

FREE SWIM

GUIDE FOR EDUCATORS + CHANGEMAKERS

www.freeswimmovie.com

A film by Jennifer Galvin

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CONTRIBUTORS

Bahamas Reef Environment Educational Foundation (BREEF)

Marcia Musgrove, M.Sc.
www.breef.org

reelgreen

Jennifer Galvin, Sc.D., M.P.H.
Leah Mayor, Ph.D., M.S.
www.reelgreen.net

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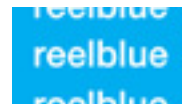


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FILM DIRECTOR'S STATEMENT

Free Swim is an award-winning documentary exploration of the paradox of islanders not knowing how to swim. Taking place on Eleuthera, an island of The Bahamas, we follow a group of kids as they overcome their fears, gain confidence and reconnect with their environment by learning to swim in open waters. With socio-economic conflicts of the island's dependence on tourism, for the characters in this film, swimming is not merely about leisure, but gaining new skills for their future.

The idea for *Free Swim* grew out of my personal adventures and public health work with coastal people around the world. I was increasingly aware that many people, young and old, who live surrounded by water, do not know how to swim. As a doctor of environmental health and a filmmaker, I saw swimming as a node for environmental, economic and social determinants of health and the implications of this dynamic as a connector for two troubling issues:

1) According to the World Health Organization (WHO), The Bahamas has the 4th highest per capita drowning rate in the world. Drowning is the second leading cause of accidental death for children globally (and is notoriously underreported). In the U.S. alone, an estimated 60% of children of color are unable to swim and they drown at disproportionate rates – three times the rate of Caucasian children. Corresponding data does not exist for most countries, including The Bahamas.

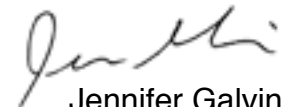
and

2) Modern living has created a gap between people and nature, especially for children. Teachers, parents and physicians recognize that cultivating a deeper connection between people and the natural world is critical for human health, achievement and creativity. There is growing recognition that we must educate young people, the next generation of decision makers, in ways that reunite them with the environment.

As a filmmaker, I wanted to explore the interconnection of these two critical concerns with a story that merged the harms of the past with hopes for the future. I strive to create a dialogue between the audience and moving image, music and voice because environmental and public health challenges need people to feel connected to the problems and to the solutions. *Free Swim* is an empowering film that combines the individual human experience of learning to swim with larger societal topics, exploring complicated socio-economic and environmental challenges with which communities' worldwide struggle. These include the influences on community function by the media, drowning, tourism, education and ecological health – to name just a few. While the documentary's emotional trajectory unfolds in an island far away from many audience members, the process of learning to swim allows viewers to tap into personal fears and have an experience with the ocean. It is a story about access to untapped potential for achievement and to a renewed opportunity for the future of our own health, and of the ecological health of the planet.

Even in locations far from the ocean, Free Swim generates long conversations about much more than expected. The film is best used as an educational outreach tool, facilitating an open conversation toward creating positive action. Watching the film often provokes more questions than it answers and it encourages viewers to question their own relationships with the world as global citizens: What are the barriers to learning to swim? What might be the unexpected power of learning? Does learning to swim increase the possibility for achieving individual meaning, newfound freedom and personal fulfillment? What is at stake when people are unable to connect with their environment beyond purely using it for utilitarian gain? And, when we come to better understand our environment, will we value it and ourselves more?

In an increasingly digital age, the craft of storytelling is an important conduit that supports life long learning and inspires social movement. It is my hope that Free Swim contributes to breaking the drowning cycle, challenges stereotypes about swimming, ignites intergenerational responsibility, and opens access for other social and environmental causes in unforeseen ways around the world. I also hope that this type of storytelling promotes future story-making and reinforces the power of teaching art and science together.


Jennifer Galvin
Director, *Free Swim*



ABOUT REELGREEN

We believe that visual storytelling at its best enables people to have a dialogue with the screen – be it on their home computer or in a movie theater. Storytelling can move viewers to step beyond simply being aware of an issue to actually doing something about it – and oftentimes, watching a good story triggers more story-making. We call it visual educational activism™ and we break it down into three steps: see – learn – do. This guide is a part of exploring the connection between viewing and doing.

We re-imagine the role of storytelling and work with communities to create sustainable solutions to social and environmental issues. As filmmakers, educators, scientists and journalists, more and more we hear the question, “What can I do?” Hearing this question is a good sign of growing interest in the desire to contribute to sustainability and to healthy solutions. People are reframing problems, asking questions and creating integrative solutions. Film and media is redefining the way we view, interact and connect with the natural world, and with one another.

We apply media beyond the screen through real-life applications in homes, schools and organizations that are working to connect people with social and environmental issues. Digital media and educational technology can extend beyond current modes of instruction as participatory media, which unlocks new forms of knowledge construction and collaborative learning – and underscores an understanding of the fluidity between local and global health challenges.

We wonder just how far we can take the connection between visual media and community action. Our work creates a new type of common resource – generating a groundswell of shared learning and a shift to a sustainable future. Visit us at www.reelgreen.net

BAHAMAS REEF ENVIRONMENT EDUCATION FOUNDATION

The Bahamas Reef Environment Education Foundation (BREEF) is a non-government, non-profit Bahamian organization whose mission is to promote a sustainable relationship between Bahamians, visitors and the marine environment. It was founded in 1993 by Sir Nicholas Nuttall to address growing concerns on the state of The Bahamas’ marine environment. BREEF seeks to accomplish its mission through public education initiatives, teacher training workshops, school presentations, environmental policy advocacy, and collaboration with local and international organizations and scientists concerned with maintaining a healthy ocean environment.

BREEF is pleased to partner with reelgreen on this educators’ guide, as we strongly believe that the only way to truly appreciate and understand the importance of our oceans is by immersion.

