

Racing a Ghost Ship! — Program Introduction

Racing a Ghost Ship!, first run in 1993 under the name *Ocean Challenge*, was designed to inspire and educate children and adults about taking on a serious challenge: to sail from San Francisco to Boston via Cape Horn. In 1993 Rich Wilson and Bill Biewenga took on this challenge in an effort to set a new speed record on this route set by the clipper ship *Northern Light* in 1853. Rich and Bill sailed the 53-foot trimaran *Great American II* in pursuit of their goal—to beat the *Northern Light*'s time of 76 days, six hours.

On the surface, Rich and Bill's voyage was aimed at beating a sailing record. On a deeper level, they wanted to bring their adventure to as many children as possible in order to demonstrate the skills and principles of sailing, motivation, vision, perseverance, cooperation, decision-making, perspective, thought, and success—all important life skills. In pursuit of this goal, Rich and Bill reached and inspired over 250,000 school children through a Newspaper in Education program, PRODIGY, and a 900 number that contained daily updates.

By following their 1993 voyage again, this time on the sitesALIVE! website (www.sitesalive.com), you and your students can still feel the excitement and learn about the challenges faced by Rich and Bill. This teacher's guide will provide the structure to help your students get the most out *Racing a Ghost Ship!*

Racing a Ghost Ship! — Program Components

The descriptions below highlight the various components of *Racing a Ghost Ship!* and how these components can be used to enhance students' experiences as they follow the voyage of *Great American II*.

Newspaper Connection

Once a week, your students will see that this story is a vital part of the day's news. A weekly report series is available on the sitesALIVE! website. These updates will link your classroom to the actual experiences of the team at sea. The weekly reports are coordinated with the lessons your students work on, so they will see a special connection between the newspaper and their own class projects. The lesson plans also involve students in using all the other sections of the paper. Your students will complete this project with more skills and with a new appreciation of the value of the information they can get from the newspaper.

Computer Connection

Daily updates of the 1993 voyage are available on the sitesALIVE! website at www.sitesalive.com in *Racing a Ghost Ship!*. You can access the Weekly Reports, the Captain's Log, the Ships Log, Questions & Answers, Photo Galleries, Audio Reports (daily!), and Activities.

American Lung Association Connection

Rich Wilson has had severe asthma since childhood, and manages this chronic lung disease by taking four prescription asthma medications daily. The American Lung Association is using the voyage to promote asthma awareness and education, and has honored Rich as one of its SuperAchievers—a group of Olympic, professional and amateur athletes competitive in their sports despite asthma. Rich's example serves to encourage children facing a variety of challenges.

Parent Involvement

Activities that involve parents are structured into the *Racing a Ghost Ship!* lesson plans. Parents are encouraged to work with their children on the weekly report activities and related homework projects.

Lesson Plans

Eleven weekly Lesson Plans have been designed to develop students' skills in math and writing as they learn about decision-making. To succeed in the classroom projects, your students will have to use the same kinds of planning and teamwork that will enable the *Racing a Ghost Ship!* team to succeed. The lesson plans contain options to expand learning into individual and team projects so that students can increase their skills as they learn more about the adventure.

Team Projects

Suggested projects are provided to organize ongoing student teams that will focus on different aspects of *Racing a Ghost Ship!*. To help structure the projects, a suggested Project Guide is included for each team. A Team Project can be linked to the lesson explicitly when there is a connection between the project a team is working on and the topic of the lesson.

Lesson Plan Structure

Each lesson plan provides a focus for one-session in-class activities and a theme for whole-class discussions. In addition, each lesson includes projects that can be continued at home to involve families and friends in the learning process. You can organize an entire unit of study around activities built into each lesson plan.

LESSON PLAN OUTLINE AND COMPONENTS

Lesson Plan Outline

Week 1 – Getting Ready

Theme: Vision and Motivation

Skills: Identifying Needs, Planning, Locating a Position

Week 2 – One Week’s Travel

Theme: Route and Requirements

Skills: Identifying Details, Tracing a Route, Calculating Averages

Week 3 – Weather And Whether

Theme: Making Decisions

Skills: Decision-making, Contrasting Routes, Making a Chart

Week 4 – The Environment: Water And Air

Theme: Limits

Skills: Recognizing Limits, Persuasive Writing, Interpreting Climates

Week 5 – Persevering

Theme: Commitment

Skills: Identifying Motivation, Making Projections

Week 6 – Midpoint

Theme: Turning Point

Skills: Identifying a Turning Point, Interpreting a Situation

Week 7 – The Team

Theme: Teamwork

Skills: Analyzing Decisions, Identifying Cause-Effect Relationships

Week 8 – Invisible Places

Theme: Describing Places

Skills: Using an Atlas, Expository Writing

Week 9 – Water Connections

Theme: Ecosystems

Skills: Recognizing Connections, Drawing a Diagram

Week 10 – Looking Back

Theme: Perspective

Skills: Analyzing Events, Narrative Writing

Week 11 – Land Again

Theme: Defining Success

Skills: Recognizing Achievement, Learning from Success

Lesson Components

Each lesson contains the following components:

- **Theme**: A theme for the week relating to the journey.
- **Skills**: The types of skills students will develop and apply as they work on the activities in the lesson.
- **Key Words**: Words that highlight the content of the lesson.
- **Resources**: Supplemental materials (besides newspapers and student Route Maps) needed to carry out the lesson plan. We encourage you to expand on these suggested materials. For example, a classroom globe or world map would be especially useful in this program.
- **Introducing the Lesson**: A way to orient the students to the theme of the lesson.
- **Using the Newspaper**: A project that will involve students in actively collecting information from the newspaper.
- **Classroom Project**: An activity to build skills as your students use information about *Racing a Ghost Ship!* in innovative projects.
- **Home Connection**: An activity that the students can work on with family and friends to link the classroom and home.
- **Map/Math Connection**: A project to develop students' knowledge of geography as well as their skills in making and using maps. These projects emphasize the usefulness of mathematics in interpreting real situations.
- **Project Team Connection**: Suggested team activity or presentation related to the theme of the week.

