

Sustainable Living and Development

Suggested Length: 1- 2 forty- five minute class periods

This activity is designed to give students an understanding of sustainable technology and ways of life. The goal is to have students evaluate past and present conditions on Peddocks Island, to determine what is sustainable, what is harmful, and how it could be improved. Then the students will be asked to look at their school and home. Which, if any, of these technologies could be applied at either location? Students should then create, through building, writing, or designing an example of sustainable technology to be used at home or at school. (The three parts to this activity are; evaluate, connect, and create.)

Definitions:

Sustainability – having the ability to remain in existence; to maintain itself

Sustainable Living – lifestyles that are designed to help the environment, society and culture, and the individual to remain in existence

Sustainable Technology – technology that is non- intrusive on the natural environment and has the ability to renew itself without significant depletion

Sustainable Development – physical construction, planning, and expansion; as well society and cultural growth that is implemented in a manner that promotes sustainable living

Green Design – planning and development that uses sustainable technology, is environmentally friendly, and produces a minimal impact on the environment

Green Technology – includes Sustainable Technology and other environmentally friendly technology (ex. Recycling, composting, etc.)

Solar Power – collecting light from the sun and using it to create energy which can be turned into electricity, heat, and other form of energy

Solar Cells – (also known as Photovoltaic Cells) are the aspect of Solar Power that converts sunlight to electricity; this electricity is then transferred to a battery and stored for later use

Solar Collectors – are used to capture the heat from the sunlight and transfer it into our homes through the hot water systems; direct sunlight can also be used to heat our buildings by using certain building materials in the correct locations, facing the building correctly, and having windows in the right places

Wind Power – heat from the sun creates wind currents, which tend to follow set patterns (Have you ever noticed that wind is usually stronger near the water?)

Wind Turbines - (also known as Windmills) are used to take the wind and create mechanical power or electricity

Hydropower – using the current, or flow, of water to turn hydro turbines to create mechanical power or electricity

Compost – the act of converting organic debris to a mixture used for fertilizing and conditioning land

Cistern – a catch basin for rainfall and water runoff, used for water storage

Water Purification – the act of cleaning water to a point that it is safe to use and drink, usually done through boiling, evaporation, filters, or chemical methods

Potable – denoting that water is safe to consume

Greywater – water coming from household sinks and drains that does not include sewage

Greywater System – a series of plants used to filter and clean greywater before it is released into the environment again

Peddocks Island Today; Where the Past and the Present Meet

The following quotes and stories will illustrate what it is like to live on Peddocks in the 21st Century.

Seasonal Residents

Most of the residents that remain on Peddocks Island are considered seasonal, meaning that they typically choose to come to the island only on the good weather months. The typical season for these people is around Memorial Day to around Columbus Day. After which time the cottages are cleaned, locked, boarded up, and otherwise winterized. Being seasonal does not stop these residents from having to overcome a wide array of challenges, many of which are the same as the year round residents.

- ✓ *When visiting Peddocks, please remember that these are peoples homes and deserve privacy and respect*

The Murphy's

[Circa 2003] "On a recent sunny afternoon, the cottages in Portuguese Cove were deserted except for two brothers from Houghs Neck in Quincy.

Rich Murphy, 59, bought his cottage in 1979. He lived on the island year-round for a few years but now only visits in the summer...

With no electricity or running water, cottagers have to improvise. Murphy has a rainwater collection system that includes black hoses that heat the water [a collection system he devised himself]. The lights, stove and refrigerator in his immaculate cottage run on propane, and a small television runs on a 12-volt battery.

Murphy also is the owner of possibly the most pleasant outhouse ever constructed...

Most of the small cottages are painted bright or pastel colors, though many have faded. A few with peeling paint and sagging frame have been abandoned.

"It's tough to fix these up" because these are so old, Rich Murphy said.

Although the island was quiet on a weekday, the Murphys say many cottage owners flock to the island on weekends...