Visit us at www.breef.org

HOW TO USE THIS GUIDE

This guide is focused on increasing recognition and responsibility for the connections between healthy people and a healthy environment. It aims to encourage creative, place-based solutions to the complex problems that we face globally. We believe that film should enable conversation and inspire community engagement. Every viewer plays an important role in pushing environmental discussions forward.

We've designed the *FREE SWIM* GUIDE FOR EDUCATORS & CHANGEMAKERS to be flexible. *Free Swim*'s story is linked with guiding questions, activities and lesson plans that educators can use to engage students in environmental problem-solving and community action. The guide has two main parts: Chapter Overview and Theme Overview. The Chapter Overview is just that – it breaks the film down into chapters, scene by scene. Try watching the film in smaller pieces to meet programmatic time constraints and to reach educational goals. Hit fast-forward on the DVD player and find the chapters that suit your needs. We've provided discussion questions and suggested activities for existing classes, from mathematics to physical education. The Theme Overview covers three topic areas: The Ocean, Ocean + Health, and Youth as Change-makers. This section may be best used if you are able to watch the film in its entirety, but certainly can be applied to the chapter-based approach. These themes cover big, complicated issues – and the themes themselves are interconnected. In the Theme Overview section, we've provided discussion questions, lesson plans and extension activities.

We encourage educators and change-makers to review the guide as a way to generate discussions that link to broader curriculum focus areas. You may wish to provide index cards pre- or post-screening for viewers to: 1) write down answers to any of the questions offered below, 2) submit anonymous questions they think of while watching the film, and/or 3) conduct a poll of the audience about who can/cannot swim. *Free Swim* fans should also visit Google Ocean (<http://earth.google.com/ocean>) to discover more below the ocean's surface, from the largest marine creatures to the deepest underwater lab, and even to create your own multi-media ocean exploration. Share your Google Ocean journey and tell us how *Free Swim* affected you by visiting us at www.reelgreen.net.

OUR AUDIENCE

This guide is written with a grade 6 – 12 audience in mind, but it is adaptable for public health practitioners, teachers, outdoor educators, environmental policymakers, community organizers, parents, and older student groups. We encourage you to change it to suit the needs of your screening audience in any setting – asking questions not included in this guide and reaching out to people beyond the “green choir.” When appropriate, build your discussion group to include as many different perspectives as possible in an effort to inform future decision makers. Try to ensure that your discussion members represent diverse backgrounds and have the opportunity to touch on as many of the layers explored in the film as possible (e.g., public health, environment, socio-economics). As educators and change-makers, know your screening audience. Tailor your discussion objectives to challenge assumptions and debunk myths that disconnect people from the natural environment, and inspire your audience to engage with social problems in new ways.

CHAPTER OVERVIEW

CHAPTERS 1 - 4: ISLAND ARRIVAL (6:18 min)

Eleuthera (from the Greek Eleutheria meaning freedom); “the state of being free or at liberty rather than in confinement or under physical restraint.” – Wikipedia, Dictionary.com

These opening chapters introduce viewers to the island of Eleuthera. We learn that about 10,000 people live on this long and narrow island, roughly 110 miles long and a mile on average wide. We hear one islander say, “I believe more than 50% of Bahamians cannot swim” and another express, “It’s a little embarrassing. I mean it should be. Surrounded by water, why not?” Yet, we can see that the ocean is life here and the stage is set to further explore the paradox of coastal people not knowing how to swim.

Discussion Questions:

- Many people who live in coastal communities cannot swim. Why do you think this is so?
- Can you swim? Why or why not?
- What are some of the risks of not knowing how to swim?
- Have you ever visited a coastal community (other than where you live)? How does it compare to where you live?

Student Activities:

Math Connections

Students design and conduct a survey of people in their family, class, school, or community to investigate the number of swimmers vs. non-swimmers and the reasons why they do/do not swim. Students should process their data collection and display their statistical results graphically.

Social Studies + English Language Arts (ELA) Connections

Students work in pairs to conduct research about the history and geography of the island of Eleuthera. They may write descriptive paragraphs or create a more visual island profile to document their findings.

CHAPTERS 5 - 9:

OUR DEEPEST FEAR (9:22 min)

“Our deepest fear is not that we are inadequate. Our deepest fear is that we are powerful beyond measure.” – Marianne Williamson

These chapters begin to uncover and interpret the reasons people do not swim in the ocean, including behavioral, cultural and historical perspectives. We hear people expressing their fears and their dreams about the ocean. The audience meets Sally and Brenna, the founders of Swim to Empower. We learn that as high school students while on a study abroad program at the Island School, Sally and Brenna recognized that many people they met on Eleuthera didn't know how to swim. After making new friendships, one by one people asked to learn. Sally and Brenna started Swim to Empower and as we hear from Sally, “We only wanted to do the program if people wanted to learn in the community.” We also meet the Sweeting sisters and people talk about how a drowning accident has affected them. As one character expresses, we hear that the younger generation “tend to do more things on land than on the sea. They don't see the sea as an attractive entity. They stand more in fear of it.” We start to think about how lacking the life skill of swimming is interconnected with other social, economic and environmental issues facing coastal communities.

Discussion Questions:

- What motivated Brenna and Sally to teach swimming?
- “Working women don't have the time to every day look after their daughters' hair.” “If it gets wet, it gets really loose and it comes out. So no one really likes to get their hair wet because it ruins the style of it. It's usually expensive. People spend a lot of money on their hair.” What do you understand by each of these film quotes? How does this issue of hair and swimming differ across cultures or ethnic groups? (For example, in The Bahamas many girls and women have hair extensions glued, sewn or braided into their natural hair. This can be costly in a beauty salon depending on the quality of the hair extensions and complexity of the hairstyle. Glued and braided extensions may come loose when wet.)
- What are some of the issues and stereotypes associated with swimming and race, ethnicity, age, and gender? How did these issues and stereotypes arise? What roles do education and communication have in breaking this cycle?
- Recall some of the myths and fears people expressed about the ocean in the film. What fears (if any) do you have about the ocean? Which of these fears are realistic and which ones are only imagined? Explain your answer.
- How can a drowning accident impact a community? Have you ever had an experience with a drowning accident that you would like to share? Can drowning be prevented?
- Who do you think should learn how to swim?