Week 1: Getting Ready

- Theme: Vision and Motivation
- Skills: Identifying Needs, Planning, Locating a Position
- Key Words: vision, motivation, prediction
- Resources: Biographies of the Crew, Parent Information Letter

Introducing the Lesson

Ask students to recall a difficult trip that someone has made. Tell them it could be someone in their family. Point out that it is always easy to dream of making a trip, but that really meeting the challenge of a difficult journey is one reason why there are not many stories of people who do this every day. Ask the students to put themselves in Rich and Bill's shoes. Ask them to predict the kinds of situations they might encounter, and the fears they would have to overcome, while sailing around South America. Then have them list things they would want to pack on their boat.

Using the Newspaper

Discuss the terms "motivation" and "vision" with the students and be sure they understand their meanings. Ask students to go to the Weekly Report for Week 1 and read the description of *Northern Light's* record. Then review the Help Wanted section of the newspaper and ask the students to write an employment ad for an individual who would be qualified to undertake the *Racing a Ghost Ship!* project. Compare the ads with the crew's qualifications outlined in their Biographies.

Classroom Project

Organize the teams that will work on specific projects. Be sure that they have a clear understanding of their responsibilities. Point out that in a way they are going to be like "Mission Control"—providing information and logistical support for the boat and keeping the entire class updated on their team's progress.

Home Connection

Make copies of the Parent Information Letter and instruct students to give them to their parents. Have students take the newspaper home and work on the Kids' News Explorer in the Update Series with their parents. *The activities in the newspaper Update Series should be continued at home on an ongoing basis.*

Map/Math Connection

Discuss different types of maps (road, relief, population, etc.) and explain that Rich and Bill will be relying on detailed charts and sophisticated navigational equipment to pinpoint their location. Introduce Latitude and Longitude and instruct students to mark the location of your school and on copies of the route map you give them. Have them estimate the school's latitude, longitude and how far *Great American II* is from it. Then have them compare the weather in your area with the weather where Rich and Bill are.

Project Team Connection

To reinforce the teams' responsibilities, have each team contribute one idea about their part of the project. For example, ask the nutrition team what their first advice to Rich and Bill about what kind of food to take on the boat would be.

Week 2: One Week's Travel

- Theme: Route and Requirements
- Skills: Identifying Details, Tracing a Route, Calculating Averages
- Key Words: estimate, description, observation
- Resources: calculators (optional)

Introducing the Lesson

Point out that the entire trip, if successful, will cover 15,000 miles in less than 11 weeks. It is doubtful that the crew will see land or many other ships before they reach Boston and there will be no time-outs, no refs, no substitutes, and no guarantees. Have students estimate how far *Great American II* will have to travel each week to break the 76-day record. Explain that actually there will be some weeks in which the boat goes farther and others in which it covers less distance. Ask the students to list challenges that would affect how fast the boat travels.

Using the Newspaper

Remind students that long ago ships had "lookouts" who spent hours high above the deck looking for problems, land, and other information. Have students search the newspaper to find examples of hazards in the weather, in government, or in any other area, that might affect the trip.

Classroom Project

Have students practice developing a sailor's careful vision by describing environments they find in newspaper photos. To increase the skills development (and interest level) of this activity, have students write or say descriptions of places but not tell where in the newspaper they found the photos.

Home Connection

Have students interview their parents and get their predictions of challenges that the crew will encounter along their route. Students should begin to get into the habit of involving their parents in working with them on the activities on the website.

Map/Math Connection

With data from this week's Ship's Log section of the sitesALIVE! website, have students trace the first week's progress on their copies of the Route Map. Then, from the number of miles the boat travels during its first week, have them calculate its average speed. *Continue this activity on an ongoing basis.*

Project Team Connection

The Energy And Mechanics Team can present what they have learned about the trimaran and how it works. For a better perspective of the working area Rich and Bill have, the Energy And Mechanics Team can lead the class in laying out the overall dimensions of *Great American II* (53 feet long X 45 feet wide) on a playground or in the gym. Then lay out the area of the confined living quarters below deck, between the mast and the cockpit (10 feet long x 8 feet wide x 6 feet high). If practical take the class to the seventh floor of a building and look out a window to simulate what it will be like for Rich and Bill working at the top of a pitching 76-foot mast.

Week 3: Weather And Whether

- Theme: Making Decisions
- Skills: Decision-making, Contrasting Routes, Making a Chart
- Key Words: route, decision, alternative
- Resources: student logs

Introducing the Lesson

Ask students if they have ever taken a route that was longer than another route but safer or different in some other way. Ask them to explain why they chose to take the longer route. Point out that daily—in fact hourly—the *Racing a Ghost Ship!* team must decide between different routes.

Using the Newspaper

Have students find examples of decision-making in the paper. Ask each student to find a person whose decision is reported in the newspaper (They can include cartoon characters!). Then ask them to identify the factors that affected the choice that person made.

Classroom Project

Have students make a two-part chart. In one column they should list reasons Rich and Bill might choose one route. In the other column, they should list reasons why the crew might avoid a route. For example, the crew might choose a route that has consistent prevailing winds and avoid a route that has a lot of storms. They should base their information on their research, and the information they have gained from the Weekly Reports, and the sitesALIVE! website.

Home Connection

Have students interview parents and grandparents about choices they have made about routes. They can expand this interview beyond geography to ask about choices of careers or other kinds of decisions that are influenced by many factors.

Map/Math Connection

Have students contrast the route *Great American II* is taking with alternatives, including *Northern Light's* route, in terms of distance and direction. Ask them why the team may have chosen the route taken so far. Discuss choices made by other voyagers like Columbus and Magellan.

Project Team Connection

The Navigation and Weather Team can summarize *Great American II's* progress to date and predict the next week's progress, considering the influence of anticipated weather.

