COUSTEAU kids

September / October 2005 Teacher's Guide

In this issue of *Cousteau Kids* students will:

- learn about sea turtles and compare and contrast their traits
- find out why loggerhead sea turtles are called the "grumpiest" turtles in the sea
- read about *Umbria*, an Italian troop ship that sank in the Red Sea on June 10, 1940
- play an educational game that teaches about animal migration
- view a photo journal of a recent sea turtle rescue, and think of a name for the animal
- read a Cousteau Adventures comic to learn about a historic expedition to uncover artifacts from an ancient shipwreck
- strengthen visual-acuity and prediction skills in the Guess Who? activity
- get news about a new dolphin species and a long-lost woodpecker in The Maritimes

Key Words in Context

Many of the advanced words in Cousteau Kids feature context clues—surrounding words, phrases, and sentences in a passage that provide clues to help determine the meaning. This Teacher's Guide provides key words and phrases used in the September / October 2005 issue for each article. Before reading each article, write the key words on sentence strips and post them on the chalkboard. Ask students to predict the meanings and then use context clues to determine them while reading. Point out that clues to the meaning of new words are often found within commas. Instruct students to underline a key word once, and the clues to its meaning twice.

[Pages 4-5]

UMBRIA

From Shipwreck to Shelter

Standards and Critical-Thinking Skills

- knowledge: reading about a historic shipwreck; defining key words
- comprehension: sequencing events
- analysis: examining and identifying change in a particular environment; explaining a cause and effect relationship
- evaluation: using reading skills to interpret informational text

Key Words in Context:

shipwreck: a ruined or broken ship and its parts that may be grounded or sunk
shelter: something that houses and provides protection
marine bacteria: any of a group of single-celled microorganisms that can be round, spiral, or rod-shaped (often form colonies, live in soil, water, organic matter, and move by means of flagella)
attach: to stick or hold on to

Getting started:

Before reading the article with your class, ask students to draw pictures of what they think a shipwreck looks like. Students may draw broken and rotten ships—probably with treasure nearby! After students read the article, compare students' drawings to the wreck.

Discussion Questions:

How did the *Umbria* change after it sank?
What animals call the *Umbria* home?
Why do you think divers stayed away from the *Umbria* wreck remains for so many years?

Extension Activities:

1. Ask a student volunteer to find the location of the Red Sea on a class map.

2. If possible, visit a nearby shipyard or maritime museum.

3. The *Umbria* sank on June 10, 1940. Have students determine how long ago the sinking took place. [ANSWER: 65 years ago (during World War II)]

[Pages 6-7]

Loggerheads
The Grumpiest Turtles in the Sea

Standards and Critical-Thinking Skills:

- knowledge: examining a diagram; paraphrasing the life cycle of a loggerhead sea turtle
- comprehension: differentiating between loggerheads and other sea turtles
- application: discovering ways to protect all sea turtles
- analysis: pointing out reasons why loggerheads are considered "grumpy"
- synthesis: rewriting the main ideas of each section in the article

Getting Started:

Before beginning, ask students to write about why they think loggerheads are called the "grumpiest" turtles in the sea.

Set a Purpose for Reading:

Here's a True or False questionnaire to provide to students before reading the article. Have students read the article to confirm their answers.

True or False?

1. Loggerheads are very friendly sea turtles.
2. Loggerheads have the largest heads of all sea turtles.
3. Loggerheads weigh about 100 pounds.
4. Loggerheads are slow swimmers.
5. Warmer sand temperatures will produce more male sea turtles.
6. Loggerheads can travel up to 7,000 miles to feeding grounds.

7. Maine is the “Loggerhead Nesting Capital of the World”
8. Loggerheads are caught for their skin, shells, and for food.

Answers:

1. False
2. True
3. False
4. True
5. False (female sea turtles)
6. True
7. False (Florida)
8. True

Discussion Questions:

Why do you think loggerheads are such grumpy sea turtles?
Besides Florida, where else do loggerheads live around the globe?
Would you say that life is easy or difficult for loggerhead sea turtles? Explain your reasoning.
In the article, loggerheads are called “grumpy” and the “turtle next door.” What nickname would you give the loggerhead sea turtle?
What are some things that people can do to protect sea turtles, including loggerheads?

