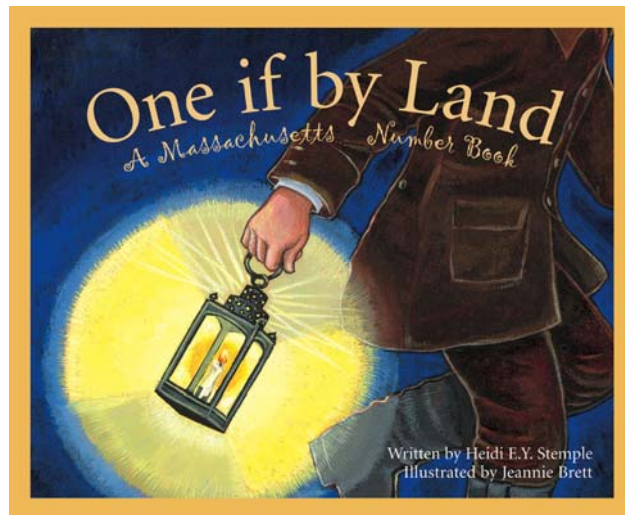


Teacher's Guide



One if by Land: A Massachusetts Number Book

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Published by
Sleeping Bear Press
310 N. Main St., Suite 300
Chelsea, MI 48118
800-487-2323
www.sleepingbearpress.com

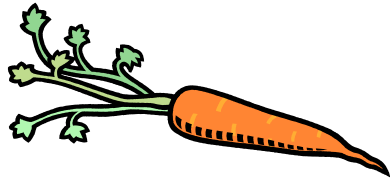


Marathon Math

1. The Patriot's Day Marathon in Boston, Massachusetts started in 1897. How many years have they been running the Boston marathon?
2. There were 37,000 runners in the marathon on its 100th anniversary. If 46% of the runners were women, how many women ran?
3. The marathon's first runner finished in 2 hours 55 minutes and 10 seconds. The fastest runner in history finished in 2 hours 7 minutes and 15 seconds. What was the difference in time between the two runners?
4. The marathon started in 1897. Women were first allowed to compete in 1966. How many years did women have to wait to compete?
5. In a recent marathon 25% of the runners wore blue shirts, 40% wore red shirts, and 35% wore white shirts. There were 25,000 runners in the marathon. How many wore each color shirt?
Blue
Red
White

Sink or Float

A Science Experiment



We know that apples and carrots are good for us and good to eat, but let's experiment with how well they float.

Experiment

1. Pass around a whole carrot and a whole apple. Students are to write a prediction about whether each vegetable will sink or float.
2. Fill a large clear bowl with water.
3. Place the apple and carrot in the water one at a time.
4. Students write down the results.
5. Repeat the experiment.
6. Students write the conclusion they draw from this experiment. Why did one float and one sink?
7. Add several tablespoons of table salt to the water.
8. Repeat the experiment. Did the results change?

Explain



WE DID IT!

Massachusetts citizens have a long proud history. Throughout *One if by Land* you will read about the accomplishments of many wonderful people.

Write the name of each person in the box next to their accomplishment.

Paul Revere

Dr. James Naismith

Harriet Hanson

Pilgrims

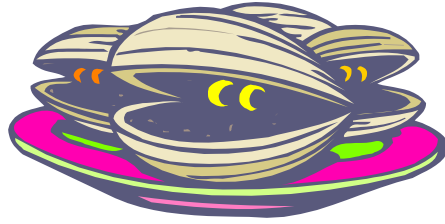
Babe Ruth

John Chapman

Sojourner Truth

Mike Kittredge

1. Baseball's most famous player _____
2. Started Yankee Candle Company _____
3. Warned people of the British arrival _____
4. Led women workers' strike in 1836 _____
5. Invented basketball _____
6. Traveled west, starting orchards on the way _____
7. Outspoken advocate for slaves and women _____
8. Landed in Cape Cod in 1620 _____



Bi- means Two

The quahog clam is a bivalve, meaning it has a shell made of two halves.
Find a yummy dish that is made using quahog clams in *One if by Land*.

List as many words as you can in each box that start with the prefix given.

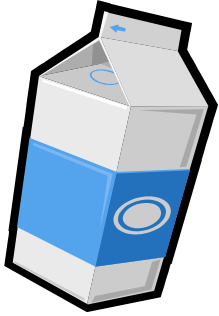
Uni- means one

Bi- means two
Example-bivalve

Tri- means three

Quad- means four

Feed the Chickadees



The black-capped chickadee is the Massachusetts state bird. You will find some interesting facts about these small active birds in *One if by Land*.

Chickadees don't just hide in the forests; they like to visit birdfeeders.

Let's make a feeder to hang outside your home for the chickadees.