Week 4: The Environment – Water And Air

- Theme: Limits
- Skills: Recognizing Limits, Persuasive Writing, Interpreting Climates
- Key Words: environment, pollution, climate
- Resources: atlases

Introducing the Lesson

Ask students to estimate how much water they consume during a day. Then ask what they would do if they could not get clean water. Point out that there is only so much water in the world and that much of it gets polluted daily.

Using the Newspaper

Have students search the newspaper for examples of problems that affect the air or water in their community. Expand the boundaries of their community to the world and point out that sooner or later what happens in one environment affects all environments.

Classroom Project

Have students analyze the ways in which the editorials in the paper are organized to make a point and support that point with information. Then have students write a guest editorial about pollution from a point of view related to *Racing a Ghost Ship!*. For example, they could write a letter from Rich or Bill, or a letter from a fish.

Home Connection

Have students survey their parents about environmental concerns based on stories from the paper. Have students collect their survey information and make a report, including recommendations from parents, about ways to improve the environment.

Map/Math Connection

Have students use atlases to find information about the climate in the location of the boat. Ask them to figure out what temperature the air probably is and also whether the team is likely to collect some fresh water from rainfall during the next week.

Project Team Connection

The Geography and Environment Team can summarize its findings on the various environments *Great American II* has passed so far.

Week 5: Persevering

- Theme: Commitment
- Skills: Identifying Motivation, Making Projections
- Key Words: challenge, commitment, perseverance
- Resources: student logs

Introducing the Lesson

Ask students to recall any situations in which they or other people have kept working at something even though it was very difficult. Explain that if someone continues despite challenges, that person has real commitment. Also explain that motivation means the reason someone does something. Ask them what they think the motivation of the members of the *Great American II* crew is and why Rich and Bill will persevere to complete the trip.

Using the Newspaper

Have students search the newspaper for examples of individuals who are making commitments to continue in situations despite challenges. Discuss the motivation of each of those individuals.

Classroom Project

Have students review and share the information they have gathered so far about the trip to figure out some of the challenges the team has faced. Be sure that they read the Weekly Report to find out first-hand about the challenges and the reasons the team is so committed.

Home Connection

Have students interview their parents, grandparents, or other relatives to find out about their family history. Students should ask their family members about situations that they have found challenging but where they were committed and persevered.

Map/Math Connection

Ask students to predict challenges that the team will have during the next few weeks based on their current location and the weather along the route for the next stage of the trip. Have them use math to determine the estimated time at which the boat will reach those problem areas.

Project Team Connection

The History Team and the Geography And Environment Team can present information they have gathered about the Cape Horn region, including the various explorers who have traveled there. Then have a class discussion of what Rich and Bill might be thinking as they approach this treacherous area where Rich capsized two years ago.

Week 6: Midpoint

- Theme: Turning Point
- Skills: Identifying a Turning Point, Interpreting a Situation
- Key Words: midpoint, perspective, compass
- Resources: student logs

Introducing the Lesson

Point out to students that at the midpoint in a journey, people can look back and look ahead with two different perspectives. They can look back and think of things they would do differently. They can look ahead and think of ways they will act differently based on what they have learned during the first part of their journey. Ask them what they might do differently at this time of the school year based on experiences they have had so far.

Using the Newspaper

Have students search the newspaper for examples of individuals or organizations at a turning point. This could be a sports team, a business that has just issued a quarterly report, or a store having a semi-annual sale. Ask the students to think about the situation reported as if they were making decisions. What kinds of things would the people who are at the turning point have to think about from their earlier experience? What kinds of things might they plan ahead for based on that experience?

Classroom Project

Have each Project Team assess the status of the voyage, identifying specific achievements as well as the challenges, and predict whether *Great American II* will break *Northern Light's* record. Make sure that teams explain the reasoning behind their predictions.

Home Connection

Have students interview their parents, grandparents, or other relatives to find out about turning points in their family history. Students should ask their family members about situations that they learned from, what they learned, and how they then moved ahead in different ways or directions.

Map/Math Connection

Ask students to turn their Route Maps upside down and view them from that perspective. Ask if they notice anything different about the route or have any different predictions about the next weeks when they see the maps from that perspective. Point out that there is no reason why we always put north at the "top" of maps. Ask them how people would use a compass if, instead of having north as the top of maps, people used south, east, or west as the top. To encourage students to think anew about maps and geography, have them put away any maps and draw their own map of the route that the boat will follow in the next five weeks. Then have them exchange their maps and see which person's map has the most accurate contour and detail.

Project Team Connection

The Information Team can present their work on the time-line and ask the rest of the class to contribute details, or make up "headlines" for each of the weeks to date.

Week 7: The Team

- Theme: Teamwork
- Skills: Analyzing Decisions, Identifying Cause-Effect Relationships
- Key Words: cooperation, decision, tolerance
- Resources: student logs

Introducing the Lesson

Ask students what interpersonal problems Rich and Bill might be having at this time. Point out that they have to share every thing, including decisions, and tolerate each other 24 hours a day. Ask students what they think one team-member might say if the other makes a decision that leads the boat into problems.

Using the Newspaper

Have students look in the sports section for examples of decision-making that led to a loss. Ask them to imagine (and even to role-play) the dialogue that took place before a decision. Then ask them to imagine (and act out) the dialogue that took place after the decision that led to the loss.

Classroom Project

Have students review their records of the trip so far to identify decisions that have been made. Have them analyze the decisions in terms of whether the team made decisions that led to problems. Then ask what they think the team learned from those decisions.

Home Connection

Have students interview their parents about a major decision they made and reflect on what they learned from the outcome of that decision. They can discuss decisions about the presidential election, for example, and why their parents voted as they did.

Map/Math Connection

Assign students to work in pairs on a difficult project that requires decision-making. Have them predict where the boat is at this time. Then, after the teams have completed their projects, check the audio updates on the sitesALIVE! website to find the answer. If a team has made a prediction that is far from accurate, ask them what they have learned from the decision.

Project Team Connection

The Teamwork Team can summarize their evaluation of how Rich and Bill are working together. They can ask the rest of the class for additional clues related to the crew's teamwork.