Student Activities:

ELA Connections

According to the International Life Saving Federation, every year 1.2 million people around the world die by drowning. Have students write a short essay or have a class debate to defend their position on the following statement: “All people should learn how to swim, regardless of where they live.” Have students write a one-page biography about a famous swimmer or about a person who broke through the stereotypes associated with swimming.

Health + Physical Education Connections

If swimming classes are not offered at your school, consider arranging an orientation lesson for students via your local Red Cross, YMCA/YWCA or other reputable organization. Have students design public education brochures that talk about the benefits of swimming, where swimming classes are available in their local community, and how a person might enroll. .

CHAPTERS 10 - 19: SWIM TO EMPOWER (22:13 min)

“Never doubt that a small group of committed citizens can change the world. Indeed it is the only thing that ever has.” – Margaret Mead

These chapters explore connections between the health of people living in coastal communities and the ocean. The scenes weave the story of children learning to swim with an examination of some economic, social, and cultural perspectives in Eleuthera. Issues presented include tourism development, Bahamians’ relationship with the sea, coastal access, race and swimming, the psychology of scarcity, and sustainable fisheries. We see mothers inspired to learn to swim by their children, celebrations of the sea through Conch Fest, and a culture confronted with the realities of overfishing. We hear, “If they take all the baby conchs, there’s not going to be any more to reproduce. If they’re all gone, what are we going to do?” Soon after we witness a woman singing a hymn at the shore while holding empty conch shells. Clouds move over the ocean and a gate closes across a beach road while we hear, “Bahamians relationship to the sea, for the majority, I think it’s something like a backdrop on the canvas. It frightened me when I saw more and more of these walls being built, more and more of the sea being closed off because the sea has such a powerful effect on the Bahamian consciousness.” With every swimming lesson, kids and adults increase their comfort ability in the open water, learning more about themselves and the water that surrounds their island home.

Discussion Questions:

- What steps and techniques were used to teach the children how to swim?
- How does beach access play a role in learning how to swim?
- In what ways do people in both coastal and inland communities depend on the ocean?
- How does tourism development in coastal communities like The Bahamas affect ocean health? How does the health of the ocean affect coastal economies?- Due to a downturn in tourism, many people living in South Eleuthera lost their jobs, migrated to the capitol or experienced financial loss. How might learning to swim broaden economic opportunities for people living in coastal communities?
- How much and what kind of seafood do you or your family eat? Is seafood considered a part of your culture or family heritage?
- What are the current rates of seafood consumption in the world? Where does your country rank?
- What concerns did locals express about the decline in the Queen Conch population? Why is it important not to fish juvenile organisms to maintain a healthy ocean environment?
- How can you use ocean resources in more sustainable ways?

Student Activities:

Art + ELA Connections

Students can create a collage or poster to depict how we are all connected to the sea, no matter where we live. Have students write a poem or a letter to the ocean, which thanks the ocean for all of the benefits it provides.

Family + Consumer Science Connections

Have students identify 8 - 10 items in their household that come from the ocean or contain ingredients from the sea. They should name the “seacret” ingredient(s) in each item and state its source. Information can be displayed in a table, chart, poster, or other medium.

Science Connections

Have students conduct research about the Queen Conch (*Strombus gigas*) or another commercial marine organism in your area. Create a marine species profile for the chosen organism including a diagram and a description of genetic classification, habitat, feeding, mating and reproduction, commercial uses, endangered status, survival threats and conservation efforts.

Health + Physical Education Connections

Have students investigate at least five careers where the ability to swim is essential. Encourage students to think beyond the obvious, such as swim instructor, lifeguard, etc.

CHAPTERS 20 - 24:

FREE SWIM (10:09 min)

“We do not inherit the Earth from our ancestors, we borrow it from our children.”— Native American proverb

The final chapters share the children’s success stories and how their feelings towards the ocean, their community, and about themselves have changed. We hear from Teandra, “You never say, ‘I want to be a marine biologist’, or ‘I want to teach scuba diving’, or ‘I want to go scuba diving.’ Never think that’s a possibility to be something that involves the water.” We watch as swimming students overcome their fears, build confidence and reconnect with their local environment. Swim to Empower takes a group into deeper waters to snorkel over a coral reef. Together, we observe the swimmers’ exploring the underwater world and hear an ensemble of discovery: “I see fish and coral reef”, “There’s a lot of cool stuff in the ocean” and “Not only us live on this land, fish too and new stuff I never saw before.” We see Rozhandra and Chris in school as they talk about how swimming helps them academically achieve and become leaders. With memories of a friend drowning and the conflicts of a tourism-based economy, for these island youth it’s not just about floating, but gaining new skills for their future. We hear from Sally about the powers of learning to swim: “Swimming is chosen because it’s this way to experience this whole other part of the world, most of the world. Through understanding ocean ecosystems, and especially for people in coastal communities, it’s empowering because you understand your environment, you understand what’s there and nothing’s off limits to you.” As audience members, it’s as if we are in the water too, watching people increase their swimming abilities and then teach one another, passing on this life skill. In the final scene we experience visuals of hope and possibility set to a chorus of life lessons learned: “Wherever you go you will always find something from the sea”, “I feel connected to the sea and to people”, “It makes you feel like you’re a part of it”, and “I can do anything once I put my mind to it.”

Discussion Questions:

- Why was Swim to Empower effective in helping people learn to swim?
- How did the children respond to snorkeling in deep water?
- How did learning to swim affect Joanna, Rozhandra and Chris? Why do you think they were affected in this way?
- What is the benefit of children teaching their peers how to swim?
- Why might experiencing the ocean help people to better understand it? How does spending time in nature affect you? Does this make you more/less likely to think about the connections between environmental health and your own health?

