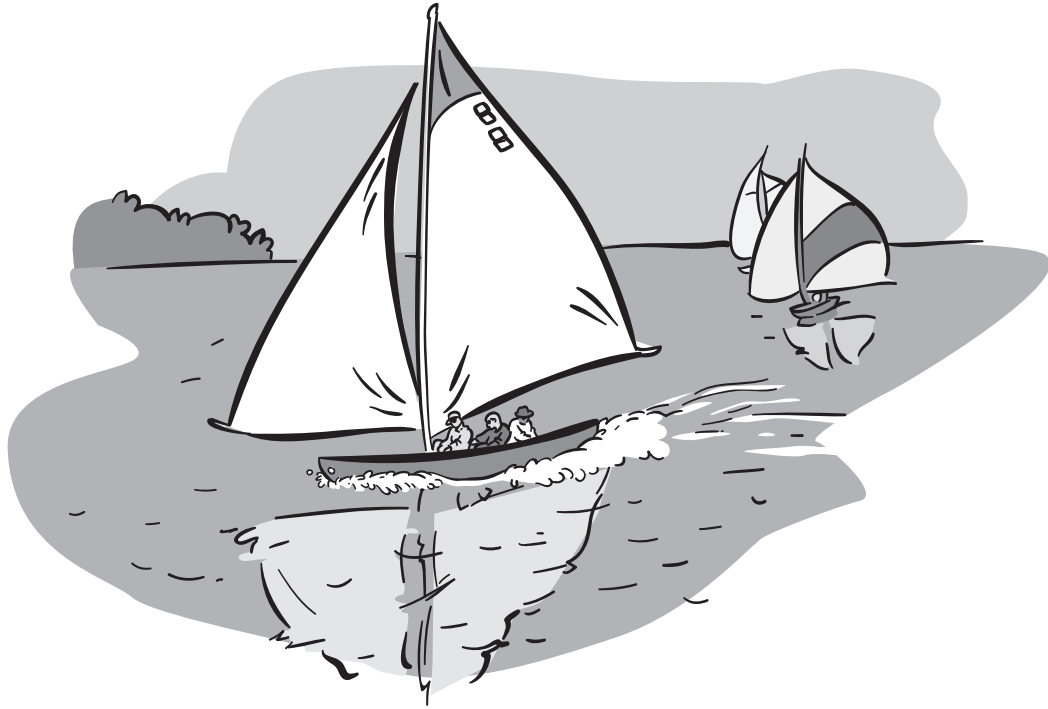


# ARTS OF THE SEA



## learning objectives

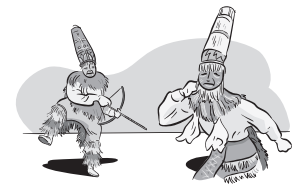
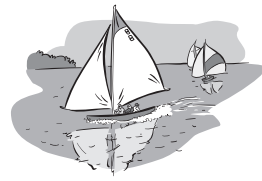
By the end of this chapter, students should be able to:

- explain the history of boat building and boat racing in Bermuda;
- compare and contrast oak and cedar as shipbuilding materials;
- describe the reasons for the decline of wooden boat building and its replacement by fibreglass boat building in Bermuda;
- analyse why boat building is a dwindling art in Bermuda;
- understand the skill and teamwork involved in racing a fitted dinghy;
- compare and contrast boat racing stories;
- describe different methods of fishing and selling fish; and
- learn how to make and read a shark-oil barometer.

### CROSS CURRICULAR LINKS

In this chapter, in addition to social studies curriculum links, there are readings, discussion questions, and activities that fit well with language arts, design and technology, drama, science, music, math, business studies, and visual and fine arts.

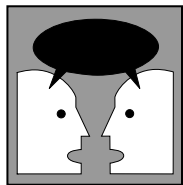
In this chapter, students will gain an understanding of and appreciation for the history and traditions of boat building, racing, and fishing in Bermuda. They will consider the skills of children and adults in building boats and how people have learned their skills. They will examine the importance of teamwork when racing a fitted dinghy. Through stories they will enjoy the silliness and appreciate the cleverness of Seagull racers. They will learn about different styles of fishing and how one acquires the necessary skills. In addition, they will examine how traditional shark-oil barometers work. Overall, students will reflect on how the sea has shaped the ways that people in Bermuda live.



## Surrounded by the Sea

Living on an island, Bermudians have a close relationship with the sea; it isolates and unites and sustains us. We harvest wonders from the sea and use the goods and ideas it transports to the island. We enjoy its challenges as sportsmen and fishermen. Arts related to the sea are some of the earliest traditions in Bermuda. They include ship and boat building, sail making, piloting, wrecking and salvage, fishing, diving, specimen collecting, whaling, transport, and racing among other things. Bermudians are clever in continually adapting these skills to fit the challenges and opportunities of our unique environment.

Up until World War I, the sea was the most-used avenue of transport between and around Bermuda's islands. Small **dinghies** (usually 14 feet long) carried light loads, and larger sloops (commonly 18-30 feet) carried heavier loads. But construction of better roads and new bridges reduced the sea's role in transporting people and goods within Bermuda. With the introduction of the automobile and paved roads after World War II, Bermuda's traditional watercraft were used less and less. Today there are ferries that provide transport from one point to another in Bermuda, but people primarily use cars and motorbikes to get around, and trucks carry most goods throughout the islands. Barges are still used for dock construction and for projects on islands in the harbour. Bermuda's traditional wooden boats have not entirely disappeared; a few are maintained and used by individuals for recreational purposes.



### Discussion Questions

1. In what ways has the sea shaped the lifestyle of Bermudians?
2. In your opinion, how have improved roads, bridges, and the introduction of motor vehicles affected traditional watercraft? Why?

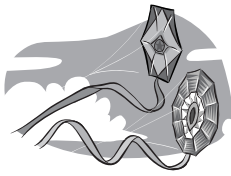
3. Do you know anyone who owns a boat? What do they use it for?



### The Shipping Industry and Bermuda

1. Look in the newspaper for shipping news. What sorts of ships come to Bermuda and why? How does the shipping industry shape Bermuda's economy?
2. Interview a manager of a shipping company about his job. What skills does he use?
3. Look in the telephone yellow pages and determine what sorts of jobs are dependent on the ocean, ships, sailing, fishing, diving, and beaches.





## Boat Building

**B**oat building began in Bermuda in the early 17th century. Survivors of the *Sea Venture* wreck in 1609 built the *Deliverance* and *Patience* to continue on their voyage to Virginia. In 1619, a **shipwright** from Holland, Jacob Jacobson, was shipwrecked on Bermuda. He was commissioned by Governor Butler to build several large boats for defence of the island. To help with the work, Mr Jacobson took on settlers as **apprentices** and taught them the



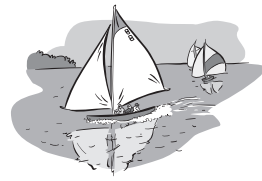
**Building a Bermuda fitted dinghy using composite strip molding method.**  
Courtesy Royal Hamilton Amateur Dinghy Club.

skills. By the mid-1600s, two of these men became shipwrights on their own. In 1661, to remedy the need for more skilled shipwrights, the Bermuda Company recommended that “. . . negroe [sic] boys belonging to the Company be put out as apprentices.” The reputation of these skilled boat builders grew and spread. Slave owners from South Carolina even came to Bermuda to study how these talented craftsmen acquired their skills.