Week 8: Invisible Places

- Theme: Describing Places
- Skills: Using an Atlas, Expository Writing
- Key Words: environment, imagine, hemisphere
- Resources: atlases, Communications Team Project Guide (pg. 26)

Introducing The Lesson

Point out that at this point, the *Great American II* crew hasn't seen land for seven weeks. Ask the students to imagine what the crew is missing at this time.

Using The Newspaper

Use the Communications Team Project Guide as a class project. Have students search the newspaper, identify news of interest to Rich and Bill, and write a news digest for the crew. You can organize the project so that students work in teams on different sections of the newspaper.

Classroom Project

Have students use their Route Maps to identify countries that the boat has passed by so far. Then assign countries to teams of students. Each team should research its country, using an atlas, and report to the class on the country's population, climate and environment.

Home Connection

To provide a connection with the country study project, have students work with their parents to figure out what news about the United States from the paper they would want to send to people in the country they studied, so that those people would learn about our country.

Map/Math Connection

Introduce hemispheres (Northern, Southern, Eastern, and Western) to the students. Explain how Rich and Bill have been in both the Northern and Southern Hemispheres while sailing in the Western Hemisphere. Have students make a chart and list everything they know about the Northern Hemisphere in one column. For every fact about the Northern Hemisphere have them give one about the Southern Hemisphere in another column.

Project Team Connection

The Nutrition And Health Team can present what they have learned about the food, water, medical and sleep requirements of the crew. They can ask the class to suggest ways to make the food more interesting since Rich and Bill are seven weeks into their voyage.

Week 9: Water Connections

- Theme: Ecosystems
- Skills: Recognizing Connections, Drawing a Diagram
- Key Words: ecosystem, rain forest, food chain
- Resources: atlases, oil, feather, rock, toothbrush, dishwashing gloves

Introducing the Lesson

Point out that the route of the trip passes by the Amazon River, which drains the Amazon Basin, an area that holds an enormous natural ecosystem, the rainforest. Discuss the concern that the rainforest is being destroyed daily.

Using the Newspaper

Point out that the newspaper itself may be on recycled paper. Ask students to search through the paper for examples of ways people can conserve resources.

Classroom Project

Set up this demonstration: put oil on a rock and on a feather. Give one student dishwashing gloves and a toothbrush and ask that student to try to clean the rock with the toothbrush. Then give the same student a feather that also has been oiled. Ask the student to try to clean the feather. Point out that oil spills create major problems for wildlife because the animals are not able to clean themselves of unnatural substances. Then, have students draw a diagram of an ocean food chain, and point out that once a part of an ecosystem is polluted, every creature in that system is affected.

Home Connection

Ask students to draw diagrams with their family of the connections between the environment and their household. For example, they can show the source of water for the family, the ways the community cleans that water, and the route to the household.

Map/Math Connection

Divide students into teams and have them determine a location for a world nature center along *Great American II's* route. Each team should interpret the areas shown in an atlas, select one site they think is the most valuable environment to preserve, and present their proposal to the class.

Project Team Connection

The Marine Life Team can report on the variety of marine life it has researched, and present its work on an ocean food chain based on animals spotted by Rich and Bill.

Week 10: Looking Back

- Theme: Perspective
- Skills: Analyzing Events, Narrative Writing
- Key Words: perspective, challenge, lesson, narrative
- Resources: student logs

Introducing the Lesson

Point out that the trip is nearing its close. Ask the students what they think the most important events have been.

Using the Newspaper

Explain that a narrative is a way of telling the story of an event from beginning to end. Have students find narratives in the newspaper. Ask them what they notice about the kinds of information the reporter includes. Then have them write the story of the trip so far. Divide the project so that each student writes one paragraph. Tell them to use newspaper style in their writing.

Classroom Project

Have students review their logs and records to find lessons that the crew has learned during the trip. Explain that Rich and Bill will have a different perspective now that they have almost finished their trip and reached their goal. Ask them what they predict the team will say upon landing.

Home Connection

Have students survey their parents and ask them which of the nine weeks they think was the most challenging of the trip and why. Then, as a class, have students combine their survey results in a bar graph.

Map/Math Connection

Use the Ship's Log section of this week's Weekly Report to determine the distance completed so far and the distance remaining. Have students calculate the hourly rate at which *Great American II* is traveling and predict the actual day and hour of her arrival in Boston. You can do this as a contest to see whose prediction ends up being the most accurate.

Project Team Connection

The Communications Team can report on what they have learned about the communications systems on board *Great American II*. They can also summarize the news they have listed for reporting to Rich and Bill so far. Encourage the class to discuss what news is most important and why.

Week 11: Land Again

- Skills: Recognizing Achievement, Learning from Success
- Theme: Defining Success
- Key Words: success, guarantee, skills, achievement
- Resources: student logs

Introducing The Lesson

Have students review their notes about the trip. Remind them that at the beginning there was no guarantee that the team would reach their goal. Have them define success. Is it limited to breaking the *Northern Light* record? Or may it also mean sailing the boat safely to Boston after overcoming many dangers and obstacles? Ask them what factors they think were most important in enabling the team to succeed and get to their destination.

Using The Newspaper

Have students look through the paper for examples of people who have overcome challenges. Ask them to read the articles carefully to identify factors that have enabled those individuals to succeed.

Classroom Project

Have students determine the skills and information that they think were most important to Rich and Bill in their achievement. Also ask them to suggest what the crew would do differently if they were to start the trip over again.

Home Connection

Have students make a booklet for their home library of the materials they produced during the trip.

Map/Math Connection

Make a large annotated route map as a class. Have students write a special kind of map key with headlines at specific places along the route where significant events occurred. They also should annotate the route in terms of the average speed between the locations they identify.

Project Team Connection

The Book and Movie Team can act out the final scene of their film, and each other team can present their own brief summary of the voyage.

Special Project

Have your students prepare a "Special Edition" of the newspaper to celebrate the completion of the *Great American II's* journey and their own work.