Follow-up Activities:

1. A sea turtle with a “bad case of the barnacles” can weigh 100 to 200 lbs lighter once the barnacles are removed. Loggerheads weigh between 400-500 lbs. Ask students: What is the most a sea turtle with a “bad case of the barnacles could weigh? [ANSWER: about 700 lbs]
2. Have students write humorous short stories entitled “My Life as a Loggerhead” to share aloud.

Student Activity Page Answers:

1. Male and female loggerheads mate at the nesting beaches where they were born.
2. Females take about 1 to 2 hours to lay all the eggs for one clutch (nest).
3. The mother covers up the eggs with sand and then returns to the sea.
4. After 6-11 weeks, hatchlings cut their way out of their shells.
5. Hatchlings crawl to the surf, which takes about 1 to 2 days.
6. Baby loggerheads float in the ocean within beds of sargassum weeds.
7. Then they travel up to 7,000 miles to feeding grounds.
8. Loggerheads travel thousands of miles to return to their nesting beaches.

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Standards and Critical-Thinking Skills

- knowledge: identify important aspects of species of sea turtles
- comprehension: restate top ten “coolest things” about sea turtles
- analysis: discover cool sea turtle traits; arrange the coolest things about sea turtles in a new order
- evaluation: rearrange and rank the coolest things about sea turtles; conclude the favorite “coolest thing” about sea turtles among classmates

Key Words in Context:

temporary: lasting for a limited or short time
oxygen: a colorless, tasteless, odorless gas found in the air, water, and in many rocks and minerals and organic compounds
species: living things that have the same attributes and a common name
magnetic: the ability to attract iron
compass: a tool that uses a magnetic needle to determine direction
designs: drawings, patterns, or sketches
graceful: to move in a pleasing or easy way
breed: to produce offspring
glands: a cell, group of cells, or organ in a body that performs a specific job

Getting Started:

Assign 10 volunteers a number from 1-10 and have each student read aloud the corresponding "coolest thing" about sea turtles.

Set a purpose for reading:

Before reading the article, ask students to list 10 things they already know about sea turtles. Have students compare their lists with the article.

After reading:

To assess comprehension, hold a pop quiz the following day to see if students can name all ten of the "coolest things" about sea turtles. Provide a reward related to sea turtles, such as sea turtle pencil or sticker. Have students write a top ten list for other sea creatures. Suggest students use past issues of *Cousteau Kids.*

Discussion Questions:

Do you agree that seven is a lucky number for sea turtles? Why or why not?
Why is it possible for sea turtles to stay underwater for up to 2 hours? What is a sea turtle doing at that time?

Follow-up Activities:

1. Hold a class vote to learn the favorite "coolest thing" about sea turtles among students.
2. To reinforce the length of time that sea turtles can stay underwater without coming up to the surface for oxygen, point out the time that has passed every two hours.
3. Magnetism is the ability to strongly attract. Sea turtles have the ability to sense the Earth's magnetic field. They use the Earth's magnetic fields to help them figure out where they are on Earth—the longitude and latitude. The Earth's magnetic field is strongest at the poles and weakest (almost zero) at the equator. Demonstrate magnetism for students using magnets (or lodestones) to represent the poles. Provide students with iron paper clips to represent sea turtles.
4. A compass (or mariner's compass) is a navigational instrument for finding directions. It has a magnetized pointer that will align itself accurately with Earth's magnetic field. (To make your own compass see the Student Activity Page.)

