Phoebe's Humpback Whale Adventure

Classroom Film Companion

High School Version

(Grades 9-12)

A film by Tom Fitz

SchoolyardFilms.org
Environmental Films For Schools... For FREE!

Content developed by Cypress Curriculum Services, LLC
Cover photo by Marty Wolff
Film Overview

*Phoebe's Humpback Whale Adventure* follows high school student, Phoebe, in her quest to learn about humpback whales. She teams up with scientists and underwater cameramen who study the whales in Hawaii, and learns first-hand what it takes to work on the high seas with these magnificent animals. In Lahaina, she observes the booming whale watching industry then visits a local high school where students are actively involved in the humpback studies.

After centuries of overexploitation, the humpback whale is recovering from the brink of extinction. Follow along with Phoebe as she learns directly from whale researchers about recent discoveries concerning whale behavior such as breaching and whale songs.

Pertinent Issues

Screening of *Phoebe's Humpback Whale Adventure* can be used to generate interest in a variety of topics. Consider inviting guest speakers on these topics to your classroom for presentations or discussion sessions.

- Marine mammal protection
- Animal behavior
- Ecotourism
- Careers in Marine Biology
- Social action

Individuals Featured in this Film

Rachel Cartwright, Ph.D. is a whale researcher at California State University and founder of the Keiki Kohola Project.

Flip Nicklin is an underwater photographer and co-founder of Whale Trust Maui.

Jim Darling, Ph.D. is a whale researcher and co-founder of Whale Trust Maui.

Jason Sturgis is an underwater cameraman and Advisor to Whale Trust Maui.

Meagan Jones is a whale researcher and Executive Director of Whale Trust Maui.

Haley Robb is a high school student at Lahainaluna High School.

Phoebe Fitz is a film presenter, narrator, and high school student.

Links

- The Keiki Kohola Project • www.caringforcalves.org
- The Whale Trust Maui • www.whaletrust.org
- Schoolyard Films • www.schoolyardfilms.org

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About the Filmmaker

Tom Fitz is an Emmy Award winning cameraman whose work has been broadcast by PBS, BBC, National Geographic, Discovery, ABC, NHK, Tokyo Broadcasting, and others. His programs have also been displayed in museums and other non-broadcast venues. Tom has over 20 years of experience in natural history camerawork and his projects have taken him all over the world. In 2004, Tom began producing his own films too, earning numerous awards. He currently divides his time between freelancing with the BBC’s Natural History Unit and overseeing the daily efforts at Schoolyard Films. Inc.

About Schoolyard Films

Our Mission at Schoolyard Films is to educate students in K-12 schools about the natural world and the challenges it faces by providing schools with high quality natural history programming and study guides that reinforce state and national science standards - all FREE of charge.

Our Vision is to be the resource teachers turn to for engaging films that bring the natural world into the classroom. Through Schoolyard Films we will educate and inspire, while promoting environmental awareness and good stewardship of the planet.

Schoolyard Films, Inc. is a non-profit 501(c)3 charity. Tax deductible donations pay for our work. With little overhead costs, the vast majority of our funding goes straight to our film production budgets. This enables us to make the best quality programs we can, and deliver them for free via the internet. We also believe in public outreach, and offer personal presentations to many schools in the state of Florida.

Schoolyard Films are DESIGNED to work well in a classroom environment. They are short, but feature and content rich. They work well within the timeframe of a single classroom session, giving the instructor time to conduct the regular and necessary "business" of their class each day AND allow for a full viewing of the Schoolyard Film and then also to include time for study guide activities and meaningful classroom discussions about the topics presented in the films. These are not just "Rainy-day" or substitute supplements, but fully realized lessons that fit with your programs and fulfill State and National required Standards.
Dear Educators
This supplemental guide to the film, *Phoebe's Humpback Whale Adventure*, provides background information on the humpback whale, discussion and writing prompts, and a film-making activity. The content is intended to cover a broad range of curriculum areas but is primarily focused on visual arts, language arts, and environmental science. The guide can be used in its entirety or in sections to meet your unique classroom needs.

The film discussion section includes background information on humpback whales, suggested resources for further reading, and discussion questions and writing prompts to explore the issues presented in the film. The discussion prompts are aligned with many of the standards and assessment content areas found in the Common Core, Florida Sunshine State, and Hawaii Content and Performance Standards—particularly language arts, visual arts, and life science.