The Special Edition should include the following components:

Front Page: Headline and main feature story. "Side-bars"—related articles including interviews in which students may include quotes from the daily audio updates as well as interviews with members of the class who have become "experts" about specific aspects of the journey.

Features: Articles about different aspects of the journey. Each team can submit an article relating to the focus of their work.

Perspectives: Editorials and an editorial cartoon about the meaning of *Racing a Ghost Ship!*

Challenge Section: This section should include math problems based on the data about the journey, and a crossword puzzle focusing on specific terms of importance to *Racing a Ghost Ship!*

STUDENT PROJECT TEAMS

Assign students to work in teams of two or three to take responsibility for projects related to different aspects of the voyage. Suggested team topics are listed below. Project Guides included for each team can be used to organize the teams. You decide how many teams to organize and what their responsibilities are. We recommend that you schedule weekly updates from the teams so that cooperative learning can take place at the class level as well as within the small groups. You also can organize the “team of the week” approach, scheduling one team each week to make a special report on its findings. A “team of the week” is suggested in the Project Team Connection section of each lesson plan.

Information Team

Collect and distribute to the other teams data and information regarding the voyage, and maintain a time-line.

- Seek daily information and data from all available sources (newspapers, encyclopedias, people interviewed, *Racing a Ghost Ship!* on the sitesALIVE! website, etc.)
- Listen to the daily audio updates to get information about the trip and sense the crew's mood. (This responsibility could be shared by all the teams on a rotating basis.)
- Maintain a time-line display for the duration of the voyage. This should include items collected from the other project teams.

Navigation and Weather Team

Learn about and report on navigation methods, weather systems and climate patterns.

- Plot the weekly position of *Great American II*, calculate distances and averages, and predict future positions.
- One or two students can be the "weather bureau" for this team. Use the sitesALIVE! website to collect information and report on the wind direction and velocity, wave heights, storms, and sea and air temperatures that *Great American II* experiences.
- Research the various climates and ocean currents *Great American II* will pass through; include trade winds, expected rainfall and temperature ranges.

Geography And Environment Team

Research and report on the physical features and environmental concerns of the regions that *Great American II* passes.

- Collect information about the regions traveled and countries passed along the route from atlases and encyclopedias. This research can be divided among the team members with each member taking one week's location to study.
- Learn about and report on the environmental issues facing the oceans and countries that *Great American II* passes.

History Team

Learn about and report on trade routes, commerce in natural resources and manufactured products, exploration at sea, and the history of the countries that *Great American II* passes.

- Collect information from history textbooks to show that there is a direct connection between material in those textbooks and the current situations in places around the world.

Nutrition and Health Team

Learn about and report on the food (there is no refrigeration), water (desalinated), medical needs (Rich has severe asthma), and sleep needs of *Great American II*'s crew.

- Find out what the average person needs in terms of nutrition. Then determine the needs of an individual working hard for as many as 18 hours a day. Investigate how nutrition needs might change in the different climates *Great American II* will encounter.
- Contact a doctor, pharmacist, or the American Lung Association to get information about asthma.
- Research essential sleep requirements and recommend a “watch” system for Rich and Bill.

Energy and Mechanics Team

Learn about and report on electricity generation (solar, wind, diesel generator) and use (lights, computers, radios, autopilots, desalinators, etc.) and the mechanics (sails, ropes, pulleys, flotation, structure, materials) of *Great American II*.

- Collect information on basic elements of sailboats and then find out more about trimarans and the advantages and disadvantages of monohulls and multihulls.
- Determine strategies to conserve energy on board and deal with unexpected energy needs.
- Construct an energy generation and consumption table for *Great American II* and for your family's home.

Communications Team

Research and report on the radio and satellite transmission systems on board *Great American II*, and compose weekly updates for the crew about events "on-shore".

- Find out how radio and satellite communications work and what their respective advantages are. Compare the frequencies they use to those used for television and FM radio.
- "Digest" the newspaper and keep a record of information to be sent to the boat (hypothetically). Topics can include sports, politics, international events, etc.

Book and Movie Team

Write the story of the voyage for a book and create scenes, dialogue, and casting for a movie or play.

- Use information from the sitesALIVE! website and information from the other student teams to write this story.
- Students with a special interest in art may work as illustrators on this team.

Teamwork Team

Learn about and report to the class on the personal backgrounds of *Great American II*'s crew, their mental, physical, and emotional strengths and weaknesses, and how they are working as a team.

- Collect information about the progress and problems of the *Racing a Ghost Ship!* crew from the sitesALIVE! website (being sensitive to the feelings that the crew's voices communicate).
- This team may expand its work to write a guide to working as a team.

Marine Life Team

Research and report on the vast array of marine life found in the regions *Great American II* passes.

- Find out about the variety of fish, marine mammals, birds, and other organisms that populate the oceans and learn about food chains and migrations.
- Collect information on various industries based near the regions Rich and Bill will travel and the impact these industries have had on marine life. Include fishing, whaling, oil exploration and shipping.
- Record wildlife sightings reported by Rich and Bill.

INFORMATION TEAM— Project Guide

Each week your team will contribute to this chart, which can be set up as a bulletin board.

Week	Where they are	What they are doing	Special events
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Added Challenge: At the end of the trip, decide which week was most challenging.

NAVIGATION AND WEATHER TEAM – Project Guide 1

Your team is responsible for two charts. You can work as a team or divide into two groups, one for each chart. Try to find connections between the weather and the location of the boat.

Location Report: Use the chart below to record the location of the boat, predict its location one week from the current report, and calculate the average weekly distance traveled.

Date	Latitude/Longitude	Distance/Direction to Nearest Land	Distance Sailed	Average Weekly Distance
Prediction for Week 1				
Week 1				
Prediction for Week 2				
Week 2				
Prediction for Week 3				
Week 3				
Prediction for Week 4				
Week 4				
Prediction for Week 5				
Week 5				
Prediction for Week 6				
Week 6				
Prediction for Week 7				
Week 7				
Prediction for Week 8				
Week 8				
Prediction for Week 9				
Week 9				
Prediction for Week 10				
Week 10				

Added challenge: Your predictions should get better each week as you learn more about the challenge. What kinds of things do you learn that help you make better predictions about the location of the boat? Calculate the average speed *Great American II* must travel to break *Northern Light's* record of 76 days, six hours. The total distance is 15,000 miles.