Student Activities:

ELA Connections

Have students write a short essay on the following quote from the film: “Swimming is a skill that anybody can learn.” Do you agree or disagree with this statement? Give reasons to support your answer.

Health + Physical Education Connections

Have the class create a list of good safety rules to observe when swimming in a pool, in an enclosed body of water, and in the ocean. Students can investigate how swimming is used to help people with disabilities and certain medical conditions. Students should share their findings with the class.

THEME OVERVIEW

Throughout *Free Swim* people of all ages share their ocean stories. We see that the ocean is life on Eleuthera and we hear people expressing their fears and their dreams about it. But we also see that the younger generation, as one character states, “tend to do more things on land than on the sea. They don’t see the sea as an attractive entity. They stand more in fear of it.” With every swimming lesson, kids and adults increase their comfort and ability in the open water, learning more about themselves and the water that surrounds their island home. In that spirit, the theme-based activities in the following three sections are also collaborative and experiential. After learning about the diversity of ocean life, students explore ocean and human health in the broader context of their community and nation. They discuss threats to a healthy ocean environment and ways to protect it. We seek to empower youth as change-makers by connecting them with the natural world.

THEME 1: THE OCEAN

Just as the film’s characters learn about life in the ocean through an immersive experience, the guiding questions, lesson plans and activities in this section will help students feel and visualize the ocean environment. If you are near the ocean, this is a great opportunity to get outdoors. If a trip to the coast is not an option, dive into Google Ocean (<http://earth.google.com/ocean>), explore the Encyclopedia of Life (<http://www.eol.org>), or take a trip to a nearby museum, aquarium or environmental learning center.

Guiding Questions:

- What percentage of Earth’s surface is covered by water?
- How many people live along the coast or near the ocean in your community? In the world? Why do so many people live on the world’s coasts?
- How far do you live from the ocean? If you wanted to go to the ocean, how would you get there? Is it difficult or easy?
- What kinds of organisms live in the ocean? Why are they able to survive in this environment?
- How would life on our planet be different if the Earth’s surface was covered by 71% land and 29% water?

Extension Activity:

Grab a map of your city or town, or have students make their own local map. Pinpoint how far students live from the coast, how far the school is from the ocean, the location of beaches, and access points to the water – anything that may be of significance to local ocean issues. Students should present their maps to the class, including any findings that surprise or concern them.

LESSON 1: PLANET EARTH OR PLANET OCEAN?

Water is critical to all life on this planet and most of Earth's water is found in our oceans. In fact, about 71% of Earth's surface is covered by ocean. Perhaps we should call this planet "Planet Ocean." In this activity students will compare the percentage of Earth's surface covered by water vs. land and discuss ways that we depend on the ocean in our everyday lives.

Objectives:

1. Graphically represent the percentage of Earth's surface covered by water vs. land.
2. Identify the five major ocean basins (Atlantic, Pacific, Arctic, Indian, Antarctic/Southern) on a globe or world map.
3. Discuss the ways that oceans are important to life on Earth.

Resources:

Globe, world map, blindfolds, pictures depicting ways we use the ocean and its resources, and the article "Earth's Oceans: An Introduction" (<http://www.enchantedlearning.com/subjects/ocean/>).

Procedure:

1. Begin the lesson by asking students: "If you were to fall from space, where would you most likely crash – on land or in the water? Give a reason for your answer." Facilitate the class in discussion so that they come to a consensus on an answer. Then invite 3-4 volunteers to participate in the following activity to investigate the class prediction.
2. Place a globe on a sturdy desk in the front of the room. Have the first volunteer stand just where he/she can reach the globe with a pointed index finger. Allow the student to touch the globe and take note of its position, then blindfold him/her. Now have the volunteer stand with his/her index finger pointed in the air above his/her head.
3. Start spinning the globe at a slow-moderate pace (or have another volunteer do it). On your command, have the blindfolded student lower his/her pointed finger to touch the globe to simulate falling from outer space to Earth. Once the command is given, stop spinning the globe; it should continue spinning on its axis until the blindfolded student touches it. In a suitable way, record whether he/she touches an area of water or land on the globe. Repeat this exercise nine more times, changing volunteers in the process. (Students should touch 'water' approximately 7 out of 10 times).
4. Have students determine the % of touches on land vs. water and graphically represent their results (e.g., using a pie chart). Ask a few volunteers to display their graphs and suggest whether results support the class prediction.
5. State the percentage of Earth's surface covered by water vs. land (71% vs. 29%). Discuss how this statistic compares with the class results.

6. Use a globe or a large world map and have students name and identify the five major ocean basins. Distribute slips of paper with the following statements to students in pairs:

Say whether you agree or disagree with each statement below. Be ready to justify your answers.

- Planet Earth really should be called “Planet Water.”
- Mars is the only other planet in our solar system that has water on it.
- The ocean is home to many different kinds of organisms.
- The oceans affect weather and temperature on Earth.
- There are four separate oceans.
- The Pacific is the largest and the deepest ocean.

7. Distribute copies of the article “Earth’s Oceans: An Introduction” or project it on a white board / screen. Instruct student pairs to read the article and then respond to each statement. Discuss student responses.

8. Finally, use any available pictures to discuss the ways that we depend on the ocean in our daily lives.

Extension Activity:

Explore language rooted in the ocean. Have students brainstorm how ten words that we use today are historically connected to the sea. Additional information about this type of activity may be found at: http://seawifs.gsfc.nasa.gov/OCEAN_PLANET/HTML/education_lesson2.html



LESSON 2: SEASHORE SCAVENGER HUNT

Many animals and plants live on the seashore. The seashore may be rocky in some places and sandy in others. Animals and plants are designed and adapted to live in these habitats. They must be able to withstand the harsh conditions of life on the seashore. Some of the problems that they have to overcome are high temperatures, extreme wet and dry conditions, and wave action.

Objectives:

1. Identify animals and plants that live on the seashore.
2. Describe the adaptations of at least one animal and one plant to life on the seashore.