African **bondpeople** brought to Bermuda via the Caribbean also became accomplished sailors and pilots. In 1711, reacting to worries about the balance of whites and blacks on the island, an Order in Council limited the crew on 40-foot ships to no more than six white sailors. The rest of the crew was made up of enslaved blacks. Captain Penrose of H.M.S. *Cleopatra*, in 1795, wrote “She [the ship] is mostly manned with slaves, but they are quite different from any other slaves I ever met with, being trustworthy, and good seamen, and their owners give them half their prize money.” That same year, Rear Admiral Murray arranged for the Bermuda government to buy the freedom of James Darrell, Jacon Pitcairn, and Tom Bean so they could be King’s Pilots, responsible for piloting naval ships into **anchorage**. Over the years, captive and later free black Bermudians excelled as shipwrights, mariners, sail makers, pilots, and fishermen.

Bermuda-built vessels were sought after both within Bermuda and abroad. Bermuda sloops were valued for their speed and ability to last. In 1720, nine of the 22 boats in Antigua came from Bermuda. These popular vessels were used for trade and defence. The Royal Navy used Bermudian ships as fast dispatch vessels to carry orders and as armed schooners. The Americans used them for coastal defence. Bermudians used them for trade, transport, and pleasure. Even as late as the 20th century, Bermuda’s fast boats were prized. During Prohibition they were used to smuggle rum into the United States (hence the popular name for these swift vessels, “rum runners”).

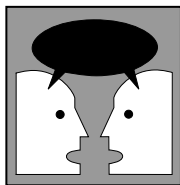
Bermudians’ success in the marine trade is due in part to the abundance of cedar trees (*Juniperus bermudiana*) that grew on the islands until a **blight** hit in the mid-20th century. Shipwrights in Bermuda discovered that Bermuda cedar made a great material for building boats. It is resistant to rot, relatively lightweight, stable, and was readily available. Since the first boats were built in Bermuda, cedar was used for virtually everything: **keels**, the curved frames (timbers), planking, and at times even **spars**. Woodworker Fred Phillips talks about the use of cedar in building ships.



*The reason [cedar] was so successful for shipbuilding is it sort of acts like a hardwood. It's a pretty tough wood . . . hard enough to do the job, but light enough to make [boats] fast. [Bermuda cedar sloops] were very fast and the old British oak ships were all oak, and heavy, very heavy, but very durable. The cedar ships were fast and strong enough to be serviceable, [but not] as tough [as oak]. I mean, a cannonball hitting a cedar ship, it would [splinter apart]. A cannonball hitting an oak ship often bounced off. . . . The cedar ships became very successful as dispatch ships because they were superior in speed. Speed was the essence.*

As cedar became less plentiful, imported planking took its place. Since about 1950, Bermuda cedar has not been cut and milled for commercial boat building. Today, its scarcity makes it an expensive material for boat building.

Unfortunately, no one professionally builds traditional plank-on-frame wooden boats in Bermuda any more. There are skilled Bermudian shipwrights capable of building these boats, but it is no longer practical to build them because of high labour and material costs. Many boat owners prefer fibreglass instead of wood because it needs less maintenance, which means less labour and materials are required in the annual upkeep of a boat. The last boat building of any scale was in fibreglass during the 1970s and '80s. During this same period, just a few 14-foot working dinghies and a couple of pleasure yachts were built in wood. Some shipwrights still use their skills to repair and restore older wooden boats, but the last professional boat builder to build traditional wooden fitted dinghies using his own design was David Geary Pitcher, Sr of St David's Island, who died in 1999. Today, the art of wooden boat building in Bermuda is in decline.



### Discussion Questions

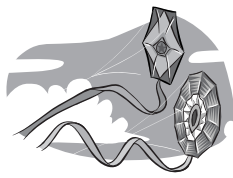
1. Why were ships in Bermuda originally built from cedar?
2. What are the primary differences between a ship made from oak and one made from Bermuda cedar?

3. What happened to the cedar trees that once covered the island?
4. Today, could a young boat builder make a living building traditional wooden boats in Bermuda? Why or why not?
5. In your opinion, why have most of the recent fitted dinghies been built abroad?
6. Why is it thought that the art of boat building in Bermuda is dwindling?



### Researching Bermuda Boat Building History

1. Research boat builders of the last century. Who were they? What did they build? Are their companies still in operation today? If not, why did they stop operating?
2. Interview builders who repair old wooden boats. Find out what skills it takes to repair the boats. How did they learn their skills? Why do they enjoy repairing these boats?

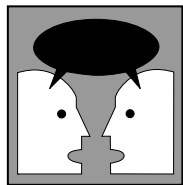


## Building a Punt – It Is Kids’ Play!

**M**any folks use punts for fishing close to shore. Although these boats are simple to make, today not many children try building their own punts. Roderic Pearman, who grew up in Somerset, describes how, as a child, he and his friends used to construct punts and enjoy them:

*We could usually put our hands on tools and we would use those tools to build boats that we rowed or sailed in Herman’s Bay. The boats were frequently the punt type: rectangular boats about five or six feet long by up to three feet wide. The planking we could always get from boxes from Mrs Bradford’s shop, but the sides always proved to be a problem. So we had to go scavenging around the neighbourhood to find the five- or six-foot planks that we could use as sides. After we found those, we were able to construct these punts. They were held together with nails and putty and any paint we could find. The paint was purely practical to protect it from leaking. Colour was not important.*

*These boats didn’t leak and were strong enough to hold and withstand the treatment we would give it in Herman’s Bay. We used to row it, turn it over, anything any 10- or 12-year-old boy would do in a punt to have fun. Ducking people. It would have to be a pretty rugged craft to withstand the treatment we would give it.*



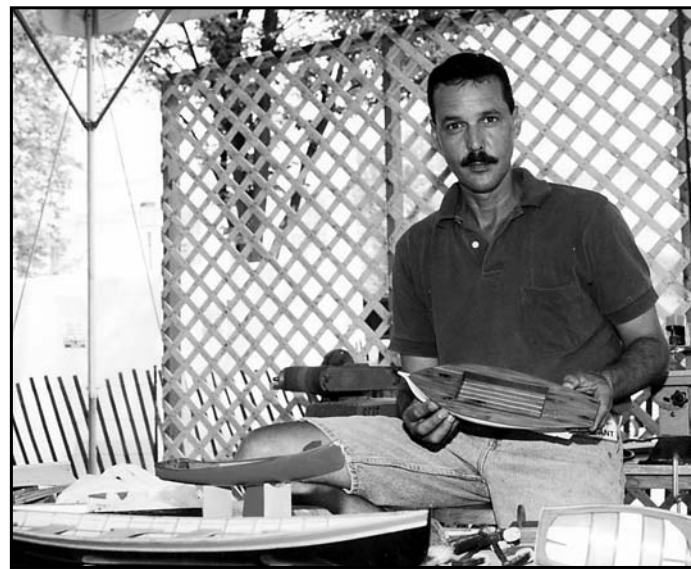
### Discussion Questions

1. Have you ever been in a punt? How did it feel? Is it a stable boat?
2. What are some stories that you have heard about punt fishing?
3. Why do you think building your own punt is not as popular an activity for youth today?

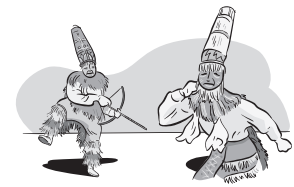
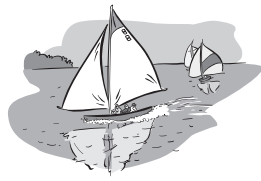
### Activities

#### Build a Model Boat

1. Based on Mr Pearman’s description, draw a plan for a punt. Mark the measurements of each piece on your drawing. Make a list of all the supplies you would need to actually build it. Figure out what it would cost to build it.
2. Talk to boat builders, go to the library and research boat plans, and design your own boat.
3. Look at the *Bermuda Connections* video and listen to Michael Hooper talk about and show the model boats he builds. Note down the steps he takes in making a boat, and what materials and tools he uses.
4. Mr Hooper believes, “If you can build a boat, then you can build anything.” Discover why he thinks this by building a scale-model boat from wood based on your design.



