should be responsible for dispensing justice?
How should one decide whether to use a powerful ability?
How can the long-term impact of a person or action be measured?



LUSITANIA

Mission Introduction

The timeline has been altered! A fissure in time has opened and something from another world has crossed into the Atlantic Ocean in the year 1915. Its presence has triggered a chain of events that threatens to unravel human history as we know it!

In order to fully understand the implications of this event, a bit of historic background is required. In 1915 Europe was engulfed in World War I. German forces spread across the continent, and their powerful submarines—called U-boats—threatened the seas. On May 7, 1915, a German U-boat sank a British passenger ship—the *Lusitania*—which was carrying almost 2,000 people, including many Americans. The *Lusitania* was unarmed, and this attack ultimately led to the United States entering the war.

With the help of the U.S., Germany was defeated in World War I and was punished severely. Germany was outraged and humiliated by its defeat, and over time this led to the Nazi's rise to power and the beginning of World War II 21 years later.

At the time of World War II, America was suffering through the Great Depression. The war helped America pull itself out of the Great Depression and become a political and economic superpower. This, in turn, led to many of the vital advances in science, technology, and medicine in the modern world.

Every action in history has a reaction; each event has a consequence. This specific chain of events through history has led to the world we live in today.

At least, that's what was *supposed* to happen. But now the timeline has been altered, history is unraveling, and the world may change completely. Something important in history has changed, and this has sent a shockwave through the timeline. Once the shockwave reaches the present day the world as we know it will cease to exist. The Infinity Knights—the renowned protectors of peace and justice throughout the universe—must act quickly before Earth's history is overwritten. Your mission is to restore the timeline back to its original state.

Details are scarce, but here is what we know: a mysterious creature has crossed a fissure in time and entered the Atlantic Ocean. The creature—which has been described as a giant sea monster—appeared in 1915 and destroyed many German U-boats, including the one that would have sunk the *Lusitania*. As a result, the U.S. never entered World War I, and Germany conquered Europe. World War II never happened, and the United States never fully recovered from the Great Depression. Democracies were destroyed, and important advances in science, technology, and medicine never happened.

You must travel back in time, find the mysterious creature, and stop it before it can destroy the German U-boat. It must sink the *Lusitania* in order for the timeline to be restored!



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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.



Metric Mania Conversion Practice

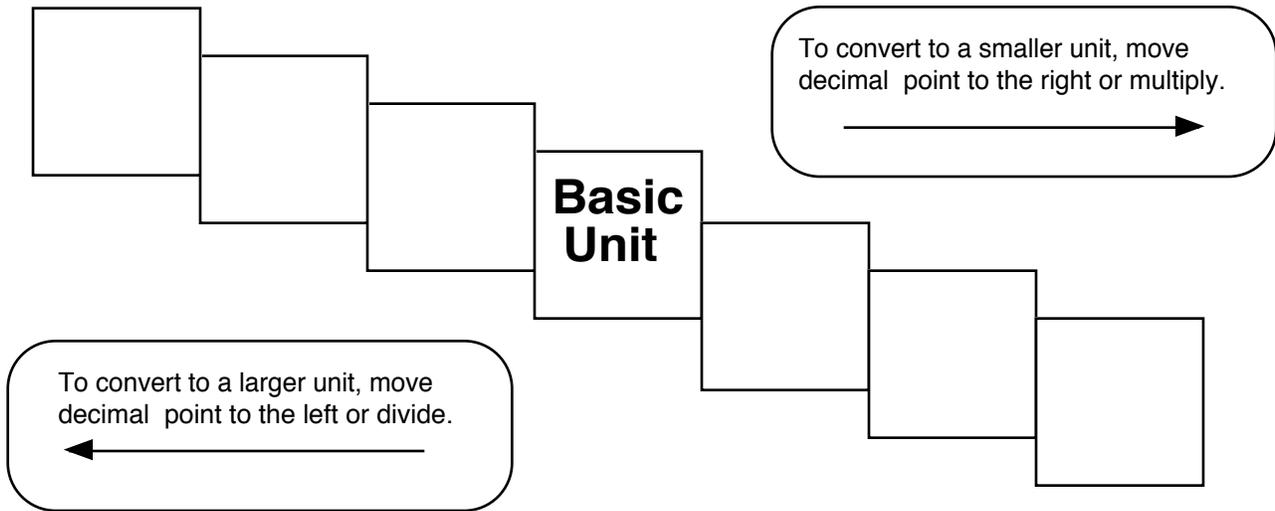
During the *Lusitania* simulation, students will learn about metric measurements isotopes and apply their understanding to identify marine animals. To build upon this learning, considering using the following hands-on project, provided by our partners at sciencespot.net.