Resources:

Scavenger hunt worksheet, clipboards (can be made with cardboard and a bulldog clip), pencil, field guide.

Procedure:

1. Discuss field trip safety. Children should be careful and try not to disturb or harm animals. All creatures should be treated with respect.
2. Give each student a copy of the scavenger hunt worksheet (see below).
3. Give each student 15 minutes to find and identify as many of the items on the list as possible.
4. Assist students with identification using a field guide.
5. At the end of the hunt, gather students together and compare results. Ask students how the organisms that they found are adapted to living in their habitat.

Extension Activity:

Adapt this lesson plan for an ecosystem other than the seashore.



Student Name: _____ **Date:** _____

Seashore Scavenger Hunt Sheet: As you explore the seashore discover as many of these organisms as you can from the list below. Remember to put things back exactly where you found them. For the animals that you found, draw the organism that fits the description below.

Animals on the Seashore

Animal (name & description)	Drawing
CHITON – This is an oval-shaped animal that is attached firmly to rocks. It has a hard outer shell with ridges. The shell is attached all around its edges to a leathery foot, which it uses to attach itself to the rock, holding water beneath it when the tide is out.	
LIMPET – This is a cone-shaped shell with a hole in the top (like a volcano). They may be the color of rocks (white, gray, beige or brown).	
BLENNY – This is a small, fast-moving fish, which is the color of sand. It is often found in tide pools. It has a spiny fin along its back and rests on the bottom on its front fins when it is not moving.	
BLEEDING TOOTH NERITE – This is a marine snail with small yellowish-red and black squares on its white shell. If you turn it over carefully, you will see a red area that surrounds 2 or 3 white teeth.	
Describe another animal:	

Plants on the Seashore

Look carefully at diagrams in the field guides provided. Carefully pick one leaf from a plant that matches the descriptions below. Also pick the leaf of one other plant so that you can identify it.

Plant description	Plant leaf
Goat's foot/Railroad vine – This plant grows along the sand as a creeping stem (vine), helping to hold the sand in place. The leaves are shaped like a goat's hoof (heart-shaped). The flowers are deep purple and trumpet-shaped.	
Saltwort – This plant has thick, fleshy pale green leaves. It stores water in its leaves and creeping stems. The flowers are yellow-white in color and grow close to the stem.	
Sea Oats – This is tall grassy plant with long thin leaves. Their flowers are bushy and dull gold in color. Each flower spike is made up of many flowers bunched together.	
Sea grape – This tree has large rounded leaves that are shiny to reduce water loss. The flowers are small and white, and once pollinated form purple edible fruit.	
Additional plants found:	

THEME 2: OCEAN + HEALTH

In this section we explore what it means for a person and an ocean to be healthy, and the importance of connecting the two. This can be done even if you live far from the ocean, such as by learning more about the water cycle, climate change, marine medicines, and the seafood industry.

Throughout *Free Swim's* cinematic journey, there is a message of local empowerment, participation and hope for a healthy future. Oceans are a global commons and are negatively impacted by many human behaviors. Just as the film shows the many ways that human health and ocean health are connected, we've included guiding questions, extension activities and lesson plans that increase awareness of marine ecosystems and deepen an understanding of our connection to their sustainability. For example, the Marine Debris lesson provided below helps to connect the perils of human waste to global health as well as to more personal empowerment questions. These lesson plans mirror the film's interdisciplinary value and can be used for a variety of subjects, including social studies, biology, geography, economics, and math. As with the previous section, we recommend complimenting these activities with outdoor time.

Guiding questions:

- What does it mean to be healthy?
- What are the main beliefs about the importance of a healthy ocean in your family or community?
- How is our health – as individuals and as communities – connected to the health of ocean ecosystems, such as reefs and estuaries?
- How do healthy coral reefs provide health benefits and protection to your community and to communities around the world?

Extension Activity:

Ask students to complete a multimedia group project that connects people with the aquatic environment and present it to the class (e.g., a song, artwork, photo essay, slide presentation, video report/podcast, blog, etc.). The Children and Nature Network may be a worthwhile additional resource. Visit www.childrenandnature.org for more information.



LESSON 3: FISHING FOR THE FUTURE

Through a fishing simulation, students model several consecutive seasons of a commercial fishery and explore how technology, population growth, and sustainable practices impact fish catch and fisheries management. In this activity, students will simulate the fishing activity in different oceans. As students progress through the fishing seasons they will likely overfish their oceans and will have to migrate to other oceans to meet their basic needs. Most groups will eventually create a total crash of fish stocks in all the oceans. This demonstration will clearly indicate the benefits of sustainable fishing practices.

Background:

Dr. Garrett Hardin coined the phrase “tragedy of commons” in 1968. Hardin describes cows grazing on a common land; since there is no direct cost to using the land, individual ranchers are motivated to add to their herds in order to increase their personal wealth. But, each added animal damages the pasture a small, perhaps imperceptible, amount. Ultimately this gradual degradation destroys the commons. Each rancher acting alone is behaving in an appropriate, rational manner, yet the sum total of all the ranchers’ actions destroys the resource for them all. From 1950 to 1990, there was a five-fold increase in the world annual fish catch. An increasing demand for fish coupled with environmentally damaging fishing practices are leading to yet another tragedy of the commons. Roughly 70% of the planet’s marine stocks are fully or overexploited, according to the Monterey Bay Aquarium’s Seafood Watch program.

Objectives:

1. Experience the ‘tragedy of commons’ as it relates to fishing resources.
2. Consider social, environmental and economic impacts of overfishing.
3. Identify sustainable fishing practices.

Resources:

M&Ms (two 14-oz bags for up to 30 students), small cups (one per student), small bowls (one per group), spoons (one per group), straws (one per student), a watch for timing the activity. If possible, try to use re-usable dishware, not disposable plastic.

Procedure:

Divide the class into groups of 3-4 students each. Each group will start with 30 M&Ms. Count out the first round of M&Ms for each group and place them in bags. It is advisable to select one student in each group as a moderator who will record catches, identify students who were unable to catch their quota, and add additional M&Ms to the bowl (see points 4 & 9).