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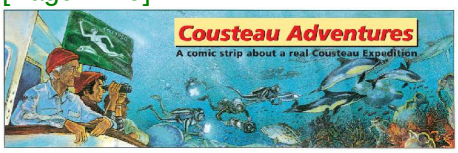

Standards and Critical-Thinking Skills:

- knowledge: defining vocabulary
- comprehension: reading for meaning; predicting outcomes
- analysis: using visual abilities to analyze informative illustrations
- evaluation: making inferences about the sequence of events; inferring the risk involved in diving a depth of 200 feet deep

Key Words

Etymology: Word study

In this Cousteau Adventure, students will learn that in 1901 the oldest-known astrolabe was recovered from the Antikythera wreck. Write the word "astrolabe" on the chalkboard or chart paper and have students examine a part of the word (astro) to see if they can guess the meaning. "Astrolabe" is made from the words *astron*, meaning "star," and *lambanien*, meaning "to take." An astrolabe is a tool sailors used to observe and calculate the position of celestial bodies before the invention of the sextant. Create a web of other words that include *astro.* Start with: *astral, astrologer, astronaut, astronomy, astronomical,* and *astroscopy.*

In context:

The meaning of the words below can be determined using context and picture clues.
artifacts: objects from a past time period
recovered: brought back
advanced: ahead of the times, progressive
navigate: to get around, move, or travel by
archeology: the scientific study of material remains, such as fossils, artifacts, and monuments
abandoned: to give up on

Getting Started:

In this adventure, Captain Cousteau and diver Albert Falco talk about revisiting the wreck site of a Roman ship that sank in 86 BC off the coast of Antikythera Island in Greece. Captain Cousteau and his team are hoping to locate a marble horse and other artifacts. Before reading the comic, read aloud the introduction to students. Then create a "T-chart" on the chalkboard or chart paper. Label one side of the chart with the heading "Will find the marble horse," and the other side "Will not find the marble horse." Have each student record a prediction by writing his or her name underneath one heading of the chart. Ask students about their choices and then confirm the predictions after reading.

Reading the Comic:

Read the comic in small groups or assign roles and perform the comic aloud. The roles include: a narrator, Captain Cousteau; a helicopter pilot; Albert Falco, chief diver; Serge, a diver; and an officer training Serge. While reading, ask students to pay attention to the relationship between Captain Cousteau and Albert Falco. Ask: *Do they seem like friends? Support your answer with details from the comic.*

Follow-up Activities:

1. Create a timeline that indicates the year the Roman ship sank (86 BC), when the Greek sponge divers discovered the wreck (1901), the Cousteau expedition (1976), and today.
2. Have groups research the astrolabe to learn what it looks like (it has clocklike gears) and how it worked to help sailors navigate (by predicting the positions of the stars and the sun).

3. Log on to http://cse.ssl.berkeley.edu/AtHomeAstronomy/activity_07.html for directions on making a simple astrolabe.

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Famous Shipwrecks A-Z

Standards and Critical-Thinking Skills:

- knowledge: reading to acquire new information
- comprehension: grouping shipwrecks according to time period; categorizing the ships according to why they sank
- analysis: using visual abilities to analyze informative illustrations
- evaluation: making inferences about events

Before Reading:

Ask students to name a famous ship or shipwreck. Tally the number students can list on the chalkboard or chart paper.

Set a Purpose for Reading:

Some ships have names with abbreviations and others simply have nicknames. Tell students they will read to learn the names of famous shipwrecks, especially the "Ship of Gold," Queen Anne's Revenge, and the HMHS *Britannic.* While reading, ask students to jot down possible nicknames for all of the ships.

After Reading:

Using the alphabet is just one way to list these shipwrecks. Ask students to rank the ships according to the year they sank—from the earliest date to the most present. Have older students sort the shipwrecks by century: 17th, 18th, 19th and 20th.