The quiet isolation is good for the body and soul, say the Murphys, who have known some very long-lived neighbors." (From The Patriot Ledger; 8/11/03; Residents of Peddocks Island are a dying breed; Anne Trafton)

The Hale's

[Circa 2005] "The Hales are one family that has summer residence at Peddock's. Claire Hale's family has been coming to the Island since 1917 at the invitation of one of the Portuguese fishermen. Her uncle bought a cottage, and Claire's parents visited them often. In 1939 Claire's parents bought an old Cow Barn for \$10 and fixed it up into a cozy place. Claire spent her entire childhood on Peddock's during the summers. Then in the 1940's the family bought the cottage that the Hales currently own. This cottage stands on the site of the old Island Hotel

that was owned by John Irwin. Our family and some other families are 5th generation on Peddock's. We are still using the hotel's well, and in the evenings we play games and read with our children and many grandchildren by the light of the kerosene lanterns. Sometimes life can be difficult, especially when you bring supplies ashore at low tide, but when this Island life is in your blood you can't turn away.

'We would like to turn one of the cottages that is now owned by the DCR into a museum showing the history of the life of the Portuguese Village. The village has a real history, and visitors need to know about it.' (Written for this curriculum by Claire Hale; 4/8/05)

Year Round Residents

On Peddocks Island there are three houses that are often used as year round residences. These houses are used to varying degrees depending upon if the family has a house on the mainland they use often, the type of work the residents do, and how hard the winter is (cold, ice, fuel consumption, etc.). Year round Residents have a different number of concerns than the seasonal residents including; heat, long term food storage, transportation (onto and off the island, as well as on the mainland), and the ability to get the modern comforts.

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The McDevitt's

[Circa 1961] *"As time went on [after Peddock's was sold in 1953], the new owner hired several civilian caretakers to replace the army personnel. These included Gus Williams, Mr. Atwood, and Andrew Sweeney. Finally [in 1961], young Eddie and Judy McDevitt took over..."* (Silvia 156)

[Circa 2005] *"At the time the McDevitts took over as caretakers, the only year round residents were two retired Master Sergeants and their wives. There was Sam Perry and Connie, and there was also Fred Perry (no relation to Sam) and Lillian. Most people knew Lillian at that time as "Nana Perry". The McDevitts remained the caretakers under private and state ownership until the Nineties; first Ed and Judy then their son Mike. The Metropolitan District Commission took over the management of Peddock's in 1970 [now the Department of Conservation and Recreation]. Judy and Ed raised a family of four children, taking them to school in their own small boat. - - - Judy and all her children, including Mike operate tugboats now; the tugs often seen moored off of Peddock's are some of these. Ed McDevitt eventually became the Harbormaster for the Town of Hull.*

During all the years the McDevitts resided on Peddock's Island there has been no electricity, and running water has been a sometimes thing. They have lived in an environmentally friendly way, due in part to necessity. Their heat and cooking fuel is renewable wood. Trash has always been separated into burnables, compostables, and things like cans that need to be disposed of ashore. They grew vegetables organically before it was "the thing to do," using food scraps, seaweed, horse and

chicken manure to enrich the soil of their garden. As solar panels have improved they have taken advantage of them and replaced dangerous oil lamps with electric lights.

The McDevitts still reside on Peddock's Island, and officially occupy two of the last three year round cottages. Judy and her son Mike McDevitt still live on the island year round, though Mike is the only year round resident who does not have a mainland house to go to if the weather gets too bad. When passing these year round houses a visitor will notice that they are more like homes than cottages. You can hear chickens, the family dog, and may even meet one of the family cats. At night it would not be uncommon to hear a radio or TV, see lights, and smell good home cooking. The houses typically will also have refrigerators and running water. All of this is done through inventive means, often utilizing sustainable technology. Water Cisterns are a common way of obtaining water (when connected to a solar powered pump they provide "running water"). If everyone ashore used as little electricity and water as they do, we would not have an energy crunch." (Co- Written with the author and edited for contact for this Curriculum by Judy McDevitt; 4/11/05)

[Circa 1973] "[Ed] McDevitt, who is 34, is the caretaker of Peddock's Island. With his wife [Judy], who is 30, he has been in permanent residence there for twelve years, and they have raised four children on the island. Their oldest child, Edward Jr., is 12; and so for the past seven years they have made at least two trips daily across the Gut to meet the Hull school buses. At present, they make four trips a day. But during their first five years on the island they made only one trip every three weeks.

