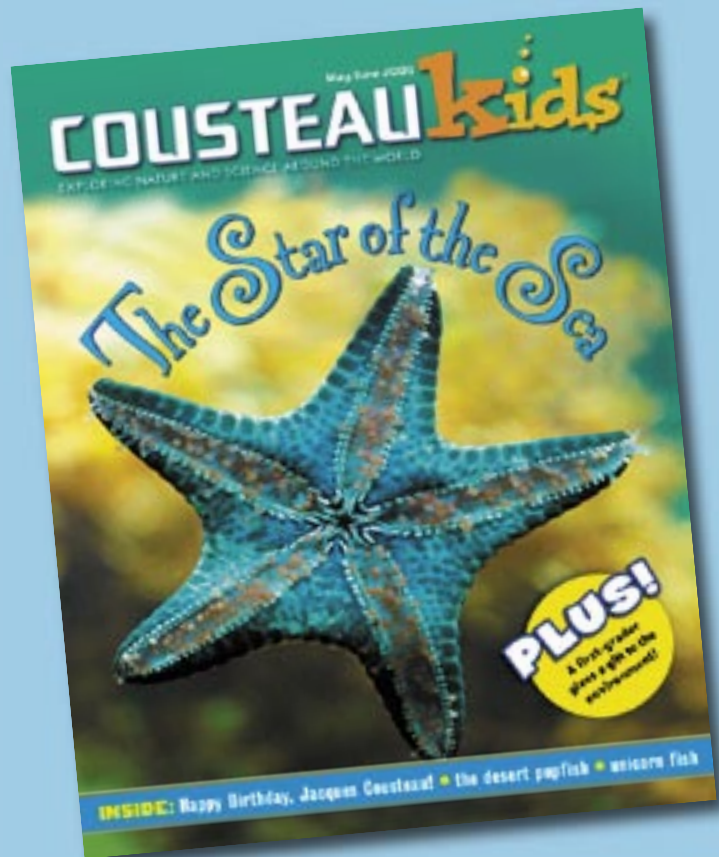


COUSTEAU *kids*

EXPLORING NATURE AND SCIENCE AROUND THE WORLD

May/June 2009 Teacher's Guide



COUSTEAU *Kids*

EXPLORING NATURE AND SCIENCE AROUND THE WORLD

In this issue of *Cousteau Kids*, students will read about:

- ▶ sea stars
- ▶ the sounding line
- ▶ Jacques Cousteau's expedition to Jamaica
- ▶ the Caribbean Sea
- ▶ recently discovered sea creatures
- ▶ the unicorn fish
- ▶ the desert pupfish

THE SOUNDING LINE

Key Words:

mark: a knot or strip of material on a sounding line

line: the rope used to make a sounding line

leadsman: the person or sailor using a sounding line

fathom: a measurement of six feet

Before reading:

Write the list of items below on the chalkboard or chart paper. Ask students what a mariner might use the materials to do.

1. rope
2. eight-pound weight
3. strips of leather
4. glue

During reading:

Have students answer these questions as they read the article:

1. When did a mariner need to use a sounding line?
2. What was a mariner able to learn by using a sounding line?
3. What distance apart were marks put on the rope?
4. Why were sounding lines “armed”?
5. If a mariner picked up sand on his armed lead, what do you think that would say about the ship’s location?

After reading:

Group students to find items that weigh more than and less than a lead.

What classroom items can students find that weigh exactly eight pounds?

Standard 4

Understands and applies basic and advanced properties of the concepts of measurement

Understands formulas for finding measures

Uses the general skills and strategies of the reading process
Reads for meaning

THE SECRET LIFE OF SEA STARS

Key Words:

echinoderm: a group of marine animals that includes sea stars and sea urchins

tubercles: a small knobby growth

regeneration: a process of regrowth

inflated: expanded; enlarged

suction: a force that causes something to be drawn into or stuck to a surface

Before reading:

To set anticipation, ask students to list three things they know about sea stars. Record students responses on a T-chart like the one provided below. After reading, have students revise their responses to complete the chart.

3 Things I Know About Sea Stars	
Before reading:	After reading:
1.	1.
2.	2.
3.	3.

During reading:

To set a purpose for reading, tell the class they will be going on a fact hunt. Have students read in groups to complete the following chart. Be sure students preview the chart below before reading. [Answers provided.]

a food sea stars eat:	<i>mussel, oyster, clam, worm, sea snail, or other sea star</i>
an animal that eats sea stars:	<i>king crab, sea otter, seagull</i>
number of stomachs a sea star has:	<i>two</i>
a sea star that gets its name from a food you eat:	<i>chocolate chip sea star, garlic star</i>
a sea star uses its arms to:	<i>sniff out prey, grab, climb, walk</i>
amount of reef a crown-of-thorns can eat in one year:	<i>64 square feet</i>

After Reading:

Help students visualize the amount of reef eaten by a crown-of-thorns sea star. Have your class measure an area of 64 square feet in the schoolyard or playground.

Before you start, turn the activity into a mini lesson on divisibility. Have groups write out the different ways to make 64 sq. ft. Provide students with square inch paper (one square inch = 1 square foot) and have them draw all the possibilities.