**Michael Hooper, of Warwick, builds to-scale wooden model boats.** Courtesy Departments of Community and Cultural Affairs.



## Racing and the Bermuda Fitted Dinghy

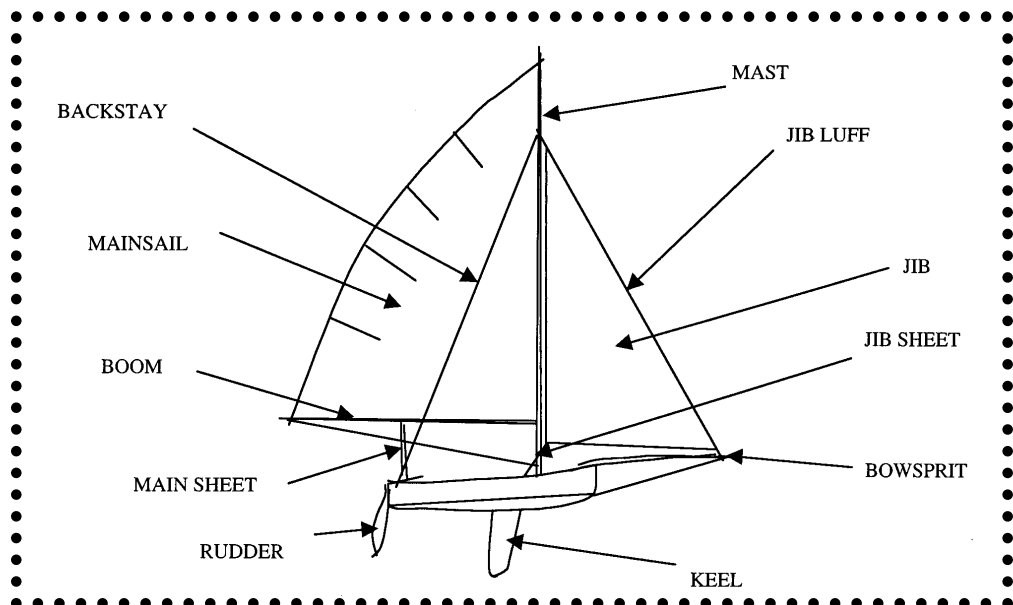
**T**here is more than one version of the story of how dinghy racing began. One version says that officers in the Royal Navy stationed in Bermuda during the 18th century started competitive racing in **sloops**, **gigs**, and possibly dinghies. This activity was gradually picked up by Bermudians and gave birth to a still-active racing tradition. Another version, as told by dinghy sailor Mike Tatem, is:

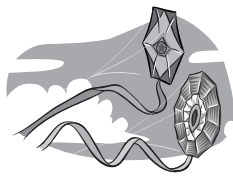
*Fishing boats used to go out taking the little dinghy boats behind them. [They would] load up the little dinghy [and it] would sail into the town, into Hamilton or St George's or whatever, and sell the fish. If you were the last dinghy in, you didn't sell all your fish because the other guys had already sold theirs and everyone's going home. So it basically started out with, "Well I'll stay a little bit longer out here catching fish, but I'll put up more sail [on my dinghy to make it sail faster] and I'll still beat you in." Bermudians are like that when it comes to boats—"My boat's faster than yours."*



**Many blacks were involved in fishing, boat building, and sailing. They excelled in the arts of the sea for much of Bermuda's history. Many families have traditions and stories related to the sea. See Jolene Bean's website to read stories about her family's fishing heritage: [www.uncle.com/jdbean](http://www.uncle.com/jdbean).** Courtesy Bermuda Maritime Museum.

Look at the photographs of dinghies and locate the parts marked on this diagram. Diagram by Anson Nash.





Bermuda's first recorded boat races appeared in the *Bermuda Gazette* in the 1780s. The paper reported teams of enslaved black sailors competing against each other for their masters' honour, prize money, and perhaps a turtle dinner.<sup>1</sup> The influence of racing changed the design of some boats from their working origins to craft suitable only for racing. The most famous example of this is the Bermuda fitted dinghy.

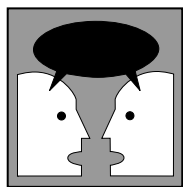
The shape of the sailing dinghies, particularly the hull and transom, has changed dramatically over the years due to the evolution of the dinghy from a steady and sturdy working vessel to an extreme racer, built for speed more than stability. Mr Tatem describes how the hull design has changed to make the dinghy a faster racer but an unreliable workboat:

*The hull used to be a very deep affair, and now it's almost like a bowl and flat if you look at the boat from behind. The idea is to get the boat on top of the water and skip across rather than trying to plough a path through it. They "plane" on occasion, where they get on top of the water. But when they do that, you have no control over it. And you really don't want that to happen because in the next 30 seconds something will go wrong, and it'll end up sinking. And it does every time.*

Today a typical dinghy measures 14 feet long with a **mast** size of from 25 to 40 feet and a sail capacity of between 300 and 1,000 square feet. When the dinghies are taken out to race, on board are masts of three different lengths and sails to fit each mast depending on the wind speed. The dinghy is rigged while stationary, alongside the tow boat or the dock. Masts and sails are rigged according to the weather conditions. For example, with higher winds, you'd use the shorter mast and sails; in light winds, you'd use the tallest mast with maximum sail. Popular races of this small vessel are held within the islands starting on Bermuda Day (24th May) through 9th September.



**Fitted dinghy racing.** Courtesy Bermuda Maritime Museum.



### Discussion Questions

1. Explain how the use and shape of dinghies has changed over time.
2. What effect do the design changes have on the dinghy's ability to sail?
3. Is competition a good thing? Why or why not?



### Collecting Origin Stories

1. Interview sailors, retired dinghy skippers, or crews about the origin of dinghy racing. Also, interview historians at the Bermuda Maritime Museum. Find out if racing fitted dinghies is the oldest continuous sport in Bermuda. When did it officially start?
2. Compare the stories you collect. What parts of the stories are similar and which are different? Make a Venn diagram to help you see the similarities and differences in the stories.
3. Draw pictures to illustrate the stories you collect.

<sup>1</sup> From *The Royal Gazette*, Newspapers in Education Supplement: Made in Bermuda, December 12, 2000.



Fitted dingy racing, 24 May 2000. Courtesy Departments of Community and Cultural Affairs.

## Without a Good Team You Are Sunk

**S**ailing a Bermuda fitted dinghy takes skill and a team that works well together. Fitted dinghy skipper David Hillier and his brother Brian, of St George's, have been racing fitted dinghies for about 25 years. David emphasises the importance of a strong team when racing a Bermuda fitted dinghy:

*I like to have four good people on the boat. Then I can work around the others. In other words, you've got six crew [members]. I could have two rookies [new sailors] in the boat, but I would rather sail with four good [experienced] people, [especially the] mainsheetman [and the] jibsheetman. They dictate to me how I steer. The sail is so powerful. If the jib is in too much I don't have any handling [control with the tiller]. If the main is in too much, we roll over, [fill with water, and all the crew are swimming].*

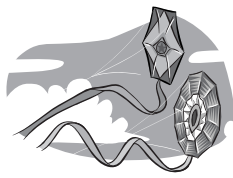
*Teamwork is vital . . . I am in a very happy position now in that I have a good team. I've worked on them. I've taken a crew of like nine or 10 and I'm schooling four so that they can do any one job . . . [Usually I have a crew of four to six.] It's pretty tight in a 14-foot dinghy. You have to be pretty good friends. Close buddies—both the guys and gals. [The team] can change every year. That's been our biggest problem.*

Mr Hillier, with a little help from dinghy sailor Anson Nash, of Somerset, further explains the different positions in the crew, the importance of each person's skill in his job, and some of the technique applied to dinghy sailing:

*You've got, obviously, the helmsman and then the mainsheetman. The mainsheetman is the engine. [The skipper who steers the dinghy] is the fellow that has to keep the boat up on the wind. You have to sail the boat really high, not just like a traditional boat because once you bear off, because of the low freeboard, the boats swamps . . .*

*What is critical is the jibsheetman. He is responsible for handling the spinnaker as well. Then the next key person is the person in the bottom of the boat. The person in the bottom of the boat is [responsible for] the backstays. [They also bail.] The backstays have to be released and taken up. The backstays are basically what holds the mast up, and when you put the backstay on, you increase the tension on your jib luff . . . If you don't have that backstay up, you will see a big bow in the jib luff like that which means that it is not [taut], and therefore I can't get up close to the wind.*





There have to be two [crew members] on either side [working the two backstays]. So, it is another critical situation, when one has to pop off and the other one has to bring on [take up]. A classic example is when you **jibe**. If the other person hasn't released and the main comes across and the **boom** hits the backstay, it stops. When it stops, the boat **keels** over and you are under water. [Dinghies fill and lay with masts horizontal in the water]. It's a vital job . . . [Working the backstays] is a two-man operation. One releases and one takes up. The way we do it is that we have a fine tune and a course tackle to a backstay. The first guy releases the fine tune and then the guy pulls the backstay off and then the other guy pulls it on [the other side] as the whole crew is moving across [the dinghy].

Then you need a **ballast** guy. The ballast guy is a big boy. Peter Rego is our guy. Peter is 260lb and he is about 6 foot 3. He goes right up next to the jibsheetman and tries to push the bow down . . . And you don't just sit. You are always on your haunches moving your weight across from left to right.

Mr Nash adds,

And you "hike out" with toes under hiking straps and only your thighs (not your behind) resting on the deck with the rest of your body held out straight over the water. The whole crew has to hike out when "on the wind" to counterbalance the weight of wind in the sails. Sailing "on the wind" means "beating to windward," that is sailing at an angle to the wind.

Mr Hillier continues,

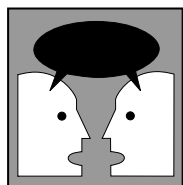
A lot of the commands on the boat will be: "slop up ahead" and "weights aft". When we say weights aft, what you do is get the boat as flat as possible [by having the crew shift their weight outward and move aft] to, basically, [raise the bow to] . . . go over the top of [the waves]. If you **heel**, the boat fills up with water. A lot of races you can win and lose by not **swamping**. When you get partially swamped the boat gets heavy, it slows down and the other dinghies they sail around you. **Bailer** can't keep up [with the amount of water coming aboard. You have to ease the dinghy's sails to allow the bailer time to remove the excess water.]



Alan Frith, Leatrice Roman and crew member rigging Victory. Courtesy Departments of Community and Cultural Affairs.

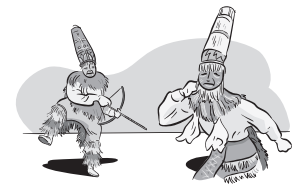
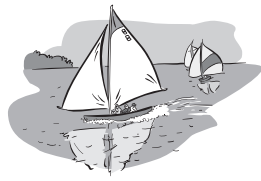
## Link

- View the segment on dinghy racing on the *Bermuda Connections* video.



## Discussion Questions

1. What does David Hillier consider to be most important when sailing a fitted dinghy?
2. What techniques make for smoother sailing of a fitted dinghy?
3. What are the different crew positions on a fitted dinghy team? What does each crew member do?



4. Explain how the different crew members work together to race the boat.
5. How does the distribution of the crew's weight affect sailing a fitted dinghy?
6. How does swamping a dinghy affect its chances of winning or losing a race?
7. Do you know anyone who is involved in fitted dinghy racing? Why do they do it?
8. Have you ever watched a fitted dinghy race? Describe this experience.
9. Would you like to race in a fitted dinghy? Why or why not?
10. What is the lingo of dinghy racing? What do dinghy racing words such as *on the wind*, *beating*, *clean air*, *dirty air*, and *tucker out* mean?
11. Are any of these words used in other contexts?



Fitted dinghy race. Courtesy Departments of Community and Cultural Affairs.

#### FITTED DINGHY CLUBS

##### WEST:

Sandys Boat Club  
(*Challenger II*)

##### EAST:

St George's Dinghy and  
Sports Club (*Victory IV*)

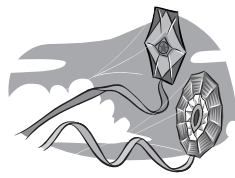
##### HAMILTON:

Royal Bermuda Yacht  
Club (*Contest II*), and the  
Royal Hamilton Amateur  
Dinghy Club (*Elizabeth II*)

### Activities

### Interview Questions

1. Using David Hillier's description, make a list of fitted dinghy crew positions with a definition of what their duties are. What skills do you think each position requires?
2. Which position would you want if you were part of the crew? Make a list of questions you would want to ask someone in that position before you would take on the position.
3. If you were interviewing David Hillier about racing fitted dinghies, what would you ask him?  
Working with a partner, make a list of six questions and explain why you would ask those questions.
4. In a class discussion share your questions and reasoning. What questions do other students pose?
5. Conduct interviews with fitted dinghy racers. Be sure to ask them for their favourite stories that relate good and bad dinghy racing experiences.
6. Write a short story that captures the excitement of fitted dinghy racing. Include in your story dialogue that uses the lingo of dinghy racing.



## It Is a Lot of Work

**S**ailing a fitted dinghy is exhilarating and fun, but it is also a lot of work. David Hillier says that he loses crew members because it is such a strenuous activity. Sailor Mike Tatem, of Somerset, explains:

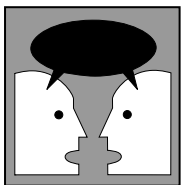
*Not everybody is too keen to do this. It is a lot of work. You have to be committed. A day of racing involves: taking the boat out; getting it in the water; taking all the masts, booms, sails, spinnakers, and everything else; loading them onto a big fishing boat we use for a mother boat; turn it out there; and rigging it while you're in the water—which is not easy. Then at the end of [the race] is [more] hard work: you've got to take it apart. Take it all back to the club, wash it down, and put it away. It's a long day.*

*And you've got to practise in between. We race every other weekend, every other Sunday from May 24th until the end of September. And in between that we have practise days. You've got to actually start practising before the season begins so that everybody is in tune with each other. Everybody on the boat has to know everybody else's job because they might get thrown overboard and you have to fill in for them.*

*It's a demanding sport. It's time consuming . . . You go out in the morning; you spend the whole day out on the water; you come back. The sun beats you up; the boat beats you up; and your age beats you up.*



**Fitted dinghy race.** Courtesy Departments of Community and Cultural Affairs.



### Discussion Questions

1. Mr Tatem says that during dinghy racing you are beat up by the sun, the boat, and your age. What does he mean by that?
2. Why do people give up racing fitted dinghies?
3. Why do people like to race fitted dinghies? What rewards do they receive for the work and effort?
4. Would you like to race a fitted dinghy? Why or why not?
5. What could be done to make fitted dinghy racing popular among Bermuda's youth?