This project can be done either **before** or **after** the *Lusitania* simulation.

Metric Mania

Conversion Practice

Name _____



Try these conversions, using the ladder method.

$1000 \text{ mg} = \underline{\hspace{2cm}} \text{ g}$

$1 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

$160 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$

$14 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

$109 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

$250 \text{ m} = \underline{\hspace{2cm}} \text{ km}$

Compare using $<$, $>$, or $=$.

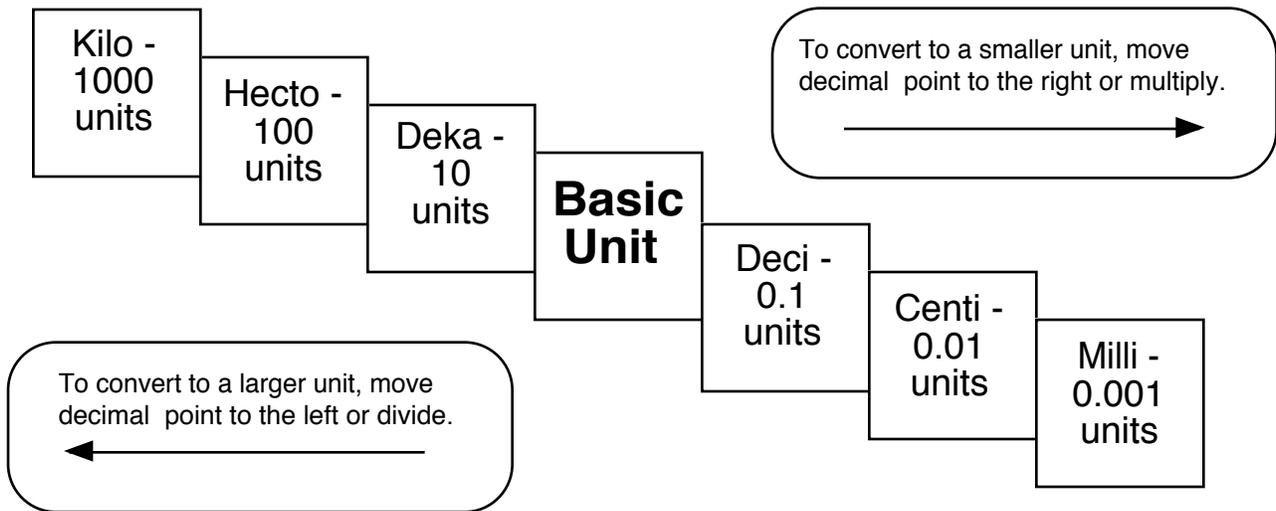
$56 \text{ cm} \bigcirc 6 \text{ m}$

$7 \text{ g} \bigcirc 698 \text{ mg}$

Metric Mania

Conversion Practice

Overhead Copy



Try these conversions, using the ladder method.

$1000 \text{ mg} = \underline{\hspace{2cm}} \text{ g}$

$1 \text{ L} = \underline{\hspace{2cm}} \text{ mL}$

$160 \text{ cm} = \underline{\hspace{2cm}} \text{ mm}$

$14 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

$109 \text{ g} = \underline{\hspace{2cm}} \text{ kg}$

$250 \text{ m} = \underline{\hspace{2cm}} \text{ km}$

Compare using $<$, $>$, or $=$.