The environmental short film activity is presented as a complete lesson plan. It can be used in the visual arts classroom or as enrichment for honors, gifted or advanced placement science curriculum.

Additional Resources

American Cetacean Society
https://acsonline.org/factsheets/humpback-whale/

Defenders of Wildlife
http://www.defenders.org/whales/basic-facts

Keiki Kohola Project
http://www.caringforcalves.org/

NOAA Office of Protected Resources

U.S. Fish & Wildlife Service
http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A02Q

Whale Trust Maui
http://www.waletrust.org/

Whalesong Project
http://www.whalesong.net/

Wildlife Conservation Society
# Common Core English Language Arts & Literacy Correlations

<table>
<thead>
<tr>
<th>ITEM</th>
<th>9-10</th>
<th>11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Film Discussion Questions</strong></td>
<td><strong>Speaking &amp; Listening</strong></td>
<td><strong>Language</strong></td>
</tr>
<tr>
<td>CCSS.ELA-LITERACY.SL. 9-10.1</td>
<td>CCSS.ELA-LITERACY.SL. 11-12.1</td>
<td>CCSS.ELA-LITERACY.SL. 11-12.3</td>
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<tr>
<td>CCSS.ELA-LITERACY.L. 9-10.1</td>
<td>CCSS.ELA-LITERACY.L. 11-12.1</td>
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<tr>
<td><strong>Reading Unit Comprehension Questions</strong></td>
<td><strong>Reading: Informational Text</strong></td>
<td><strong>Language</strong></td>
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<td>CCSS.ELA-LITERACY.RI. 9-10.1</td>
<td>CCSS.ELA-LITERACY.RI. 11-12.1</td>
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<td><strong>Writing</strong></td>
<td><strong>Language</strong></td>
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<td>CCSS.ELA-LITERACY.W. 11-12.1</td>
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<td><strong>Writing</strong></td>
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# Florida Next Generation
## Sunshine State Standard Correlations

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Florida Science, Social Studies, and Visual Arts Standards</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><strong>9-12</strong></td>
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<td><strong>Science</strong></td>
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<td><strong>Science</strong></td>
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Discussion Questions

Use the following questions either to stimulate classroom discussion or as individual writing prompts. Either way, the goal is to foster discussion on the level of synthesis and analysis of concepts and topics.

Questions before Watching the Film

1. The humpback whale was nearly hunted to extinction. How does it make you feel if you imagine the humpback whale extinct?
2. How important is public opinion in the advancement of wildlife protection measures?
3. What role does science play in the protection and management of whale populations?
4. Should societies that historically hunted whales for meat be allowed to continue this practice?

Questions after Watching the Film

1. In what ways did technology determine the history of humpback whales between the early 1800's and today? In what ways did technology harm or benefit whales?
2. What are the human benefits of protecting whales? Does there need to be a benefit to society?
3. Phoebe states that through research, we gain insight into other species, and through this insight comes protection. Explain briefly what this means to you.
4. Why do you think Phoebe says that passion is at the heart of every research project?
5. Why has ecotourism, such as whale watching, gained so much popularity in recent years?
6. Dr. Rachel Cartwright said that since calves expend so much energy breaching, there must be a reason they do it. What did she mean by this?
7. What did Dr. Jim Darling learn about whale songs?
8. The film featured two cameramen, Flip Nicklin and Jason Sturgis, who are passionate about filming humpback whales. How does their work help scientists better understand whale behavior and biology?
9. Can films like Phoebe’s Humpback Whale Adventure play a role in whale protection? If so, how?
10. Some argue that the whale watching tours disturb whales too often. Others think the tours are vital to whale conservation efforts. What do you think? Do whale watching excursions benefit whales?
11. What is something you can do, as an individual, to help protect whales?
The Interwoven History of Whales, Science, and Civilization

For thousands of years, coastal dwelling people hunted whales for meat and other resources. Evidence suggests that the low level harvests by prehistoric peoples had little to no impact on whale populations. But rapid advances in science and technology during the Scientific Revolution (1300’s to 1600’s) and Industrial Revolution (1700’s to 1800’s) led to population growth, increased demand for resources, and improved tools to claim needed resources. The expanding market for whale meat and blubber for lamp oil, food, lubricants for industrial machinery, and additives for cosmetics led to the creation and rapid growth of an international whaling industry. The invention of the explosive harpoon and improved shipping technology helped the industry meet the ever growing market for whale products. By the mid-20th Century, many whale species, including the humpback whale, were on the brink of extinction.