Materials

Any size empty milk or juice carton

Heavy twine or cord for hanging

Scissors

Stapler

Hole punch

2 small sticks

Birdseed (make sure it's the type that attracts chickadees)

Materials to decorate the carton. Use water-based paints.



Directions

1. Thoroughly wash and dry the carton.
2. Decorate the carton.
3. Use your scissors to cut a square hole big enough to fit a bird in each side of the carton. Place the holes directly across from each other.
4. Use a hole punch to make a small hole below each square.
5. Push your sticks through the holes from one side of the carton to the other side.
6. Fill the bottom of your carton with birdseed.
7. Punch two holes in the top of your carton. String twine or cord through the holes and tie the ends securely.
8. Hang your feeder on a tree branch.



Check your feeder at the same time twice each day for a week.

Keep a record of the number of birds at your feeder.

How many chickadees in total? Name the other types of birds that came.



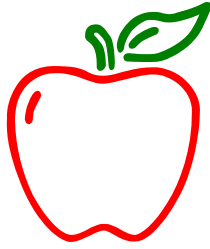
Dollar Design

Did you realize that our paper money had cotton, linen, and silk fibers in it? That's one of the reasons it is stronger than paper. The company that makes the paper that our money is printed on is located in Massachusetts. Discover why this company is special in *One if by Land*.

Pretend each state now has to use its own currency. There is a contest in your state to design a one dollar bill that best represents the people and history of your state.
Design your bill.

FRONT

BACK



Make an Applehead Doll

Johnny Appleseed is said to be responsible for creating apple orchards across the country. Johnny Chapman, the real man, was born in Massachusetts. Enjoy reading his story and how he became a legend in *One if by Land*.

Try making an applehead character doll.

Materials

One hard variety apple

Knife for peeling

Plastic knife for carving (a pumpkin carver would work)

Lemon juice

2 cloves for eyes

Directions

1. Peel the apple. Don't remove the stem.
2. Carve the ears, eyes, nose, mouth, and chin of your character in the apple.
3. Soak the apple in lemon juice for 1 hour.
4. Tie a string to the stem of the apple and hang to dry in a warm dry spot. DO NOT hang in the sun.
5. Let the apple dry for 2-4 weeks. It's fun to check it occasionally to see how it is drying.
6. Finish the character doll with a body, clothes, and hair. You may wish to rub some color on its cheeks. Put the whole cloves in the eyeholes.

Get together with some classmates and write and produce a play using your applehead character dolls.

One if by Land Fossils

A fossil is a remnant or trace of an organism from the past, such as a skeleton, footprint, or leaf imprint.

Discover what the official state fossil of Massachusetts is in *One if by Land*.

It's your turn to actually make a fossil. Just follow the directions below and have fun!

Materials

Leaf, stone (not smooth) seashell, interesting stick, or anything else you wish to fossilize

Plaster of paris

Modeling clay (soften the clay)