$56 \text{ cm} \bigcirc 6 \text{ m}$

$7 \text{ g} \bigcirc 698 \text{ mg}$

Conversion Challenge

Write the correct abbreviation for each metric unit.

1) Kilogram _____

4) Milliliter _____

7) Kilometer _____

2) Meter _____

5) Millimeter _____

8) Centimeter _____

3) Gram _____

6) Liter _____

9) Milligram _____

Try these conversions, using the ladder method.

1) 2000 mg = _____ g

6) 5 L = _____ mL

11) 16 cm = _____ mm

2) 104 km = _____ m

7) 198 g = _____ kg

12) 2500 m = _____ km

3) 480 cm = _____ m

8) 75 mL = _____ L

13) 65 g = _____ mg

4) 5.6 kg = _____ g

9) 50 cm = _____ m

14) 6.3 cm = _____ mm

5) 8 mm = _____ cm

10) 5.6 m = _____ cm

15) 120 mg = _____ g

Compare using <, >, or =.

16) 63 cm 6 m17) 5 g 508 mg18) 1,500 mL 1.5 L19) 536 cm 53.6 dm20) 43 mg 5 g21) 3.6 m 36 cm

Metric Mania Answer Keys

Conversion Practice

NOTE: See overhead copy for the staircase boxes.