The development of the oil well dramatically changed the humpback whale’s perilous path towards extinction. New technologies made it much more cost effective to draw oil from the ground and convert it to kerosene for lamp oil. Demand for whale oil quickly waned as supplies of cheap kerosene climbed. By that time, it was also apparent to naturalists and some whaling industrialists that centuries of unrestrained whaling activity had depleted many whale stocks to dangerously low levels. Concerned governments worked together to find a solution that would prevent whale species extinctions and ensure a sustainable whaling industry for the long-term. An international agreement, known as the International Convention for the Regulation of Whaling, was signed in 1946. The convention was a major achievement for whale protection. The agreement established the International Whaling Commission (IWC), which carefully governs the commercial, scientific, and aboriginal subsistence whaling practices of 59 nations. By regulating whale harvesting at a global scale, many migrating whale populations are now on a path to recovery. Consider the humpback whale, which in 1960 numbered roughly 5,000 animals worldwide. The IWC implemented a moratorium all humpback whale harvesting in 1966, and today there are an estimated 100,000 humpback whales.

In order to answer fundamental questions regarding the best management strategies for whale stocks, the IWC and other organizations required basic information on whale biology, ecology, and behavior. As such, science has played an important role in the protection of whales since the establishment of the IWC. Decades of monitoring and basic research have revealed many secrets of whale migration, population structure, social dynamics. New advances in genetics have further improved our understanding of the natural history of whales. For example, new population modeling tools, which
estimate pre-whaling populations using current genetic diversity and assumed gene mutation rates, have helped the IWC establish conservation targets for imperiled species.

Decades of whale research and conservation work did not only serve to inform resource managers and policy makers. The improved understanding of whales helped build awareness among the public, and with this increased awareness came new concern for whales, other marine wildlife, and their habitats. Only two centuries ago, whales were seen by many as “monsters of the sea” whose value was limited to a human commodity. Today, many people see them as majestic, intelligent, and social creatures deserving protections. This growing public appreciation for whales is manifest by the emergence of whale watching tourism. Over the last 50 years, whale watching tourism has become a multi-billion dollar international industry, employing thousands and drawing millions of visitors annually. The rapid growth of whale watching has further increased public awareness about whales, which in turn has helped to push governments and corporations to implement sound whale conservation policies.

Science, technology, and public opinion will all play important roles in the future of Earth’s whales. The IWC and other organizations will continue to face significant challenges in whale conservation in the 21st Century. Ongoing threats to whales include noise pollution from military sonar, entanglements in fishing nets, illegal harvesting, and ship strikes. In addition, some fisheries biologists are concerned that recovering whale populations may soon impact fisheries that humans depend upon. Resource managers and policy makers will rely on scientific evidence, technological solutions, and public input to make informed decisions towards a sustainable outcome for whales, the whaling industry and other interests.

Questions

1. Which of the following best describes the central idea of the passage?
   a. The human condition cannot improve without science and technology.
   b. Developed nations should use science and technology to compensate for centuries of whale exploitation.
   c. Science and technology has played a central role in both the downfall and recovery of whale populations.
   d. Without the invention of new technologies, such as oil wells, many whale species would now be extinct.

2. Which of the following ideas from the passage is the best evidence that public perception about whales has changed dramatically in the last century?
   a. Whale watching tourism became a major industry at the end of the 20th Century.
   b. Research has increased our understanding of whales.
   c. The IWC was formed in 1942 to ensure sustainable stocks of whales.
   d. Public perception helps direct public policy on whaling.
3. Consider the following statement from the text. "By regulating whale harvesting at a global scale, many migrating whale populations are on a path to recovery." Why is it important to regulate whaling on a global scale with the cooperation of many nations?
   a. By rotating harvests from different populations around the globe, populations recover faster.
   b. Protection is required for many different species of whales found in different oceans.
   c. Large scale management of whale populations is cost-effective.
   d. Without multi-national agreement, migrating whales could be vulnerable when crossing long expanses of international waters.