NAVIGATION AND WEATHER TEAM – Project Guide 2

Weather Report: You are the weather forecasting bureau. As the trip proceeds, complete this chart and figure out how the weather has affected the team’s progress. You can base your predictions on climate information available in an atlas. Each week compare your predictions to actual weather conditions reported in the Ship’s Log in the Newspaper Update series.

Date	Air Temperature	Sea Temperature	Wind Speed/ Direction	Rainfall
Prediction				
Week 1				
Prediction				
Week 2				
Prediction				
Week 3				
Prediction				
Week 4				
Prediction				
Week 5				
Prediction				
Week 6				
Prediction				
Week 7				
Prediction				
Week 8				
Prediction				
Week 9				
Prediction				
Week 10				

Added challenge: Which week was the best for weather, and why? Which week was the worst for weather, and why? Research and report on these topics: magnetic vs. true north; ocean currents; trade winds; barometric pressure; high and low pressure systems; icebergs; and hurricanes.

GEOGRAPHY & ENVIRONMENT TEAM—Project Guide

Your team is challenged to describe the places on land—and the environmental issues facing these regions—that are at the latitude and near the longitude of *Great American II*.

Week	Nearest Land Area	Description of the Land Area	Environmental Issues of the Region
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Added Challenge: Make an atlas of the land near the trip route. Add as many facts as you can find about each place. Research Cape Horn and find out who has traveled there successfully—and unsuccessfully—and the challenges they faced. Find out about the major environmental challenges facing the oceans and countries that *Great American II* passes, and report your findings to the class.

HISTORY TEAM—Project Guide

Organize your work so that you bring research to class that helps explain the histories of the countries along the route as *Great American II* reaches these parts of the world. Your research can include using world history textbooks, encyclopedias, and books about the countries.

1. Start by making a summary of the trips of sailors who have challenged the ocean. Include information on the following:
 - KON-TIKI
 - Vasco da Gama
 - Magellan
 - HMS *Bounty*
 - Darwin's HMS *Beagle*
 - Captain James Cook
2. Find out about the history of commerce and major trade routes in the regions *Great American II* passes.
3. For each country along the way, make a "history connections" digest. Include information about individuals who have met challenges in that country. Follow this outline in your reports:
 - Country
 - Challenge an Individual Faced There
 - How that Person Met the Challenge
 - Connections to Ocean Challenge
 - How does that challenge compare to this one?
 - What advice might that historic person have for the sailors on *Great American II*?

Added Challenge:

How is traveling in space like traveling on the *Great American II*? What lessons might the sailors on *Great American II* have for future travelers in outer space?

Use the names of places along *Great American II*'s route (like the Strait of Magellan) to find out about the history of individuals who have traveled and explored in these areas.

NUTRITION AND HEALTH TEAM—Project Guide

Your challenge is to learn about and report on the food, water, medical and sleep needs of *Great American II's* crew.

1. Prepare For Your Job

Interview a coach, athlete, nurse, doctor, or nutritionist and find out answers to the following questions:

- a. How many calories does a person need to work hard 12 hours a day?
- b. What foods are high in energy?
- c. How much water does an adult under a lot of physical strain need each day?
- d. Rich Wilson has had severe asthma since childhood. What is asthma? What special medical needs or concerns does a person with asthma have?
- e. What kinds of medical supplies should people take on an eleven-week, nonstop ocean voyage by sailboat?
- f. How many hours of sleep should each crewmember get during a 24-hour period? Since Rich and Bill will be on alternating shifts, or “watches”, how long should their watches be to get enough consecutive hours of sleep?
- g. What other advice does the medical or health expert have for two sailors on such a trip?

2. Recommend Foods

Make a list of the kinds of foods that Rich and Bill should take along. Remember there is no refrigerator on the boat.

3. Food Consumption

Design a balanced and practical menu that will provide the necessary calories and nutrients for Rich and Bill during a 24-hour period.

4. Water Consumption

Rich and Bill get fresh drinking water from the ocean salt water by using a machine called a desalinator. Figure out how much drinking water Rich and Bill will have to make each day.

5. Pack the Medicine Chest:

Make a list of the supplies that Rich and Bill should be sure to pack to provide for their health and medical needs.

Added Challenge

Find out how the crew's nutritional and calorie needs will change as they travel through different climates.

Make a calorie chart of foods you think the Ocean Challenge crew should eat. Then check the other nutritional facts about those foods, such as how much fat and how many carbohydrates are in each item.

ENERGY AND MECHANICS TEAM—Project Guide 1

There are two parts to this project team: the basic physical setup of the boat and the use of energy during the trip. You need to work on both parts as the trip proceeds.

1. The Physics of A Trimaran

What is a trimaran and why is it built the way it is? To answer these questions, you need a picture of such a boat, a list of its parts, and an understanding of sailing.

- a. To find out about sailboats, there are several options:
 - Call a boat dealer if you have one in your area. If you don't have a boat dealer, then contact a sailboat manufacturer. How will you find such a business? Use the yellow pages from a seaport such as San Francisco or Boston. It may take a few weeks, but you should have a collection of information about sailboats.
 - Get a model of a sailboat from a hobby store and put it together. You will get to know the parts of a sailboat first-hand.
 - Interview someone in your family or a friend's family who has sailed.
- b. To report your information, make a "key" to a picture of a trimaran. For each part, tell how it works and why it is important to the boat.
- c. Find out and list the advantages and disadvantages of sailing monohulls (boats with one hull) and multihulls (boats like a trimaran with more than one hull).
- d. Make a list of tools to be included in a toolbox to keep the sailboat in good repair. Remember, there is a limit on space and weight on board.