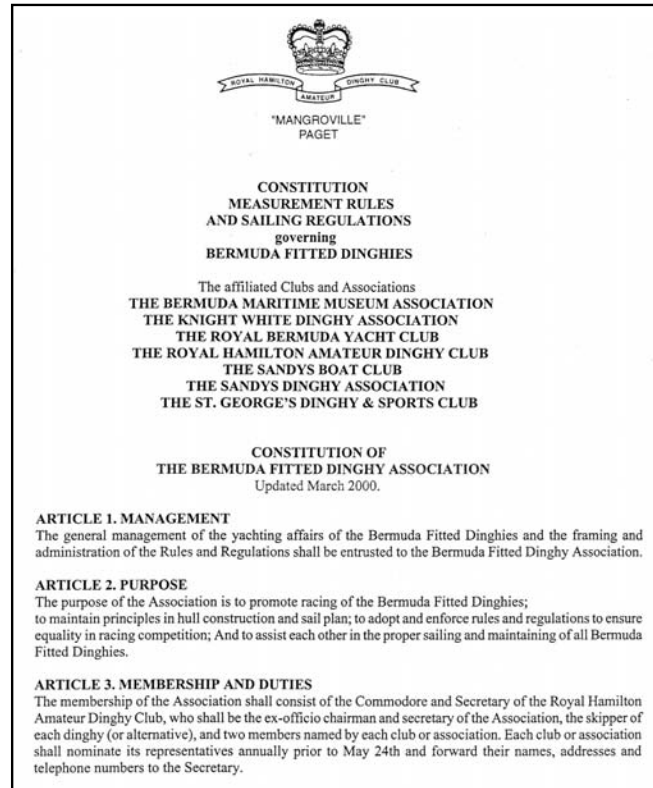
### Activities

### Designing a Fitted Dinghy for Racing

1. Visit the Bermuda Maritime Museum, boat and yacht clubs (permission required, check with each club's Rear Commodore or Secretary) and take a close look at fitted dinghies. Talk with those who race, build, or repair fitted dinghies. Then create a design for your own fitted dinghy.
2. Name your dinghy and explain why you chose that name.



3. Create a list of jobs for crew members for your fitted dinghy and assign crew members to each position.
4. Find out the rules governing Bermuda Fitted Dinghy Racing. (A copy of the rules can be obtained from the Secretary, Royal Hamilton Amateur Dinghy Club, Mangroville, Harbour Road, Paget. Each dinghy club will have a copy.) Compare them with the international yacht racing rules that all other sailing class boats race under. Which fitted dinghy racing rule is different?
5. Ask racers what a new or modified fitted dinghy must have done to her before she is eligible to race (even if she was built to comply with the rules of the Bermuda Fitted Dinghy Association).
6. Find out the race calendar for the year. (It is published in the newspaper in the spring.) How many races are there? Where do they start? At what time?



Courtesy Royal Hamilton Amateur Dinghy Club.



## Collecting Racing Stories

### FIRST FIND OUT

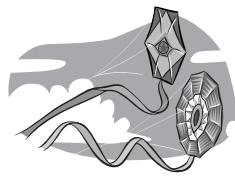
1. Check out the boat clubs. Who are the members? Where do they meet? What does the club's crest look like? How does the design reflect the character of that particular club?
2. Interview fitted dinghy sailors about their experiences racing.
3. What are some of the common elements among the stories?
4. Ask if you can copy any photographs they have of the races, their crews, and their boats. Compile these with the stories.

### THEN CREATE

1. Make a fitted dinghy racing story book or website with the pictures and the stories.
2. Chose one of the racing stories and write a radio play based on it. Remember to add as much descriptive detail as you can so that your listeners can really visualise the race story as they listen.
3. Working with other classmates, record your radio play and play it for an audience.



Notice what icons are used on the crests. What message do you think clubs are trying to express in their crest? Try designing your own boat-club crest; what is your message and what symbols will you use to express it?



## Seagull Racing

**A**nother popular sport is Seagull racing, which takes place throughout the year. Both men and women participate in Seagull racing, as it is not quite as demanding as fitted dinghy racing. This is because “Seagull” actually refers to the low horsepower outboard engine rather than the boat. Seagull racer Mandy Petty, of Warwick, describes Seagull racing:

*A Seagull is a British [outboard] motor, and you have a little boat that you put the Seagull on the back of. The boats look kind of like the shape of a banana boat. They're long and narrow.*

Tim Ward, who grew up in Hamilton Parish, enjoys the challenge of figuring out the best way to put together engine parts to make a high performance boat for racing. He explains how Seagull races got started:

*Seagull racing in Bermuda originated around 1969 or early '70s. As we understand, it developed from an argument of two friends sitting at a dock discussing how fast their boats were. We figured they decided to conduct the race using the Seagull engine because it was an equal horsepower engine and since then it's sort of developed into an annual thing . . . [But then] the [British Seagull] company went bust, so we ended up having to cannibalise other engines to make new engines out of them. It's been a lot of fun.*

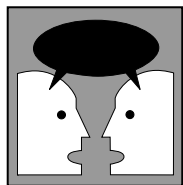
The annual Round the Island Seagull Race was started in the 1960s by the Devonshire Bay Anglers Club and continued until the late 1980s. All but one of the races started and finished at Devonshire Bay.

Mr Ward explains how modifying the original Seagull engines now has become part of the racing strategy and tradition:

*Originally when they started racing you'd just go out and get any boat and race it and you would use the stock engine. But as the competition got fiercer, people began modifying their boat's engine. At first it was law that you couldn't modify the engine, but people would do it. [They] would [modify] the internal organs of the engine so you wouldn't see anything from the outside. It became hard to monitor that. So eventually they conceded to the fact that people will tinker with engines and since then [Seagull racers] have been modifying them. They've put expansion pipes on them and all sorts of things.*

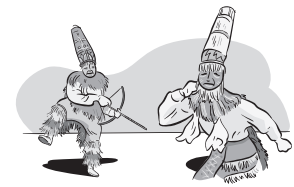
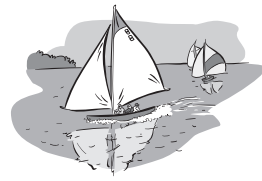


**Andrew Petty working on a Seagull engine.**  
Courtesy Smithsonian Institution.



### Discussion Questions

1. Where did Seagull racing get its name?
2. Why are women more involved with Seagull racing than with fitted dinghy racing?
3. In your opinion, how has the limited horsepower of the Seagull engine affected the design of the racing boats on which they are used?
4. What sorts of tricks do Seagull racers use to better their boat's performance?



## Activities

### Seagull Engines

1. Invite a Seagull racer to your classroom to explain how the engine works. Ask him to take one apart and show you how it fits together. Ask him to explain how making different changes to the engine affects the boat's performance.
2. Visit a Seagull boat builder and find out what plywood building technique is used to build the majority of Seagull racing boats. Make a list of the steps involved in building a Seagull boat and the materials needed to do so.
3. Try designing your own to-scale Seagull boat using the plywood building technique shown to you by a boat builder.

## Seagull Stories

All sailors have stories about their races. Sometimes they describe how they won or what obstacles they overcame to finish the race. Sailor and boatbuilder Anson Nash describes how he got involved in Seagull racing and how his first race turned out:

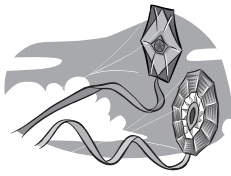
*I was once involved with this crazy passion. The first time I got involved with it [was as a result of] my father's little 12-footer. [He] had problems bending the plywood panels on the bottom and kind of gave up. It was the Sunday before the race, a week before, and we [Nash and his brother] decided to give it a go. By kerfing the panels—this is a series of shallow parallel saw cuts—we got them to bend around. We worked in the evenings because we had regular day jobs, [and we] got it together. Friday night, we hoisted her up and painted her inside and out. Saturday, loaded her up—fortunately she was dry enough to work. [We] steamed down to Hungry Bay and spent the night there and the next day, steamed around for the start of the race, which was out of the Devonshire Bay Anglers club at Devonshire Bay.*

*We started this race having never raced before . . . We set her up and we're going reasonably good. We got more than halfway around. Generally one person steers while the other one acts as engineer and pumps fuel because you have to keep the engines pumped up with fuel. You have a fuel line running from the five-gallon container to the little tank on the outboard Seagull. We would alternate [positions] every half-hour. I was steering at the time and all of a sudden the engine just quit. And I thought, "Oh dear, we have a problem." It's always handy to carry tools. So I got the tools out and started taking the engine apart. I had the engine all apart and found nothing wrong with it. And so I wondered what's going on and I asked my brother and he said, "I had to take a pee, so I stopped pumping." After cursing a bit, we got going again, and we got third in that race somehow or other.*

Sailor Mandy Petty's story of her first Seagull race is a good reminder that carrying life vests are a must when boating.