4. According to the passage, how did oil drilling impact the whaling industry?
   a. Oil drilling increased the price of whale oil and market shares dropped.
   b. Oil drilling was promoted by industry leaders because whale stocks were depleted.
   c. Demand for whale oil decreased because kerosene was a superior product.
   d. Demand for whale oil decreased because kerosene was less expensive to produce.

5. What is the meaning of the word *manifest* as used in the fourth paragraph?
   a. to argue for
   b. to show plainly
   c. to hide from
   d. to make unnecessary

What Do You Think?

Some countries believe that the ban on whaling should be lifted. They argue that conservation efforts have done enough to help whale populations recover and whale harvesting should be gradually reinstated. What is your opinion on whether whaling should be allowed? Write an essay (minimum 500 words) stating your opinion and supporting it with convincing reasons. Fully explain your reasons.
Teacher's Lesson Plan: Environmental Film Documentary

**Background:** In this lesson, students learn about short films and the nature documentary genre. Students will work in teams to create their own short documentary. The intended audience is primarily visual and language arts teachers, although this activity would make an excellent cross curricular project with environmental science teachers. Using *Phoebe's Humpback Whale Adventure* and supporting instructional content as an example, students will develop their own short nature film to communicate an environmental message. The lesson and activity will teach to standards for visual arts, language arts, and the life sciences.

**Subject(s):** Visual Arts, English Language Arts, Science

**Grade Level(s):** 9-12

**Intended Audience:** Primarily visual arts and language arts classrooms, but may also be used as enrichment in honors, gifted, or advanced placement science classes

**Suggested Technology:** Computer for presenter, computers for students, internet connection, LCD projector, video cameras, video editing software

**Instructional Time:** 2-3 weeks total project time, includes film screening, discussion, and lecture

**Needed:** Copy of film, *Phoebe's Humpback Whale Adventure*, class set of Classroom Film Companion worksheets, projector or large monitor to display film, video camera (one for each team), computer(s) with video editing software

**Learning Objectives:** What should students know and be able to do as a result of this lesson?

Through research, collaboration, and team work, students will create a short environmental film for the purpose of informing, persuading, educating, and/or defending a perspective. Student teams will choose a film topic, articulate the film's purpose, develop a film script and storyboard, film, and conduct post-production editing, and share their work with the class or other audience.

**Guiding Questions:** What are the guiding questions for this lesson?

- What are the defining characteristics of documentaries?
- What does a filmmaker typically hope to accomplish with a nature documentary?
- How are the contributions of nature documentary film makers important to society and environmental protection?
- What techniques can the film maker use to persuade the viewer?
- What is the difference between a film's topic, focus, and angle?
- What is a storyboard and how does it help the film maker during film production?
- What types of visuals or effects will help engage the viewer?

**Prior Knowledge:** What prior knowledge should students have for this lesson?

- Students should be able to:
  - utilize the internet and text resources to effectively conduct research on a given topic.
  - take notes from resources and paraphrase.
  - summarize research findings.
  - work together independently, with a partner, and in a cooperative, small groups.
  - report on a topic or text, speaking clearly at an understandable pace.
  - use technology.
- Students should have grade-level knowledge of environmental concepts related to their chosen topic.
• Students should know or be able to practice the basics of video camera recording including use of a tripod and uploading video to computers.

Activity Overview
  1. **Introductory Lesson**: Teacher begins with an introductory presentation on the nature documentary film, being sure to cover concepts and production phases presented in the student instructions handout (15 minutes).
  2. **Watch Film**: Teacher presents *Phoebe's Humpback Whale Adventure* (15 minutes).
  3. **Discuss Film**: Teacher leads class discussion about the film using prompts from this guide (10 minutes). Note: If this project is part of a cross-curricular activity focusing both on science and visual arts, the teacher(s) may wish to first ask questions related to life science concepts, then lead a separate discussion related to Visual Arts.
  4. **Team Film Project**: Teacher passes out the *Environmental Film Project Student Instructions* and supplemental forms, and then reviews the project with the class. Divide the class into cooperative groups (3 to 5 students per team is optimal), and distribute project planning worksheets. Review contents of packet and steps to complete the project (2-3 weeks).
  5. **Classroom Film Festival**: Teacher hosts a classroom film festival as time allows. Plan to show all films on one day. If time allows, lead a class discussion after each film. Don't forget the popcorn!
In this activity, your film production team will create a short documentary film. The film will explore factual stories and issues related to an environment topic chosen by your team. Your challenge is to create an engaging story through the medium of film that educates, enlightens, and challenges viewers.