2. Energy Advisors

It is your job to give the team advice on their use of electricity. First, do some research. Contact your local electric company and get information about the use of electrical power for equipment.

- a. Make a list of the equipment on the boat that will require electricity.
- b. Make a general list of suggestions of ways the Ocean Challenge team can conserve electricity.
- c. Make a list of ways the boat gets energy (solar, wind, diesel generator) and then find out more about these three ways of getting energy.

ENERGY AND MECHANICS TEAM— Project Guide 2

Energy Log: Keep an energy log. Note any problems that cause the team to use extra energy.

Week	Added Energy Use	How Serious is the Extra Use?	Your Advice to the Team About this Situation
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Added Challenge: Set up an experiment in the classroom to determine how long different voltage batteries will power a light, and graph the results.

Make an energy generation and consumption table for *Great American II* and for your family's home.

COMMUNICATIONS TEAM – Project Guide

Your team has two jobs. The first is to find out about the radio and satellite communications used on *Great American II*. Your second responsibility is to keep Rich and Bill up to date on what is going on in the world.

1. Research and report to the class on radio and satellite communications. Explain how radio and satellite communications work and what the advantages of each are. Include the frequencies used and compare them with television and FM radio frequencies.
2. Create a weekly news digest to send to the crew. Your job is challenging because you can only send short messages that are like telegrams. To practice this skill, read the news digest or world briefs section of the newspaper.

Use this outline to gather the news for the crew and to write it:

- a. What is your “beat”—the part of the news you will follow. Each member of the Communications Team should choose a different kind of news to report.

TEAM MEMBER	NEWS YOU WILL REPORT

- b. What is the news? Read the newspaper and choose the three most important stories in your news area. Then write a digest — a report that tells each story in *20 words or less*.

NEWS TOPIC:

MY TWENTY WORDS:

- c. Check your story with another member of the team. Be sure that you have told the story clearly.

Added Challenge: Translate your news into pictograms or another language.

TEAMWORK TEAM—Project Guide

Your team will write a report on the teamwork involved in Ocean Challenge. You will need to find clues from the articles written by Rich and Bill in the newspaper Update Series and from *Racing a Ghost Ship!* on the sitesALIVE! website.

1. From the biographies of Rich and Bill, what in their backgrounds has prepared them to work as a team?

2. Keep track of the teamwork challenges along the way:
 - a. How do they decide how to share the work?
 - b. How do they make decisions?
 - c. What do they do when one of them makes a mistake?
 - d. What else do you notice about their working as partners?

Added Challenge: Based on what you learned from the two Ocean Challenge sailors, make a guidebook for working as a team.

BOOK AND MOVIE TEAM – Project Guide 1

Your challenge is to write a story of the trip. There will be two uses for the story: one for a book you outline and write and one for a movie or play based on that book. You may be assigned to write about one week, a few weeks, or the whole trip.

WRITING THE BOOK

1. Set up your team with three jobs. Two or more students can work on each of the three jobs:
 - a. information reporter
 - b. writer
 - c. editor

2. Start with this important step: outline the story.

3. Decide if you will use any special features. For example, you may decide to include maps and charts.

4. Research how reporters tell stories. Read at least three newspaper articles about events. Discuss these questions and make a list of “tips for good writers” based on what you learn from reading and talking about news stories.
 - a. How does the writer keep the reader interested?
 - b. How does the writer work facts into the story?
 - c. How does the writer begin the story?
 - d. How does the writer end the story?
 - e. What else do you notice about the way the story is written?

5. Write a story of the voyage using your list of “tips for good writers” as a guide. You can divide the writing into two chapters, with each team member responsible for one chapter.

BOOK AND MOVIE TEAM – Project Guide 2

PLANNING THE MOVIE

Now that you have prepared the book, plan a movie based on the story of Ocean Challenge.

1. Write the “scenario”—a list of the scenes in the film. Use this outline to guide your work:

situation: problem or event	actions
persons in this scene:	

2. **Music:** What music would you include for this scene?
3. **Actors:** Who should play these persons? (You can “cast” men or women for the roles.)
4. **Dialogue:** Write the words that each person in this situation says.

Added Challenge: Make a video report on Ocean Challenge using the music and dramatic scenes you have planned.

Following is a letter written in 1993 to the parents of students participating in *Racing a Ghost Ship!*. Please note that all materials from the 1993 program are available on the sitesALIVE! website at www.sitesalive.com. The 900 telephone number mentioned in the letter is no longer operating.

Letter to Parents—January 1993

Dear Parent:

Your child is one of nearly 250,000 students participating in a dynamic education program that links learning to a live American adventure: Ocean Challenge.

This program really began on Thanksgiving Day, 1990. My crew and I were aboard the first *Great American*, attempting to break the sailing record from San Francisco to Boston set in 1853 by the famous clipper ship *Northern Light*. We were just off Cape Horn, feared for its storms, when the weather worsened and built up to hurricane winds and mountainous 50-foot seas. To our horror, *Great American* was capsized. An hour later, an even bigger wave violently turned our trimaran back upright— an unprecedented event in sailing history.

With unbelievable luck, our distress signal was heard and answered by an 800-foot container ship en route from New Zealand to Holland. Her Scottish captain and New Zealand crew maneuvered this huge ship with great difficulty and extraordinary skill to our position and managed to take us aboard. Now, your child will follow Bill Biewenga and me for the next eleven weeks as we tackle the record again aboard the 53-foot trimaran *Great American II*. At school, your child will receive a weekly copy of your local newspaper, which will carry a special Update Series on Ocean Challenge. Your child will be encouraged to work with you on the activities in the Update Series and on projects related to our voyage. By working with your child on these activities, you will reinforce the learning that is taking place in the classroom.

Periodically, you may want to call 1-900-820-BOAT with your child to hear one of our daily reports radioed directly from *Great American II*. The call costs 95¢ per minute and proceeds will help support *Great American II*, the Ocean Challenge education program, and the American Lung Association (I've had severe asthma since childhood). If you have access to a computer with a modem, additional coverage of the voyage and a daily log entry of data from *Great American II* is available on the PRODIGY! service ([JUMPSM]: ocean challenge).