1. Introduce and discuss the concept of sustainability using the following definition: “Meeting the needs of the present without compromising the ability of future generations to meet their own needs.”
2. Ask why sustainability may be an important goal for a society and what might be difficult about realizing this goal.
3. Tell students that today they are going to fish and explore some sustainability issues.

4. Explain the game rules:

4a. Each student will be a fisher whose livelihood depends on catching fish.

4b. The M&Ms represent fish in the ocean.

4c. Each fisher must catch at least two fish in each round to survive (i.e., get enough fish to either eat or sell).

4d. When fishing begins, students must hold their hands behind their backs and use the fishing rod (straw) to suck fish (M&Ms) from the ocean (bowl).

4e. The remaining fish in each ocean after each round represents the breeding population and thus one new fish will be added at the end of each round for every fish left in the ocean.

5. Give each group: a bowl (ocean) and have them choose an ocean to name it after.

6. Put thirty M&Ms into each bowl.

7. Give each student a straw (fishing rod) and cup (fishing boat) into which they place the fish (M&Ms) that they catch.

8. ROUND 1: Start fishing. Give the students 20 seconds for the first season of fishing. Students should hold their hands behind their backs for his round.

9. At the end of each round:

9a. Have each fisher count his/her catch (M&Ms in their cup) and record their catch. Record how many fish are left in the bowl.

9b. After each round fishers who do not catch a minimum of two fish must sit out for the following round after which they may return to the game.

9c. Add one new fish for every fish left in the bowl (ocean).

10. ROUND 2: Allow remaining fishers to use their hand on the straws during the second season to represent new technology, such as a faster boat or fish-finding sonar.

11. ROUND 3: After the second fishing season, give ONE fisher in each group a spoon to use instead of a straw. This represents inequity in the fishing industry in which some fishers utilize more advanced fishing technology than others, such as electric fishing reels. Continue the game for round three.

12. Allow students to invade other oceans if they have depleted their oceans, but do not tell them that that they can do this beforehand. Fishers may either go as a group to another ocean or disperse to other oceans.

13. Repeat fishing, recording and replenishing of fish stocks until either sustainable fishing is achieved or until all or most groups fish out their ocean.

14. Use the following sample questions to lead a discussion about the activity:

14a. How did you feel when you realized that you had depleted your fish stock?

14b. How did you feel when other fishers joined your group?

14c. How does this activity relate to real oceans and fishery issues?

14d. What happens to a resource when you have infinite population growth, growing technology and a finite resource?

Extension Activity:

Interview a local fisher, seafood shop owner or restaurateur about sustainability practices and perspectives.

LESSON 4: MERCURY RISING

In this lesson students will understand how contaminants, such as mercury, can concentrate up the marine food chain and potentially be harmful to human health. Students will explore several online resources and participate in a hands-on activity to learn more about bioaccumulation and biomagnification. Students should have prior knowledge about food chains, food webs and energy transfer.

Objectives:

1. Explain the terms 'bioaccumulation' and 'biomagnification'.
2. List some chemical contaminants that affect ocean food chains.
3. Discuss the negative effects of high mercury levels on human health and how these effects can be prevented or minimized.
4. Demonstrate how mercury concentrates along ocean food chains.
5. Use an online mercury calculator to determine personal levels of mercury consumption and provide local options for choosing safer seafood alternatives and preventing environmental contamination.

Resources:

Computer with Internet access for each pair of students, related Web addresses (see procedure section), 30-50 beans per student (use two colors in a 1:4 ratio), plastic or paper bags (one per student), notebooks/board, and pencils.

Procedure:

Part 1: Have students work together in pairs to explore the following online resources and answer the questions below. Pairs may be assigned to research different questions.

Online Resources:

- Bioaccumulation & Biomagnification: <http://www.marietta.edu/~biol/102/2bioma95.html>
- Mercury Overview: <http://na.oceana.org/en/our-work/stop-ocean-pollution/mercury/overview>
- Mercury's Health Effects:
<http://na.oceana.org/en/our-work/stop-ocean-pollution/mercury/resources/mercurys-health-effects>
- Mercury Contamination in Fish – Know where it's coming from:
<http://www.nrdc.org/health/effects/mercury/sources.asp>
- Consumer Guide to Mercury in Fish: <http://www.nrdc.org/health/effects/mercury/guide.asp>

Questions:

1. What is bioaccumulation? What is biomagnification?
2. List some chemical contaminants that can enter a marine food chain.
3. How is mercury harmful to human health?
4. How does mercury enter marine food chains?
5. Name three fish that tend to be high in mercury content. Give an example of a food chain that includes one of these fish.
6. What can be done to reduce mercury levels in water and seafood?

At the end of the designated time period, students will share what they have learned in a class discussion facilitated by the teacher.

Part 2: Students will play a game to demonstrate how toxins can travel through the food chain and how contaminant concentration is magnified in top predators. Students will need space to run around.

Choose a four-organism food chain created by the students in Part 1. Divide the class so that most students are primary consumers, less than half are secondary consumers and only 2 or 3 students are tertiary consumers/top predators. A ratio of 10:3:1 may be used. For example, in a class of 28 students, there are 20 primary consumers, 6 secondary consumers and 2 top predators.

Scatter the beans over the floor in the play area. The color bean in the lesser quantity represents mercury- contaminated food. Tell students that the beans represent food for the primary consumers, but do not explain the significance of the colors.

Round 1 (primary consumers only): Give students 30 seconds to collect as much ‘food’ as they can in their bags. Any one that does not collect at least 10 beans is out of the game for failure to find enough food.

Round 2 (primary & secondary consumers): Secondary consumers will chase the remaining primary consumers for 30 seconds. Once a primary consumer is caught, he/she must empty the contents of his/her bag into the predator’s bag. Any secondary consumer that does not catch at least one primary consumer is out of the game for failure to find enough food.