Waxed paper

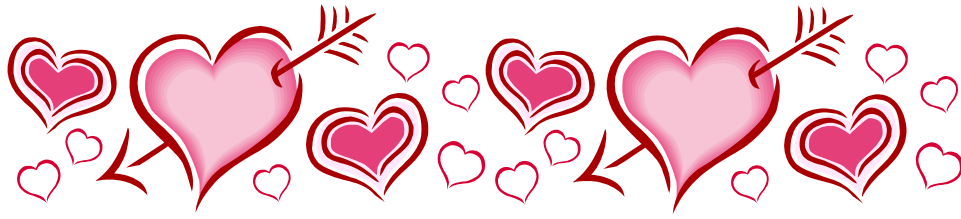
Vegetable oil, small amount

Mixing bowl

Spoon

Directions

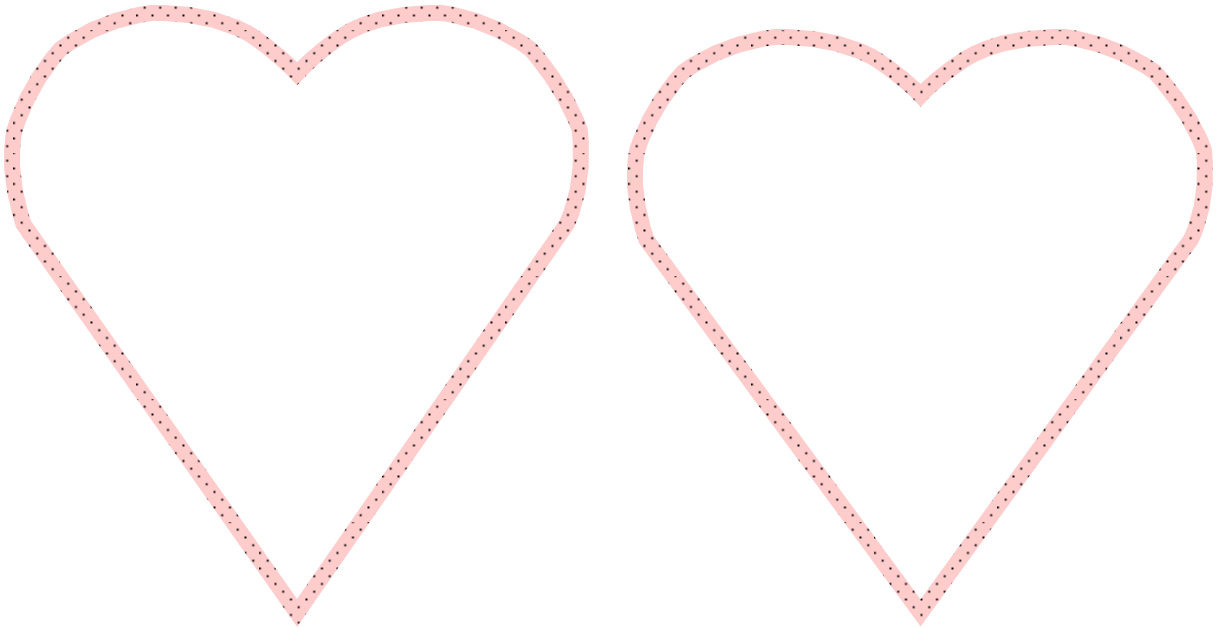
1. Flatten clay into a 1-inch-thick circle. Place on a piece of waxed paper.
2. Gently press your object into the clay and remove it. Make sure you have a good deep impression in the clay.
3. Carefully rub a small amount of vegetable oil into the impression.
4. Use the directions on the package to make the plaster of paris. Stir until it is smooth and thick.
5. Spoon plaster into each impression. Fill impression to the top.
6. Let the plaster dry overnight. Peel away the clay and enjoy your fossil.



Massachusetts is in Our Hearts

Valentine's Day is a time for cards, flowers, and of course candy hearts. The hearts we love with sayings on them are made in a factory in Cambridge, Massachusetts. After reading *One if by Land* think about everything you feel that makes Massachusetts a special place.

In each heart write a list of things that make Massachusetts special.



The Place to Be is the Library!



What a wonderful place a library can be. It's full of fun, adventure, mystery, and history. It was in Boston, Massachusetts where children first had a room of their own in a public library. Can you imagine a library without a children's space? Choose your very favorite children's book and write a review of it.

Make sure to include:

Major characters, setting (time and place), the conflict (what was the problem that the characters faced?), the solution (how was the problem solved?). Who would best like your book?

Book Title





Life in a Lighthouse

Before 1972 many families manned the lighthouses along the Massachusetts coastline. The book *One if by Land* contains some interesting information about lighthouses and what it was like to live in one.

Pretend your family lives in a lighthouse. Write a story about the stranger who came to your door late one night.

Draw an illustration to go with your story.

Pictograph the Game



A pictograph is a graph which uses pictures to represent numbers.

Playing basketball is a favorite pastime. Did you know that basketball was invented in Massachusetts? To learn who invented it and how it was invented just look in *One if by Land*.

Make a pictograph using the information in the box. Points scored in a basketball championship are shown in the circle below.



Lois	15
Tami	4
Robin	12
Tameka	8
Kim	19
Maria	8



Pictograph



Following Directions

We know that Johnny Appleseed loved apples. He is so famous for his love of apples that he is the Massachusetts official folk hero. Explore the life of the man who became the legend in *One if by Land*.

Sequencing means to place events in order from beginning to end.

Teach Johnny Appleseed to make a peanut butter and apple sandwich. Think carefully about the steps before you begin.

Try making a sandwich following the directions you wrote exactly.

Look carefully at your directions. Did you leave out any steps?

What changes do you need to make to your directions?

One if by Land Answer Sheet

Marathon Math- 1) 109 years 2) 17,020 3) 47 min. 55 sec.
4) 69 years 5) blue-6,250 red-10,000 white-8,750

Sink or Swim- Apple cells are less dense than carrot cells.

We Did It- 1) Babe Ruth 2) Mike Kittredge 3) Paul Revere
4) Harriet Hanson 5) Dr. James Naismith 6) John Chapman
7) Sojourner Truth 8) Pilgrims

Bi- means Two-

Uni- unicorn, uniform, universe, unify, unite

Bi- bicycle, binocular, biplane, biceps, bifocal

Tri- triangle, tricycle, trillions, triplet

Quad- quadrangle, quadrant, quadruple, quart, quarter