[Answers: 1 foot X 64 feet, 2 feet X 32 feet, 4 feet X 16 feet, 8 feet X 8 feet, 16 feet X 4 feet, 32 feet X 2 feet, 64 feet X 1 foot]

Student Page Answers:

5 facts:

1. A sea star's tough skin protects it from predators.
2. Sea stars are meat-eating predators.
3. Sea stars have two stomachs, one for eating and the other for digesting.
4. Sea stars can regrow arms and sometimes a new body.

2. Sea stars take tiny bites out of their prey.

3. Sea stars are picky eaters.

1. Sea stars are not fish.
2. Sea stars live in shallow waters, rocky shores, and coral reefs.
3. Sea stars use seawater to power their arms and tube feet.
4. Some sea stars harm reefs by eating too much coral.

Pages 14-16

ICKY, STICKY, LONG, AND TRICKY

Key Words:

tangle: to wrap or twist around

proboscis: a long, tube-shaped organ used for sucking

Standard 4

Understands and applies basic and advanced properties of the concepts of measurement

Knows basic standard of units and the relationship between them

Before reading:

Have groups measure a rubberband in two ways: unstretched and stretched. Record the measurements of each group and discuss reasons why it is difficult to get an accurate measurement of an the stretched rubberband.

During reading:

Ask students to list three that describe a bootlace worm. [Suggested answers: long, poisonous, blind, and mysterious]

After reading:

Have students complete the sentences below.

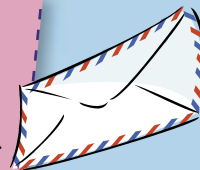
1. Bootlace worms eat _____.
2. A bootlace worm's eyes _____.
3. A poisonous mucus helps the bootlace worm _____.
4. Bootlace worms are probably longer than _____ and _____.

Student Activity:

4. The bootlace worm is 2,136 inches long.
The bootlace worm is about 60 yards long.
Almost 30 bootlace worms (laid head to end) would equal one mile.

Write to Cousteau Kids at:

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732 Eden Way North
Suite E, #707
Chesapeake, VA 23320



Standards

Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education, 4th Edition Mid-continent Research for Education and Learning (McREL) and Association for Supervision and Curriculum Development
www.mcrel.org/compendium/browse.asp

New York State Math, Science & Technology Standards, The University of the State of New York, The State Education Department www.emsc.nysed.gov

Name _____

Date _____

ICKY, STICKY, LONG, AND TRICKY

If scientists' measurements are correct, the bootlace worm is the longest animal in the world. When the bootlace worm stretches its body all the way out it can measure 178 feet! In the article on pages 14-16, you read how tricky it can be to measure this marine worm.

Directions: First work with a partner to measure 178 feet of string. You'll also need a pencil, tape measure, marker, and stopwatch.

PART 1:

1. Compare the length of your desk to the string. How many desks long is the string?

Use tallies to keep track of the answer here: ↘

2. Measure the length of the string to a school bus. (Ask your teacher to arrange this activity during a safe time of day.) Write how a the length of your string compares to the bus here: ↘

3. Lay out your string in the playground or schoolyard. Then run the distance back and forth while your partner keeps time. Write how long it took both partners to run the distance here: ↘

4. The bootlace worm has measured in at 178 feet. Use the measurements in the box to answer these questions:

1. How many inches long is the bootlace worm? _____
2. How many yards long is the bootlace worm? _____
3. How many bootlace worms (laid head to end) would equal one mile? _____

1 foot = 12 inches
 1 yard = 3 feet
 1 mile = 5,280 feet

Name _____ Date _____

FINDING FATHOM

The term fathom comes from measuring the outstretched arms of a Viking man. The length measured six feet from fingertip to fingertip. But that measurement was just an average. A lot of outstretched arms were probably measured before it was figured out that the average Viking man had an armspan of about 6 feet.

An **average** is a value that is used to represent the middle of a set of numbers. It's easy to figure out an average. First you add all the numbers together. Then you divide by the number of entries. (If you add three numbers together, divide the sum by three. If you added four numbers, the divisor is four.)

Directions: Measure your armspan and the armspan of four of your classmates in inches. Then find the average of the set of numbers.

ARMSPAN:

Me: _____

Classmate 1: _____ in.

Classmate 3: _____ in.

Classmate 2: _____ in.

Classmate 4: _____ in.

Find the average armspan of all the students in your group, including you!

Do your math here: ↘

CK EXTRA!

Repeat the directions above using the armspan of five adults. Is the average more or less than one fathom?

Name _____

Date _____

SEA STAR SECRETS

Regrowing arms, eating with two stomachs, and seeing with your arms doesn't sound ordinary, but it's just the everyday life of a sea star.

List 5 facts about a sea stars arms here:

- 1.
- 2.
- 3.
- 4.

Check the sentences that correctly describe a sea star's eating habits. Write an X in the box next to sentences that are incorrect.

- 1. Sea stars are meat eaters.
- 2. Sea stars take tiny bites out of their prey.
- 3. Sea stars are picky eaters.
- 4. Sea stars have two stomachs.
- 5. Sea stars squirt strong digestive juices on their prey.

Answer the questions below after you have read the article on pages 8-11.

1. Why is the name sea star used instead of starfish? _____

2. Where in the ocean do sea stars live? _____

3. What do sea stars use to power their arms and tube feet? _____

4. How do some sea stars harm reefs? _____