"These crossings of the Gut are made in almost all forms of weather, in an open skiff with an outboard motor. A coastal storm will stop them, so will ice, which arrives in floes when warm weather breaks up sheets in the bays. And sometimes the Gut freezes, but very infrequently... Peddock's Island has no electricity, but the McDevitts don't need it, and clearly it would not be in the spirit of their loves to have it. They use kerosene lamps, and at one devilish moment during the great blackout of '65 - when for them, the whole normally glittering metropolis vanished into another century - they hung their lanterns in all their landward windows to demonstrate that electricity was perhaps less than essential.

"Kerosene lamps, and no furnace, no gas stove or propane burners, no hot water, no plumbing thus an outhouse, on pot-bellied wood stove for the entire cabin, enough driftwood on the beaches to keep the fires burning 'a thousand years', a 25-year-old horse producing manure for the garden, codfish and flounder pulled out of the bay, a banner year for bas in '72, Judith McDevitt trapping muskrats for stew and making hats and vests of the luxuriant pelts, Mrs. McD. Sitting on the roof all night with a shotgun to keep the raccoon away from the chickens...

"Needless to say the McDevitts are rather conservation minded: their lives have made them that way... They know that the black crowned night heron rookery isn't where the state agencies think it is. They even know about the rats, that their population rises and falls on three year cycles and is continually decimated by hawks and owls...

“There is more at stake here, of course, than mere ecology of nature. There is a little people- ecology involved also. And this couple will admit it. ‘It would be awful hard to adjust if we ever had to move to the mainland.’ ... But that’s not the point of this story... The point is simply that the islands can support a vigorous and clever style of life, and they can do so because they retain a little of the old natural insecurity.” (From the Boston Globe Magazine: 3/18/73: *An Island Family*: Deckle McLean)

Department of Conservation and Recreation

Peddocks Island is currently owned and managed by the Massachusetts Department of Conservation and Recreation, for public use of the island. In working towards the goal of minimizing impacts on the island, the state has developed certain sustainable technologies on the island including:

- **Photovoltaic System** – A remote site system, meaning there is a shed specifically built for the photovoltaic system, this early example of Solar Power is designed to power lights and basic electricity to four building in Fort Andrews (the Guardhouse, Stable, Chapel, and Firehouse).
- **Self- Composting Toilets** – Peddocks Island has three self- composting toilets in Fort Andrews near the dock and the camping areas. These trailhead models are designed to naturally break down solid waste minimizing the impact to the environment caused by latrines and eliminating the need for a public sewer connection.

What would you do?

Using the information you have learned evaluate the past and present conditions on Peddocks Island, then make suggestions of the best way to overcome different problems. Remember that you are on an island without running water or electricity.

1. Identify some of the challenges that modern day residents of Peddocks Island have, and how do they overcome them? Which of the technologies that are used on the island illustrate *sustainable living*?

2. Are these the same challenges the Matilda and her family faced? Have things gotten easier or more difficult over the years, how and why?

3. For the challenges listed below; explain how you would overcome them today and why would you choose the way...
 - Lighting and Electricity

 - Refrigeration

 - Running Water

 - Bathrooms

 - Waste Disposal (Sewage and Garbage)

 - Food

 - Transportation (to the island)

Sustainable Development

Through construction, designing (drawing), or writing; students should create an example or plan of sustainable technology to be used at home or in the school. Below is a list of Project Suggestions:

- **Active Solar Power and Heat (*through Solar Panels*)** – Research and design a solar system for power or heat, including where would it be located and how would it be orientated
- **Passive Solar Heat and Cooling (*through building design*)** – layout a building design to remodel your home or school to better utilize passive solar power
- **Wind Power** – Determine if your home or school is a candidate for a wind turbine, where would you put it, how much power would it produce, and what would you want it to power
- **Water Collection and Purification** – Design a cistern and water purification system that could be used, think about ways to collect rainwater and different methods of purifying water
- **Greywater System** – layout and design a garden or flowerbox that filters sink water, remember the system must utilize the water cycle (Note: for advanced work, certain plants can remove specific toxins; the plant choice is important)
- **Waste Disposal** – Develop alternatives to public garbage collection and sewage (Possible Solutions are Composting, Recycling, “Self-Composting” Toilets)
- **Recycling** – Develop a recycling plan for your school, by determining what products the school uses can be recycled, how you would collect the materials, where they would need to be brought to get recycled, and how you would get them there (they plan should be something that can be used for many years)