Each phase of film production involves careful planning and team collaboration. It is important that your team work together with a cooperative spirit. While planning and preparation is a key element of successful film production, do not avoid spontaneity. Sometimes unplanned interview questions or filmed events create the best documentary moments.

### PRE-PRODUCTION PHASE

**FIRST STEPS**

Your team will select three choices for a film topic from the list provided on the *Film Focus Research Worksheet*. You may propose your own film topic, but remember that the topic should be an environmental issue that your team can realistically film (i.e., it would be impractical to do a documentary on deep sea creatures.). Your team will also indicate chosen team member roles and responsibilities on the planning form. **All team members will participate as either researchers, script writers, or producers.** The team will need to appoint the following personnel:

- Narrator
- Videographer
- Video Assistant
- Editor
- Audio Engineer (if audio recording equipment is used)
Film production roles may be divided up among team members based on interests and number of team members. Your team should also create a production team name (e.g., Schoolyard Films).

Now get organized! Start a team project binder to keep all worksheets, notes, and other documents.

FOCUS

Once you have a film topic, hold a team brainstorming session to determine your film's **focus**. Remember, the film focus is a more specific form of the film topic. For example, if your topic is about sea turtle conservation, your film focus might be on a local environmental group's efforts to protect sea turtle nesting habitat. Work as a team and consider numerous ideas for your film focus. The internet and library are great resources for generating ideas. For example, conducting a news search on your topic and your town may reveal current local issues/events related to your topic.

Identify research **subtopics** related to your film focus. There should be at least one research subtopic for each team member. Each student should complete the included **Film Focus Research Worksheet**. Consider the following when gathering information:

- gather basic facts on the subtopic
- look for interesting angles
- look for local experts as candidates for interviews
- look for historical documents or photos (These may be used as images in the film.)

Now your team should regroup and go over research findings. If you feel more information is needed, make a list of outstanding items to research.

FORM THE STORY

With your film focus defined and topic research completed, your team can now begin organizing the film scenes. First, decide on the priority topics for the film and write them down. Then brainstorm ideas for film scenes. Will there be interviews? Where can you film your subject(s)? What are the most important things to capture on film to tell the story? Write down each scene idea on a separate piece of paper (sticky notes work well). Remember that this is a short film. Your final film length should not exceed 10 minutes, so it is important to be very specific and concise.

Now prioritize your film scenes, making sure that all selected scenes are important to the story. Use the provided **Storyboard Template** to organize your film scenes into a sequence that tells the story in an engaging way. Think of the storyboard as your "shooting script." Use it to keep track of ideas you have for each scene. Think about the film sequence in terms of the beginning, middle, and end. The following table provides things to consider about the structure of your film's story sequence.
BEGINNING

Give the viewer an idea of what is coming in the film.
Set the film's tone and mood.
Introduce the main assertion or thesis of the film. This is the idea that the entire film is built around.
Make the viewer curious about what will happen.

MIDDLE

Sequence the scenes in a logical way.
Remain brief and concise. Do not let scenes go on too long or the viewer will lose interest.
Consider tempo. Most good stories ramp up the tempo to some dramatic point then slow again to allow the viewer to reflect.
Keep building the intensity and scope of the story.

END

Conclude the story.
Develop a dramatic climax to the story.
Repeat the main assertion of the film.
Use either an open or closed end. Closed ends answer any open questions created by the film, whereas open ends leave questions unanswered for the viewer to consider.

PRODUCTION PHASE

PLAN THE SHOOT

Scout for good film locations. At each location, identify the best places to shoot scenes. You may want to collect some preliminary video footage during your scouting. The footage can be reviewed to identify video or sound issues (e.g., poor light, echoes).

Important: Create list of desired shots and check them off as the team films. This step helps ensure all desired footage is collected. The videographers should plan to shoot wide, medium, and tight shots in all scenes.