$$1000 \text{ mg} = 1 \text{ g}$$

$$160 \text{ cm} = 1600 \text{ mm}$$

$$109 \text{ g} = 0.109 \text{ kg}$$

$$1 \text{ l} = 1000 \text{ ml}$$

$$14 \text{ km} = 14000 \text{ m}$$

$$250 \text{ m} = .250 \text{ km}$$

$$56 \text{ cm} < 6 \text{ m}$$

$$7 \text{ g} > 698 \text{ mg}$$

Conversion Challenge

1. kg

2. m

3. g

4. ml

5. mm

6. l

7. km

8. cm

9. mg

1. 2 g

2. 104000 m

3. 4.8 m

4. 5600 g

5. .8 cm

6. 5000 ml

7. 0.198 kg

8. 0.075 l

9. 0.5 m

10. 560 cm

11. 160 mm

12. 2.5 km

13. 65000 mg

14. 63 mm

15. 0.12 g

16. <

17. >

18. =

19. =

20. <

21. >

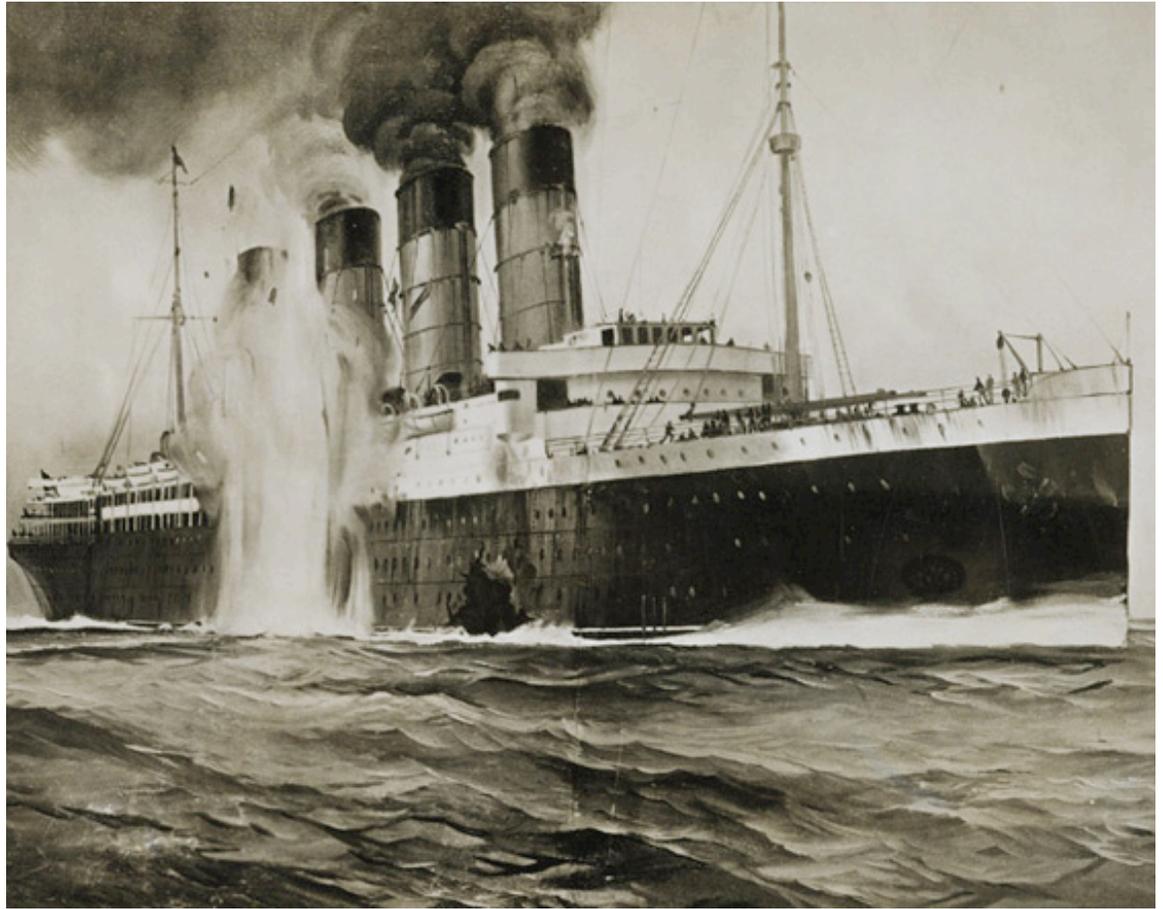


Sinking of the *Lusitania* Article Activity

During the *Lusitania* simulation, students will learn about the historic sinking of the *RMS Lusitania*, which led to the entry of the United States into World War I. To build upon this learning, considering using the following hands-on project, provided by our partners at BetterLesson.com.

This project can be done either **before** or **after** the *Lusitania* simulation.

LUSITANIA SUNK!



British Boat Sunk by German U-Boat!

By Allen Williamson - Associated Press

Yesterday, the cruise ship the Lusitania was sunk off the coast of England by a German U-boat. The Lusitania, a British cruise liner, had 1,959 people on board including the crew members who were in charge of taking care of the boat.

The voyage started in New York, and was supposed to end in Liverpool, England. The boat was moving very quickly through out the entire journey.

Yesterday morning, May 17, 1915, the Lusitania was getting very close to its destination in Liverpool. The captain slowed the ship down to prepare for the landing. Naval and boat expert John Anderson says, "When the Lusi-

tania slowed down, the boat was left open to attacks from the German U-Boats."

The Lusitania was hit in the morning hours, and sunk in only 18 minutes. Some experts think that the Lusitania sunk so fast because it was carrying weapons for the British army. When the torpedo hit the area that the weapons were being stored, the gun powder might have ignited, starting a fire and increasing the speed that the boat sank.

The number of deaths from the attack are not known, but it is believed to be in the thousands. Some of those are Americans. Because Americans died, some people in the United States are

calling for the U.S. to declare war on Germany for killing innocent people.

A Congressman from Georgia said, "We can not let this event go unanswered, we must defend and honor all Americans. We must go to war!"

This tragic event is one of the worst sea disasters of all time. Innocent women and children were killed. This may lead to the U.S. entering the war on the side of the Allied Powers trying to beat the Central Powers.

President Wilson had these comments, "We must honor the dead Americans who lost their lives."

Questions about the article:

1. What country was the Lusitania from? _____
2. How many people were on board the Lusitania? About how many people died? _____
3. Why did the Lusitania explode so quickly?