**Mandy Petty and friend with her Seagull racing boat. Mangrove Bay, Somerset, November 2000.**  
Courtesy Departments of Community & Cultural Affairs.



*My first Seagull race, I raced in a canoe, a canoe that had a flat back with my little Seagull motor on the back. The name of the canoe—we called it Double Trouble. It was me and a girlfriend of mine [racing her]. It was a flat calm day. We were going along [when my other] boat, a bigger boat, a little ski boat named Sassy came along. Someone was driving Sassy for me that day, and she came flying up the side of us and tipped us right out of the boat. So it was a flat calm day and we ended up flipping out of our boat. So then we were out of the race . . . For that day, I got a life jacket as my prize.*



## Collecting Racing Stories

### FIRST FIND OUT

1. Interview sailors about their racing experiences. Record these stories.
2. Compare the similarities and differences in the stories.
3. What makes the situation a success? Is it ingenuity? Humour? Luck?
4. How does the storyteller structure the story? Does he include a description of the places, objects, or people involved? Does the story include action? A problem? A clever solution?

### THEN CREATE

1. Create a book or website of the stories.
2. Make up a nickname for the sailor based on the story he tells you.
3. Draw one picture to illustrate the story, give it a title, and see if others can understand the story just by looking at it.
4. Make comic strip books that illustrate and tell the stories.

## Going Fishing

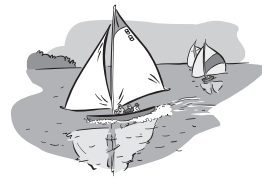
**F**ishing has always been a part of Bermuda's culture—providing food, income, professions, and recreation. Both men and women fish, and children often learn by accompanying family or friends on fishing outings. There are many types of fishing, including throwing a line off the rocks; punt, net, hook-and-line, fly, spear, drift, bottom, and long-line fishing; recreational and commercial lobster trapping; and sport and commercial offshore **trawling**. A good fisherman knows something of science, marine biology, history, engineering, economics and marketing, not to mention swimming and diving. It's the combination of skills that enables someone to make a profession out of fishing.

Fisherman Llewellyn Hollis, of Pembroke, describes how he got his start in the fishing business:

*I came from a fishing family of three generations: my mother, grandmother, their fathers, my father was a fisherman. I was made to go fishing when I didn't even want to . . .*



**Llewellyn Hollis and friend repairing a net.** Courtesy Llewellyn Hollis.

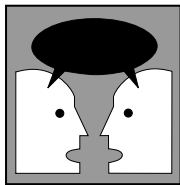


*I started off at five, and [when] I went to elementary school, [fished during] the summer, Easter, and Christmas holidays. Being as I lived close to the bay, which is Boss's Cove, I would go out with various fishermen, and that helped me learn various types of fishing. Mr Hollis also learned fishing skills from his grandmother and mother. He remembers,*

*Many an evening I would come home from school and find my mother and grandmother sitting on the rocks, line out, catching bait. My mother, who is now 87 years old, still fishes off the rocks today. They knew what time of the month, what phase of the moon, to fish. And it means a lot. If you want to catch a grey snapper, you don't try to catch it on the dark side of the moon. You wait until the moon is on the coming phase.*

*Many years ago, we had the old cruise ships that used to come into Bermuda, and my grandmother knew the easy way to catch fish. All you had to do was row your little punt out, take a piece of your curtain out from your window, make a dip net. As the ships went by, she would dip the fish up that came up in the surge. So that's [one way] we used to get our fish years ago. We [didn't have] to put a line overboard. Grandmother's curtain used to catch the fish.*

*My grandmother was a person that fished for relaxation. It was her main hobby. She'd soon as do fishing than do anything at all. The other thing about fishing, you can't fish without bait, and she knew how to catch her own live bait to catch larger fish with. She would take a five-gallon bucket, fill it with salt water, add the little grunts or shad that she caught in those days. Every so often she would change [the water] to keep it fresh, to keep the fish from dying.*



## Discussion Questions

1. How did Llewellyn Hollis begin learning to fish?
2. What did he learn from his mother and grandmother about fishing?
3. What did he mean when he said, "Grandmother's curtain used to catch the fish?"

What else could you use as a net to catch fish?

4. Does anyone in your family fish? Who? How did they learn?
5. What is the advantage of using live bait in catching fish?

## Activities

### Fishing off the Rocks

1. Find someone who fishes off the rocks. Ask them to teach you their technique.
2. Using words and drawings, create an instructional sheet explaining how to fish for bait off the rocks. Be sure to list all the equipment and supplies you will need.
3. What equipment and materials can you make yourself or find around your home?
4. Go to a fishing equipment store and check the prices of all equipment and supplies on your list. How much will it cost to outfit yourself for your fishing trips?



**Fishing off the rocks is a pastime of the young and old, Devonshire Bay.**  
Courtesy Department of Communication and Information.





Hauling in fish with a net, Boss's Cove. Courtesy Llewellyn Hollis.

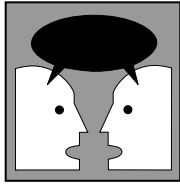
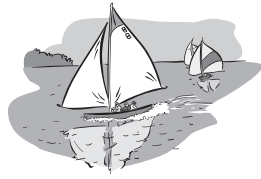
## Net Fishery

**A**lthough nets are not made totally by hand anymore, some of the skills used in net making are still used in custom hanging and repair. St David's Islander Fred O'Connor, who "slipped his moorings" (passed away) in 1990, was the last person to regularly make nets by hand. These were used by mullet permit holders for taking mullet and by a few commercial fishermen for taking jacks (mackerel). Now commercially manufactured net is exclusively used. It can be bought in any length or depth, made from any type of twine, and even with cork floats and lead weights already attached and ready to use. Although they use the commercially made nets, most fishermen hang the floats and weights on their nets themselves, and many fishermen still repair their nets by hand.

Llewellyn Hollis uses a net when fishing inshore and at sea. He describes the intricacies of net fishing:

*Net fishing is a fishery on its own that you have to be taught by another net fisherman. You don't just go and buy a set of nets and go out and put your nets over [a school of fish]. You have quite a few obstacles. If you don't know what you are doing and you throw the nets over them in too deep of water your cork line will go under and you will lose your school of fish. The other thing is if you throw the net over on a rocky piece of bottom you're going to have to dive all day to clear the net. Most fishermen know what areas are rocky. They prefer to put the net over the piece of bottom [where] they have less trouble working the nets down to the shore. On a typical day's net fishing, we normally leave home roughly 4.30-5.00 in the morning to catch the first feed of the fish. They normally feed in the early hours of the morning, and then they feed again in the afternoon. Most fishermen that I learned under, they would go home mid-day if the tide wasn't right, and come back in the afternoon on the right tide. That fish normally plays to the surface on the moon phase of the tide.*

*The size of the catch will vary from maybe a hundred to up to a few thousand fish. I've had 3,000 fish in a net. We are taught how to pen the fish up in the net. We have a special piece of net called a piece of trammel net, and we leave the fish in the trammel net for a few days. We have a time limit that we can leave the fish in the net by the Fisheries [Department]. Once the time is up, we have to take the fish out of water. Most fishermen prefer to leave a portion of the fish in water providing that the area is safe—no boat traffic and not blocking any dock entrances. We leave them in the water, take another net, run it on the inside of the net, and take out as many fish as we feel we can sell on that one day. That way the people get fresh-caught fish.*



## Discussion Questions

1. Can anyone go net fishing? Is it as simple as buying a net and tossing it in the ocean? Why or why not?
2. What do net fishermen have to be careful about?
3. When is the best time to go net fishing?
4. How do the fishermen assure that the fish sold is really “fresh caught?”