ACTION

Conduct interviews and film scenes. If you have access to more than one video camera, film your subjects from more than one angle. This is especially useful when filming interviews. Using different camera angles on the person being interviewed adds visual interest.

Make sure to gather plenty of b-roll, supplemental footage to be integrated with the main footage. B-roll can be used to add meaning to a sequence or to replace unwanted parts of the main footage.

Audio engineers always record a continuous track in professional film productions. This is not required for this project, but is encouraged if sound recording equipment is available. An alternative approach is to have a separate video camera dedicated to capturing a continuous audio track on the set.

Gather photos and documents you want to include as still in the film. There are a number of excellent resources for your research. Your public library may keep photo and document archives. The US Government
Reference Center (www.usa.gov) maintains a large database of public domain photos and images. Please be aware that photos, images, music, and other creative media may be protected by license or copyright. Carefully read disclaimers from each source before using the content.

**POST-PRODUCTION PHASE**

**EVALUATE**

The team should now review the film and create a log of the best, most useful film segments. The log should include a description of the segment and the time on the tape (e.g., Director Interview, Tape 1, Time 10:32 through 11:14). Revise the film storyboard to reflect any changes after the filming phase. Add information from your film log to the storyboard to organize the film segments. Upload your selected film segments to a computer for editing. **Tip:** Name each video segment so the team recognizes the content of each segment.

**EDIT AND PREPARE FINAL SCRIPT**

Now begin piecing together film using uploaded footage, still images, audio, etc. There are a number of video production applications you may use. Your teacher may already have software. Free home movie editing software, such as iMovie® for Mac or Windows Movie Maker®, are appropriate for this activity.

**Important:** Remember to use the story board as a guide. Think brevity and clarity. If a scene was fun to shoot, but doesn't add to the story, don't use it.

Prepare a final script of your film. The script will be a refined version of your storyboard and will include descriptions of visuals, text of recorded speech (e.g. interviews), and the exact text of the narrative voiceover.

Add any desired video effects, music, and other recorded sound. **IMPORTANT:** Your film is intended for classroom use only, so most copyright protections on non-original material (music, photos collected from the internet) are not enforced. If the film is to be circulated to a wider audience outside the classroom, it is imperative to understand your obligation to secure permissions for **ALL** non-original content of your film. For more information on this important issue visit [http://www.copyright.gov/circs/m10.pdf](http://www.copyright.gov/circs/m10.pdf)

Add a title page and film credits. Remember to thank all who assisted. Give all team members credit as Producers and Writers.

The team should now review the completed film and address any remaining editing corrections.

**IT’S A WRAP!**

Save the project according to teacher instructions.

Prepare for the film festival! Don't forget the popcorn!
**Film Focus Research Worksheet**

Name:___________________________________________ Date:______________________

Film Team Name:__________________________________ Film Topic:_________________________________________________

**Instructions:** Working independently, conduct library and internet research on your film team's chosen topic. Through your research, identify three film focus ideas. Write statements about what you find interesting or important about each focus idea. List all information sources and include enough detail so you can locate the information source later.

<table>
<thead>
<tr>
<th>Film Focus Ideas</th>
<th>What's interesting or important about this film focus?</th>
<th>Information Sources</th>
</tr>
</thead>
</table>
| Example: Profile on founder of local sea turtle rescue facility. | • Eleanor Fletcher, a realtor considering retirement, became fascinated with sea turtles and other sea life.  
• She began teaching children about sea turtles on her porch.  
• She campaigned against bright lights near the beach.  
• Her porch classroom eventually grew into a museum and state-of-the-art sea turtle rescue facility. | 1. Palm Beach Post, Andrew Marra, March 6 2009  
2. Loggerhead Marinelife Center website  
www.marinelife.org |

1. |
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Environmental Short Film Storyboard

Use this storyboard to plan your film production and organize your documentary sequence. Make simple sketches for each shot to help visualize the scene. Then write a brief description of the shot. Explain what happens, describe the camera shots, and include details on lighting or audio. Use additional sheets as necessary.

<table>
<thead>
<tr>
<th>Shot #</th>
<th>Time</th>
<th>Shot Vision</th>
<th>Shot Description</th>
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