4. What effect might the sinking of Lusitania have on the United States?

5. Why did the Georgia Congressman want to enter World War I?

6. If you were president of the United States, would you want to enter World War I after Americans lost their lives during the sinking of the Lusitania? Why or Why not?



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 *Lusitania* are:

What positive outcomes can stem from tragedies?

How should one respond to oppression?

Who should be responsible for dispensing justice?

How should one decide whether to use a powerful ability?

How can the long-term impact of a person or action be measured?

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?

If you were Captain Dakkar on the *Leviathan* and had just found yourself in the 1915 Atlantic Ocean, what would you do?

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.



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Enrichment Materials

Resources for deeper inquiry and advanced students

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

World War I History

Videos

History.com — U-Boats Sink the Lusitania in 1915

<http://www.history.com/topics/lusitania/videos#u-boats-sink-the-lusitania-in-1915>

Student-made, BrainPOP-inspired video by 4th & 5th graders from Port Orange, Florida

http://www.brainpop.com/video_tutorials/lusitania/

Websites

PBS.org — Court of Inquiry into The Lusitania Sinking

http://www.pbs.org/lostliners/t_blame.html

Quiz Game — Death Ship: The Lusitania

<http://www.funtrivia.com/trivia-quiz/World/Death-Ship---The-Lusitania-149466.html>

Additional Instructor Resources

Lusitania Inquiry Lesson Plan

<http://academics.uww.edu/cni/degrees/secnded/ss/plan/10/docs/Inquiry%20Lesson%20Plan%20-Lusitania.pdf>

Inquiry Lesson: Why Did the United States Enter World War I?

<http://academics.uww.edu/cni/degrees/secnded/ss/plan/10/docs/Inquiry%20Lesson%20Plan-Why%20Did%20the%20United%20States%20Enter%20World%20War%20I.pdf>



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Marine Biology

Videos

MarineBio Ocean Channel

<http://marinebio.org/gallery/video/#.UN8l64njm1N>

Animal Planet: Best of Ocean Life

<http://animal.discovery.com/tv-shows/wild-kingdom/videos/wild-kingdom-ocean-life.htm>

Websites

NeoK12: Presentations, puzzles, quiz games, and videos about marine animals

<http://www.neok12.com/Marine-Animals.htm>

Discovery.com — Blue Planet videos, puzzles, news, and sea maps

<http://dsc.discovery.com/tv/blue-planet/blue-planet.html>

National Geographic: Ocean Life

<http://ocean.nationalgeographic.com/ocean/ocean-life/>

Additional Instructor Resources

National Geographic: Education — Are Sharks As Dangerous As We Think They Are?

http://education.nationalgeographic.com/archive/xpeditions/lessons/14/g35/dangershark.html?ar_a=1

Marine Biology Lesson Plans

<http://www.ugglug.com/marinelessonplans.html>

University of Arizona: Marine Discovery K-12 lesson plans

<http://marinediscovery.arizona.edu/lessons.html>



Metric Weights and Measures

Videos

Mammoth School: The Metric System

<http://www.youtube.com/watch?v=hnnCbgUSDvg>

Teaching Metric Conversions to Kids: Centimeter to Millimeter

www.ehow.com/video_12219638_teaching-metric-conversions-kids-centimeter-millimeter.html

NeoK12 videos: Measurements

<http://www.neok12.com/Measurements.htm>

Websites

Gamequarium.org — Measurement and conversion games

http://www.gamequarium.org/dir/Gamequarium/Math/Metric_System/

OnlineMathLearning.com — Measurement games

<http://www.onlinemathlearning.com/measurement-games.html>

Additional Instructor Resources

The Science Spot — Metric Mania Lesson Plans

<http://sciencespot.net/Pages/classmetric.html>

BetterLesson.com — Metric Conversion

<http://betterlesson.com/lesson/24919/metric-conversions>

Discovery Education: A Metric World

<http://www.discoveryeducation.com/teachers/free-lesson-plans/a-metric-world.cfm>



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Sonar

Videos

National Geographic: Scientists "See" Ocean Floor via Sonar

video.nationalgeographic.com/video/news/environment-news/us-ocean-floor-mapping-vin/

PBS Kids — Design Squad: Submarine Sonar

http://pbskids.org/go/video/pid=j0F37yRleX8kTFd24c9pTqgZp_IALFXC

Websites

EPA BOLDkids — Onboard Equipment

<http://www.epa.gov/boldkids/scienceonboard.html>

Exploratorium — How does sonar work?