## Net Fishing

### FIRST FIND OUT

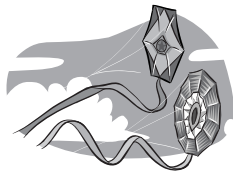
1. Either invite a net fisherman to your classroom, or see if one will allow you to accompany him when he goes out fishing.
2. Ask him to demonstrate how to cast a net and how to set a net.
3. Ask him to show you how to repair a net.
4. Ask him what constitutes a good net dinghy. Find out what are the two traditional methods for propelling a dinghy while setting a net.
5. Find out what kinds of fish he catches and at what time of year these fish are caught.
6. Ask him to tell you stories about times he went out fishing, for instance a time when his net got tangled or when he caught his biggest load of fish.



Repairing a net. Courtesy Llewellyn Hollis.

### THEN CREATE

1. Draw pictures to illustrate the fishing stories you collect.
2. Write a play based on one of his stories. Perform it for your classmates.
3. Talk with your mother and others who cook about how they prepare the types of fish net fishermen catch. Write down their recipes and bring them to class.
4. Create a calendar with a recipe for each month that corresponds with the type of fish caught during that month. Use your story illustrations as the pictures for the calendar. Maybe even include some of the story narratives on the calendar pages.
5. Hold a fish fry party and invite your families. Invite the fishermen who you interviewed to come to the party and share their stories; and demonstrate casting, setting, and repairing nets. You can sell or give away your calendars at the party.



## Selling Fish

It used to be that you didn't have to go to the store to buy fresh fish, milk, or other necessities. Wandering vendors would make it easy to buy fish just by stepping out your door when you heard the sound of a conch shell being blown. Mr Hollis describes how he sold fish and milk as a young boy.

*When I first started selling jacks [mackerel] on the road, they weren't even my own jacks. I was a schoolboy going to school and I pushed a wheelbarrow around and blew a conch shell. I lived in the area of Spanish Point. I blew a conch shell from Spanish Point all the way on the north shore down to Court Street in Hamilton and come back up Cox's Hill with an empty wheelbarrow. And that's how I used to make five shillings for spending money. It was very interesting; I got to know all the people 'round the neighbourhood. One of the other reasons why fishermen picked me to do it [was], in those days, I was also a milk boy. So I knew every house in the neighbourhood. I could knock on the doors, or blow the conch shell, and they would come out and buy fish from me.*

*Normally when we catch schools of jacks, to make it easier to sell the jacks, we sort them, put two or three fish in a bag, weigh them, and work out the price. We didn't have bags in those [schoolboy] days. We'd take a strip of palmetto leaf and a knife, cut a slit in the fish tails, or put it through it's mouth and come out through the gills, and [then] hang them on the scale to weigh. We used the palmetto leaf for many things. We also used the palmetto leaf to swat the flies away. Also some of the fishermen used the palmetto leaf to drag behind the dinghy to attract the schools of fish.*



**Robert (Captain Bobbie) E. Burcher, a self-employed commercial fisherman in the 1940s, displays the day's catch for sale behinds the flagpole on Front Street.** Submitted by Inas (Burcher) Shabazz.

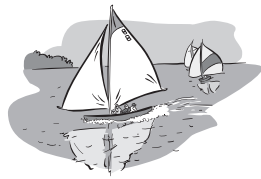


**Llewellyn Hollis blows a conch shell.** Courtesy Departments of Community and Cultural Affairs.

### Activities

#### Shell Musical Instruments

1. Borrow a conch shell and try blowing it. Check to see if it has a hole cut in it or it won't make much of a sound. (Remember that conch is a protected species, so do not take one from the sea.) Practise until you can make a good sound. How is it like or different from other wind instruments, like a bugle, trumpet, or flute, which you blow into to make music?
2. Try making different sounds with the conch shells. Conduct an experiment: see if different sized conch shells make different tones.



## Activities

### Palmetto Leaf

1. Make a paper fish from construction paper and decorate it. This can be a flat fish or a three-dimensional one. One way to make it three-dimensional is to glue or staple two fish shapes together at the edges and stuff the pocket between with scraps of paper.
2. Now take a strip of palmetto leaf and fit it either through a slit cut in the fish's tail or through the mouth and out the gills. Hang these fish off a pole or on a scale.
3. Ask members of your families and neighbours about other ways the palmetto leaf has been used. Write down a list of ways with descriptions and bring them to class. Learn one method and teach it to your classmates.

## Shark Oil

**S**hark oil, made from a shark's liver, serves as a traditional barometer for fishermen in Bermuda. A barometer measures atmospheric pressure and indicates changes in the weather. There are special ways to prepare the shark oil for such uses. Some say that the shark has to be caught during the week just before the moon is full in the months from June to September so its liver will be clean and white. Some believe that the liver must be from a puppy shark that is four- to six-feet long.

According to the Bermuda Maritime Museum, the liver is hung in the sun so the oil can drip out and be collected. It is then filtered, bottled, and firmly corked with a wax seal. Some say that the bottle should only be half full. Many believe that the oil needs to hang in the shade for two weeks before one attempts to read it. Whichever tradition you follow to make a shark oil barometer, it takes great skill to read it correctly and predict the upcoming weather.

Fisherman Llewellyn Hollis explains what he thinks is important in getting a shark for a shark oil barometer:

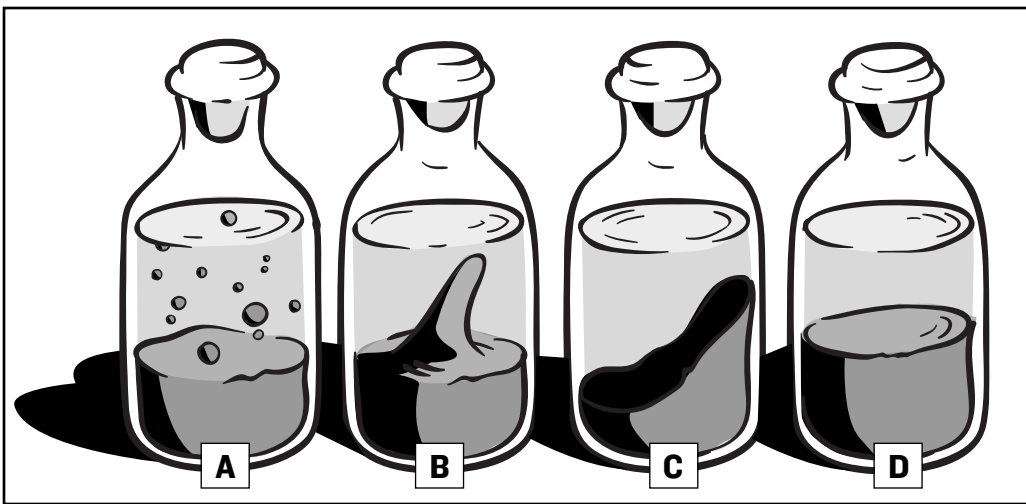
*Shark oil is a big, long process. First of all you have to catch the shark. And it makes a difference what phase of the moon you catch the shark in. If you catch the shark on the dark side of the moon, it tends to have a dark liver. If you catch the shark on the bright side of the moon, it tends to have a nice white liver. Also, I find, that the best month to get sharks and the best condition that they're in for getting barometers from is the month of September. The way I do it is I hang the liver out in the sun and let it drip into a non-metallic bowl, glass or plastic. I transfer the oil into little glass cylinders or vases and secure the top with cork or plastic.*

Mr Hollis says that most fishermen have a shark oil barometer hanging outside their house that they may use in combination with modern barometers to forecast the weather. He explains how they work:

*They have to be hanging outside to work. Most the time when you get a weather change, the temperature drops, or the pressure drops, [and] the barometer starts to change colour. It goes from a clear to a milky substance in a matter of hours. People who know how*



**Shark oil.** Courtesy Department of Communication and Information.



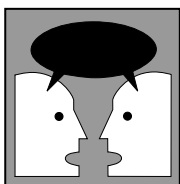
**What does each of the four shark oil jars above tell us about the weather at the time they were drawn?**  
 Drawing by Daniel Frey, based on Bermuda Maritime Museum exhibit drawings.

to read them a lot better than me, they will see a spiral rise from the bottom up to the surface when we are getting a hurricane or a storm. [This is] something that you have to be taught. In *The Bermudian* (October 1973), Eric Johnson wrote about the different appearances of shark oil:

*On Bermuda's numerous clear, calm days, the oil is as transparent as water, with a thin layer of sediment lining the bottom. If the winds increase from one direction, the sediment banks itself on that side of the bottle. Foul weather is forecast by the oil taking on a cloudy appearance as the sediment is stirred up. The experts can be even more specific in their forecasts by examining peaks and valleys in the sediment or crystals forming in the neck of the bottle.*

He goes on to share a story told by Gilbert Lamb:

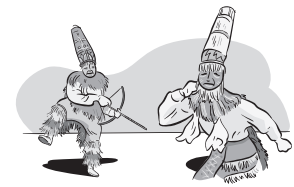
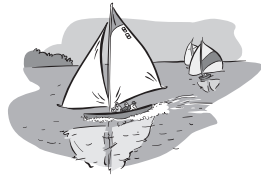
*"Of course, the first sign of your hurricane is the ocean swell," Lamb admits, "but later, the scum in the shark oil makes up like a mushroom." The strength of Lamb's shark oil forecasts once won him a case of beer from a young pilot stationed at the U.S. Naval Air Station here. "The base commander brought this young flyer to see me," Lamb says with a faraway grin. "He said the lieutenant and his crew had just flown through a hurricane which would hit Bermuda in the morning of the following day. I laughed in their faces. I looked up at my shark oil right there in front of them and said, 'If we have a hurricane within the next 48 hours, I'll drink that shark oil.' " Lamb's shark oil stayed in the bottle, visitors in Bermuda continued to frolic on the beaches under clear skies, and an incredulous naval lieutenant brought Lamb the case of beer he owed him. "I'm not sayin' those navy aviators didn't fly through a hurricane," Lamb declared. "It's just that I knew and the shark oil knew that hurricane wasn't comin' here. If you study the oil right up, you can even tell when it's going to thunder or lightning. I've won ice cream from a woman in Flatts by predicting correctly when it would rain and end a drought."*



### Discussion Questions

1. What does a barometer tell a fisherman? Why is that information important?
2. Does your family or anyone you know have a shark-oil barometer?
3. Have you ever tried to read a shark-oil barometer? What did you see? What did it tell you? Was the forecast correct?
4. How do you think a shark-oil barometer works?

**ANSWERS** **A:** Cloudy with sediment—foul weather on its way. **B:** Mushroom—expect an ocean swell. **C:** Sediment to right side of the bottle—winds increase from west to east. **D:** Sediment lies flat at the bottom of the bottle—clear, hot weather.



## Activities

### Shark-Oil Barometers

1. Interview different fishermen about how to make a shark-oil barometer and how to read one. Ask them about the role of the sun and moon in making one. Compare their stories and see what common elements they contain.
2. Interview fishermen about times when they predicted the weather using a shark-oil barometer. Compare the stories—are there any common elements in them? Is a shark-oil barometer more accurate at forecasting certain types of weather?
3. Do an experiment: Get a couple of shark-oil barometers and some modern barometers and read them each day for a month at the same time. Record what they say and correlate it with the actual weather. At the end of the month make a graph to compare the results of each barometer with the actual weather. Analyse the information to see if the shark-oil barometers are consistent with one another and with the modern barometers. Which barometer is a more accurate predictor of weather?



### Reflection Activities

1. Think about how your own family engages in the arts of the sea and what living on an island surrounded by the sea means to you.
2. Write a poem or essay that explores your own relationship with the sea.
3. Create a picture (draw, paint, photograph, make a collage) that depicts your relationship with the sea.
4. Write a short essay explaining how you think future generations will use and be shaped by the sea in Bermuda.

### Links

- See Arts of Hospitality section for information on glass bottom boat touring.
- Look at the *Bermuda Connections* video segment on dinghy racing and model boat building.

## Now It Is Your Turn

Look around Bermuda! Check out the stories and traditions of other arts of the sea, such as personal, sport, commercial, and charter fishing; sail making and repairing; salvage and wrecking work; diving; specimen collecting; mullet fishing; net casting for bait; fish pots; lobster pots; rope making; ocean sail boat races; cooking seafood . . .

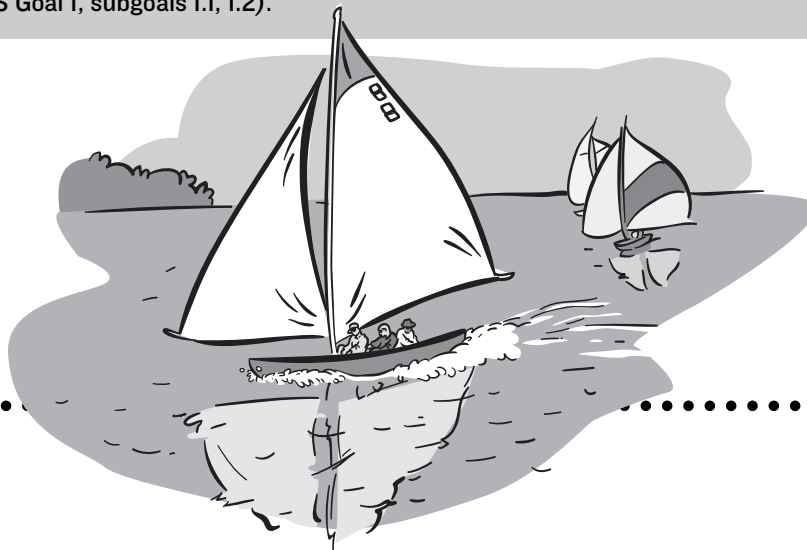
# LINKS

## ARTS OF THE SEA

### Links to Social Studies Curriculum Goals and Subgoals

By the end of this chapter, students should be able to:

- explain the history of boat building and boat racing in Bermuda (SS Goal 4, subgoal 4.1, SS Goal 5, subgoal 5.1);
- compare and contrast oak and cedar as shipbuilding materials (SS Goal 2, subgoals 2.4, 2.6);
- describe the reasons for the decline of wooden boat building and its replacement by fibreglass boat building in Bermuda (SS Goal 1, subgoals 1.3, 1.5, SS Goal 2, subgoal 2.4, SS Goal 5, subgoal 5.3);
- analyse why boat building is a dwindling art in Bermuda (SS Goal 1, subgoals 1.3, 1.5, SS Goal 2, subgoals 2.4, 2.6, SS Goal 4, subgoal 4.1, SS Goal 5, subgoal 5.3);
- understand the skill and teamwork involved in racing a fitted dinghy (SS Goal 4, subgoal 4.1, SS Goal 5, subgoal 5.2);
- compare and contrast boat racing stories (SS Goal 1, subgoal 1.1, 1.2, SS Goal 4, subgoal 4.1, SS Goal 5, subgoals 5.2, 5.3);
- describe different methods of fishing and selling fish (SS Goal 1, subgoals 1.1, 1.2, 1.3, SS Goal 5, subgoals 5.1, 5.3, 5.5); and
- learn how to make and read a shark-oil barometer (SS Goal 1, subgoals 1.1, 1.2).



LAKE:

This is page 188

THIS PAGE IS BLANK

Do not print this message