By sharing in the excitement of an ongoing adventure far offshore, your child will learn about a variety of subjects, develop new skills and begin to see how to reach for his or her own dreams. And you will add to your child's enthusiasm for learning by taking an active interest in the Ocean Challenge program.

Wish us luck!
Sincerely,

Rich Wilson
Skipper

Racing a Ghost Ship! Log

Access the Audio Reports (daily), Weekly Reports, Captain's Log, Ship's Log, Q & A, and the Photo Gallery in *Racing a Ghost Ship!* on www.sitesalive.com. Use this information to fill in the chart below.

Date: _____

Location of the Boat: _____

Crewmember reporting (circle one): Rich Bill

Weather affecting them: _____

Problems or concerns Rich and Bill are facing:

Changes in plans they have made: _____

Predictions they have about what will happen next: _____

Wildlife sightings and nature observations: _____

How Rich and Bill are feeling about the trip at this point. Pay attention to their tone to answer this:

Added Challenge: What questions do you have based on, the information from the boat? Find answers by doing research.

OCEAN CHALLENGE FACT BANK

Set up a Research Note Area either on a computer disk or an index card file box, and have each team contribute facts relating to the Ocean Challenge topics they research.

The samples included below are just examples of facts your students can collect. These facts are listed in alphabetical order, but your students should organize them topically according to the topics they work on as part of the project. Some facts will be relevant to more than one team. As your students work on the Fact Bank, they will be learning research and classification skills as well as expanding their knowledge about these topics. You can start this research project by asking students to figure out how each of the following words is part of Ocean Challenge.

Fact to Fact/Word to Word: One way to add to the Fact Bank is to assign one word to each student and ask them to find a related term and add information about that term to the Fact Bank. For example, if a student is given *ampere*, he or she might pick *battery*; for *boom*, *mast*; for *calorie*, *protein*; etc. This project can continue daily or weekly.

SAMPLE FACTS:

ampere – A standard unit for measuring an electric current. It is named after the 19th century French physicist A. M. Ampere.

boom – There are several definitions of this term. In sailing, it means a long pole that goes from the bottom of the mast to hold a sail out.

calorie – A calorie is the amount of heat that is needed to raise a gram of water one degree Celsius. People use this measure to figure out how much energy is produced by food when it is processed by the digestive system.

Cape Horn – This is the name of the land that is the farthest south in South America. The weather here is very challenging.

Ferdinand Magellan – In 1519, Magellan left Spain with five ships to find a westward passage to Asia. In 1520 he found a way through what later people called the Strait of Magellan.

REM Sleep – REM stands for “rapid eye movement” and REM sleep is an important stage of sleep connected with dreaming when the sleeper’s eyeballs move in a rapid, jerky way.

spinnaker – This is a large triangular sail. It has a boom called a “spinnaker pole” that holds the sail out to one side to catch the wind.

BIOGRAPHIES OF THE CREW

RICHARD WILSON

Rich grew up in Boston. He graduated from Harvard College, and has a graduate degree in science from M.I.T. and a Master of Business Administration from Harvard Business School. Rich has worked as a teacher in Boston, a defense analyst in Washington, D. C., and as a technical consultant on power/desalination plants in Saudi Arabia. He was also a successful investor in six entertainment companies in Massachusetts.

Rich served six years on the Board of Trustees of Sea Education Association and The School for Field Studies, both hands-on college-level science programs. He is currently on the Board of the American Lung Association of Boston and is an Overseer of the Boston Museum of Science.

In 1980, Rich became the youngest Overall Winner of the prestigious Newport to Bermuda Race, skippering *Holger Danske*. In 1988 he won his class sailing the 35-foot trimaran *Curtana* in the Carlsberg Single-Handed Transatlantic Race. *Racing a Ghost Ship!* emerged from Rich's experience in that race.

An ocean voyage requires experience and preparation. Rich jogs, swims, lifts weights and runs up and down the seats in Harvard Stadium to prepare for the physical demands at sea. Over the years, he has also kept in shape by training for, and running, four Boston Marathons.

To work effectively on the *Great American II* team, Rich draws on a variety of experiences, including his work on the boards of several educational organizations, playing on a competitive softball team for 14 years, and racing sailboats. Rich believes a successful team is made up of members that contribute special talents as well as solid general abilities.

BILL BIEWENGA

Bill was born and raised in Chicago. After enlisting in the Marine Corps, Bill volunteered for duty in Vietnam. Upon his return, he received a Bachelor's Degree in History from North Central College in Illinois.

After working as a general contractor, Bill started a concrete business with his brother. In three years Biewenga Brothers Concrete Company grew into a multi-million dollar venture, but struggled during the recession in the late '70s and early '80s. Bill rebuilt the company, then left to pursue a sailing career.

Bill has sailed over 200,000 sea miles, including three Whitbread Around-the-World Races and 14 transatlantic voyages. He has worked as a weather-router, the person who sends advice on the weather to boats racing at sea. He also brings a published skill in both writing and photography to *Great American II*.

On shore he trains for ocean voyages by running three to five miles a day, five days a week. He also works out in a weight room at least three days a week, concentrating on cardiovascular and upper body exercise.

Bill has worked on several teams. His efforts on a high school wrestling team, service as a Corporal in the Marine Corps, work as a contractor, and experience with countless crews at sea has prepared him for his role on the *Great American II* team.

“USING THE NEWSPAPER” TOPIC SUMMARY

This is an overview of the “Using the Newspaper” section of each lesson plan. You may wish to collect newspaper clippings related to these topics to supplement those available in the newspapers supplied to your class each week.

WEEK	TOPIC
1	employment qualifications
2	hazards that might affect the voyage
3	examples of decision-making
4	editorials
5	individuals making commitments despite challenges
6	individuals or organizations at a turning point
7	decisions made during sports events that led to losses
8	general news
9	examples of ways to conserve resources
10	narratives
11	people who have overcome challenges

Annotated Bibliography

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