<http://www.exploratorium.edu/theworld/sonar/sonar.html>

eHow — How does sonar work?

http://www.ehow.com/how-does_4567005_sonar-work.html

History of Sonar

http://inventors.about.com/od/sstartinventions/a/sonar_history.htm

Additional Instructor Resources

Sonar Classroom Activities

http://www.ehow.com/info_7879441_sonar-classroom-activities.html

US Navy Museum lesson plan — How Does Sonar Work? Mapping the Ocean Floor

http://usnavymuseum.org/Education_LP0011.asp

NOAA — Side Scan Sonar lesson plan, grades 7-8

oceanexplorer.noaa.gov/explorations/03portland/background/edu/media/portlandping.pdf



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Classic Literature: 20,000 Leagues Under the Sea

Videos

"20,000 Leagues Under the Sea" (1954) Trailer

<http://www.youtube.com/watch?v=Xhyuey4xU3Q>

Websites

Study Guide: Twenty Thousand Leagues Under the Sea by Jules Verne

[http://thebestnotes.com/booknotes/20000_Leagues_Verne/
Twenty_Thousand_Leagues_Under_The_Sea_Study_Guide02.html](http://thebestnotes.com/booknotes/20000_Leagues_Verne/Twenty_Thousand_Leagues_Under_The_Sea_Study_Guide02.html)

Additional Instructor Resources

20,000 Leagues Under the Sea literature unit resources

<http://www.easyfunschool.com/20000LeaguesIntro.html>

Depth and Pressure

Videos

NASA Sci Files — Ocean Odyssey - Ocean Pressure

<http://www.youtube.com/watch?v=4HmGf4ch-S0>

Websites

NOAA — Pressure increases with ocean depth

<http://oceanservice.noaa.gov/facts/pressure.html>



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Additional Instructor Resources

Pressure Exploration Activity

http://www.marine.ie/NR/rdonlyres/DFC2CF28-1E6C-43F0-BD5F-2F7890292A30/0/ELessonPlan_WhatisPressure.pdf

BBC — Pressure Under Water activity plan

http://downloads.bbc.co.uk/schools/teachers/bang/bang_tp_pressure_under_water.pdf

Turning Points in History

Videos

History's Turning Points documentary

<http://topdocumentaryfilms.com/historys-turning-points/>

Websites

National Archives: Turning Points

<http://www.archives.gov/education/history-day/turning-points/index.html>

NASA: What Are Turning Points in History, and What Were They for the Space Age?

<http://history.nasa.gov/sp4801-chapter2.pdf>

Additional Instructor Resources

Turning Points in American History lesson plans, by time period and grade level

http://www.turningpointsinamericanhistory.org/lesson_categories.php



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Oceanography

Videos

Assignment Discovery: Mathematics of an Ocean Wave

<http://videos.howstuffworks.com/science/oceanography-videos.htm>

Discovery News — Cool Jobs: Oceanographer

<http://news.discovery.com/videos/cool-jobs-cool-jobs-oceanographer.html>

Websites

KidsKonnnect.com — Oceanography

<http://www.kidskonnnect.com/subjectindex/15-educational/science/93-oceanography.html>

Kids.gov — Oceanographer

<http://kids.usa.gov/watch-videos/videos/oceanographer/index.shtml>

Learning the Zones of the ocean using an oil spill

http://marinediscovery.arizona.edu/lessons/brittle_stars/Templates/index.html

Additional Instructor Resources

National Geographic Education — We're in Hot Water Now: Hydrothermal Vents

<http://kids.usa.gov/watch-videos/videos/oceanographer/index.shtml>