Round 3 (secondary & tertiary consumers): Tertiary consumers will chase the remaining secondary consumers for 30 seconds. Once a secondary consumer is caught, he/she must empty the contents of his/her bag into the predator’s bag.

At the end of each round, students record the number of each color bean that they have collected on the board or in a notebook. Once the rounds have ended, inform students which color beans are mercury contaminated. Analyze the results to determine which trophic level consumed the highest concentration of toxins (it should be the tertiary consumers). Discuss FDA safety tips about seafood consumption and mercury levels.

Additional information can be found in “What You Need to Know about Mercury in Fish & Shellfish”: <http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm110591.htm>

Extension Activity:

Have students use the online mercury calculator to determine their seafood mercury consumption levels. Direct them to modify the quantity and/or types of seafood in the calculator to find safer seafood options, based on availability in their area. The NRDC Mercury Calculator can be found at: <http://www.nrdc.org/health/effects/mercury/calculator/start.asp>

LESSON 5: ECOSYSTEM

Through this lesson students will become aware and knowledgeable about ecosystem forms and functions, and their importance in maintaining a greater balance in nature. Students will specifically create a marine and a fresh water ecosystem. Comparisons can be drawn between ecosystems or individual ecosystems can be finely analyzed.

Objectives:

1. Define the term “ecosystem.”
2. Identify living and non-living parts of an ecosystem.
3. Evaluate how living and non-living things affect each other.

Resources:

Flash cards, transparencies/images, writing paper, large bowl or aquarium, sand, plants, water, animals, rocks, twigs, etc.

Procedure:

Have students cheer the word “ecosystem.” Ask students what comes to mind when they think or say this word. Draw a brainstorm-web on the chalkboard to illustrate their responses.

1. Observe images of different ecosystems. Probe students for similarities and differences. Write responses on the chalkboard.
2. Define ecosystem: “a place where living organisms and non-living things interact and affect each other.”
3. List the various types of ecosystems after observing pictures of examples.
4. Group students and allow them to set-up their bowl/aquarium with the living and non-living organisms. Students should discuss why they are important to the ecosystem.
5. Draw students’ attention to one another’s ecosystems or to the class aquarium. Debate the impacts of removing different living and non-living things in this system.

Extension Activity:

Go on a field trip to a nearby beach or pond. Observe and document living and non-living things found. Discuss threats impacting the ecosystem’s well-being and propose solutions. Write a newsletter on how to help preserve your local ecosystems.

LESSON 6: MARINE DEBRIS

Every year tons of trash finds its way into waterways and onto beaches. Whatever its source, marine debris is a result of human activities and is harmful to marine organisms, human health and community safety. Moreover, items such as plastic and aluminum takes hundreds of years to biodegrade in the marine environment.

Objectives:

1. Define the term “marine debris” and give examples.
2. Uncover how marine debris ends up in the ocean and what happens to it once it is there.
3. Explain some adverse effects of marine debris on the ocean environment and on human health.
4. Discuss three ways in which marine debris can be reduced locally, nationally and globally.

Resources:

Disposable gloves (1 pair per person), garbage bags, 6 hula hoops. This lesson is done on location, preferably at a local beach.

Procedure:

The teacher poses the following scenario to the class for discussion: “Tommy and his family had a beach picnic; they played games, ate lots of food and had a whale of a time. At the end of the day, they took empty coolers home.” The teacher will propose a few options regarding what Tommy’s family did with their waste and ask students what impact their actions may have. The class is divided into groups; each group is given a garbage bag and a pair of gloves per person. Groups are given 5-10 minutes to locate items on the beach that may contribute to marine pollution. Students should name and record the items that they find. At the end of the allotted time each group will categorize and tally their items. Groups will share their findings with the class, including any patterns in the data (e.g., most of the garbage is paper; the least is metal; most trash seems to be local/international). Group presentations should facilitate discussions about why these items were found. The teacher should be prepared to discuss the impact of various items on the marine environment and human health, including the time it takes for items to degrade in the environment. The teacher will ask the students what they should do with their garbage before leaving a beach or any natural environment (Answer: take it away and dispose of it properly).

Extension Activity:

The teacher will set up a hula hoop obstacle race. The students are divided into teams and then participate in a relay, moving through the hoops to simulate the challenges that marine organisms face with marine debris. When back in the classroom, students may prepare skits that discourage activities resulting in marine debris and encourage activities that help to maintain a healthy marine environment. Students can also use some items that they found to create a marine debris biodegradation time line as a classroom display or create 1-minute public service announcements using the “poem for two voices” format. You may learn more and listen to “poems for two voices” via: http://www.writingfix.com/PDFs/Comparison_Contrast/Poem_Two_Voices.pdf and <http://youthradio.wordpress.com/2007/04/28/poems-for-two-voices>

THEME 3: YOUTH AS CHANGE-MAKERS

This section is about empowering youth to solve problems. As high school students while on a study abroad program at the Island School, Sally and Brenna recognized that many people they met on Eleuthera didn't know how to swim. They decided to offer swimming lessons and as Sally said, "We only wanted to do the program, if people wanted to learn." The community response was positive and Swim to Empower was established. No matter how close or far you live from the ocean, you can change your relationship with the natural world, with the ocean, and therefore with the planet. Making new friendships, allies and community partnerships, locally and internationally, facilitate collective action for a more equitable society. Educate your communities and provide your families with information and ideas focusing on the age-old question, "What can I do?"

Guiding questions:

- What are the main ocean issues (social, economic, environmental) that affect you and the community where you live?
- How do these issues affect you on a daily/weekly/yearly basis? Do they vary depending on time of year?
- Why are these issues really important to you? What's the one thing you want others to know about the ocean?
- What individuals, groups or organizations in your community are taking action on ocean health issues, such as sustainable fisheries? How can you get involved?
- What can you do to promote positive change on environmental health issues in your community?



LESSON 7:

COMMUNITY ACTION PLAN

For a final lesson we suggest devising and implementing a “Community Action Plan.” Now that students have explored ways that individual health, community well-being and the ocean are connected, have them apply this understanding by tackling a problem in their school or local community. Their plan(s) should directly improve the health of people and the environment where they live. They can take this on as a class, in groups, or as individual, active citizens. Here are some ideas to help students get started.

Community Action Plan Ideas:

- If I were going to tackle one of the issues I’ve learned from the film, it would be _____.
- What are the drowning rates in your community? Your country? The world?
- Who is working on swimming and water-safety issues in your area?
- What are some of the problems that occur from a lack of understanding of the natural environment?
- Students can explore their human footprint on environmental health. Here are two useful resources: No Impact Project (<http://noimpactproject.org>) and National Geographic’s “Human Footprint” (www.nationalgeographic.com/xpeditions/lessons/14/g68/HumanFootprint.pdf)
- Students can use the ‘seven step’ methodology followed by the Eco-Schools International program to investigate problems and to develop their action plans. The Environmental Audit/Review Checklist and Action Plan template are especially useful. Learn more about the ‘seven steps’ at: <http://ecoschoolsbahamas.org>, www.eco-schools.org and www.nwf.org/Global-Warming/School-Solutions/Eco-Schools-USA/Become-an-Eco-School.aspx

Things to Consider:

- What are the barriers to behavioral change when doing work in your community?
- Who are the environmental change-makers in your community? Who can help you make positive change in your class/school? In your home? In your community?
- Who is in the position to help or hurt a cause that you are passionate about?
- How do local and foreign tensions play out when international organizations work abroad? What are the key factors in keeping local interests as priority? What can be done to gain more trust and transparency?
- Who are your environmental heroes? What are the environmental success stories that inspire you? What can you learn from them to help with your own action plan?

Extension Activity:

Host a mock town hall meeting. Have students choose their own topic of debate and identify key community stakeholders, such as environmental organizations, swimming groups, doctors, politicians, etc. Working in groups, students should present their group’s opinion or position, including barriers they face and their ideas for implementing solutions. For research purposes, students may wish to interview real-life members of the community groups they’ve identified. Upon completion of the mock town hall meeting, students may write letters to the editor for publication in a local newspaper. Given that new concerns and questions may arise, students should be encouraged to also write a letter to a scientific hero, to a government official (local, regional, national or global), or start their own blogs about solutions to ocean issues.

OUR TEAM

Jennifer Galvin, Sc.D., M.P.H.

Dr. Galvin – scientist, filmmaker, educator and entrepreneur – uses her background in public health and environmental science to inform her work as a filmmaker. Galvin holds a Sc.D. in environmental health from the Harvard School of Public Health, a M.P.H. in environmental epidemiology from Yale University, and a B.S. in aquatic biology from Brown University. She is the co-founder of reelgreen (www.reelgreen.net) and reelblue, LLC, a media production company specializing in stories about global health and the environment (www.reelblue.net). From short videos to feature films and books, her award-winning work at the intersection of art and science pushes the craft of storytelling to educate and inspire.

email: galvin@reelgreen.net

Leah Mayor, Ph.D., M.S.

Dr. Mayor is dedicated to promoting transformative learning by connecting adults and youth to communities around the globe. She has lived in Nepal, Tibet, and Mongolia designing and delivering community based tourism programs and conducting research for her doctorate at Cornell University. After lecturing in education, a brief stint in corporate consulting led her to the Cloud Institute (www.sustainabilityed.org). Working at the crossroads of learning and social change, Mayor is passionate about designing and delivering innovative programs that directly contribute to connecting individuals with their communities. She re-imagines the student-school-community relationship, affording communities new ways to learn together for a sustainable future.

email: leah@reelgreen.net

Marcia Musgrove, M.Sc.

Marcia Musgrove leads the Magnet Marine Science Programme at CV Bethel Senior High School in Nassau, Bahamas. In 2008, she was recognized with the prestigious "National Teacher of the Year" award in The Bahamas. Musgrove is an active member of the Bahamas Reef Environment Educational Foundation (BREEF), where she consults and assists on educational curricula and outreach projects. She holds a M.Sc. in curriculum, instruction and technology from Nova Southeastern University and a B.Sc. in marine biology from the College of Charleston.

email: marcia@breef.org

Contact Us

We hope that you enjoy *Free Swim* and that it fuels positive action worldwide for years to come.

If you would like to host a screening of *Free Swim*, visit www.reelgreen.net

For more information about *Free Swim* or to join our mailing list, visit www.freeswimmovie.com

We'd love to hear from you, so if the film and this guide inspired you in some way, please share your story with us!

ADDITIONAL RESOURCES

The good news is that right now – from the shallow coves of the Caribbean to the city pools of New York – people are working on the topics explored in Free Swim and answering some of the questions presented in this guide. Below we have listed additional resources that may be of interest.

Organizations & Resources:

Bahamas Reef Environment Educational Foundation (BREEF) – www.breef.org

Bahamas Swimming Federation – www.bahamasswimmingfederation.com

Boys and Girls Clubs of America – www.bgca.org

British Swimming – www.swimming.org

Centers for Disease Control and Prevention (CDC) – www.cdc.gov

Center for Health and the Global Environment – <http://chge.med.harvard.edu>

Children & Nature Network – www.childrenandnature.org

Deep Creek Middle School (DCMS) – www.dcmsbahamas.org

Diversity in Aquatics Program (DAP) – <http://diversityinaquatics.ning.com>

Free Swim – www.freeswimmovie.com

The Island School – www.islandschool.org

The Josh Project – www.joshproject.org

Make a Splash – www.makeasplash.org

Parting the Waters – www.dotellproductions.com

reelblue – www.reelblue.net

reelgreen – www.reelgreen.net

Safe Kids Worldwide – www.usa.safekids.org/water

Sport in Society – www.sportinsociety.org

Swim Gym – <http://swimgym.net>

Swim to Empower – www.swimtoempower.org

Swim Strong Foundation – www.theswimstrongfoundation.org

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