ANSWERS:
1628—*Vasa*
1718—*Queen Anne's Revenge*
1857—SS *Central America*
1862—USS *Monitor*
1864—USS *Housatonic*
1912—RMS *Titanic*
1915—RMS *Lusitania*
1916—HMHS *Britannic*
1942—SS *Normandie*
1956—*Andrea Doria*
1975—SS *Edmund Fitzgerald*

17th Century (*Vasa),* 18th Century (*Queen Anne's Revenge*), 19th Century (SS *Central America,* USS *Monitor,* and USS *Housatonic)* and the 20th Century (RMS *Titanic,* RMS *Lusitania,* HMHS *Britannic,* SS *Normandie, Andrea Doria* and SS *Edmund Fitzgerald*)

Sort the names of the ships according to why they sank. You may need to do a bit more research to learn why each ship sank. (For example, some students may argue that the *Titanic* sank because of weather conditions and others may say that it accidentally hit an iceberg.) If your school has an Intranet, use a digital encyclopedia. If not, log on to http://en.wikipedia.org/wiki/Main_Page

for a good online encyclopedia. Then set up this graphic organizer on chart paper for students to copy and complete:

Famous Shipwrecks and Why They Sank:

fighting or warfare	weather	pirates	accident
Britannic USS *Housatonic* RMS *Lusitania* *Queen Anne's Revenge*	*Andrea Doria* SS *Central America* SS *Edmund Fitzgerald* USS *Monitor*	*(we were just kidding!)*	SS *Normandie* *Vasa*

Discussion Questions:

1. What were the causes of most of the shipwrecks? [ANSWER: fighting/warfare and weather conditions]
2. Why do you think people are fascinated by shipwrecks?
3. Which shipwreck would you like to discover, and why?
4. Which ship do you think had "the most valuable" treasures?

Follow-up Activities:

1. The word *irony* can be used to express the difference between what is expected to happen and what actually results. Have students talk about which shipwrecks have the greatest sense of irony. Start with: *Titanic* (practically unsinkable) and *Vasa* (maiden voyage).
2. The SS *Central America* was carrying 38,000 pieces of mail. When the *Central America* sank in 1857, there were five current stamps: 1¢, 3¢, 5¢, 10¢, and 12¢ denominations. It cost about 10¢ to mail a letter in 1857—plus a 2¢ ship fee. Have older students compute the total cost of mailing all 38,000 letters in 1857 and compare it to today's prices. [ANSWERS: $456,000 (1857) $1,406,000 (today)]

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Standards and Critical-Thinking Skills:

- knowledge: matching cards to acquire new information; identifying animals
- comprehension: estimating the animals that travel the longest and shortest distances
- analysis: diagramming where animals migrate to and from on maps or a globe
- evaluation: making inferences about the sequence of events; inferring the risk involved in diving a depth of 200 feet deep

Before Playing the Game:

Display a map or globe of the Western Hemisphere (the Americas) during this activity. Tell students by playing this game, they'll learn about some animals in North America that migrate, or move, from one place to another in search of warmer weather, food, or good breeding areas.

After the game:
Have students sort the animal cards into categories. Start with: vertebrates (animals with backbones) and invertebrates (animals without a backbone). [ANSWERS: *vertebrates:* golden plover, Arctic tern, goose, gray whale, Pacific salmon, whooping crane, green sea turtle, Savannah sparrow, and caribou *invertebrate:* Monarch butterfly.] Then have students sort the animals by class. [ANSWERS: fish (salmon), bird (golden plover, Arctic tern, goose whooping crane, Savannah sparrow), mammal (gray whale and caribou), and insect (Monarch butterfly).]

Follow-up Activities:
1. Place a pushpin on the map or globe where your school or town is located. Have students use corresponding colored pushpins to show where animals migrate to and from. Discuss how many country or state borders an animal passes through during its migration.
2. Research species of animals in your area that periodically migrate, and those that do not (called resident or sedentary).

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NAME THAT SEA TURTLE!

After reading about the sea turtle rescue, choose and submit a class name to *Cousteau Kids* or encourage students to choose their own name. Let students know that the name can also be a word or place that represents the animal, such as *Freedom, Rescue,* or *Florida.*

Submit the forms to the address below by September 22, 2005. Or, e-mail *Cousteau Kids* at cousteaukids@weeklyreader.com and be sure to include your name, your school's name and class number, a complete address, and why your class chose the name.

Cousteau Kids c/o Weekly Reader
200 First Stamford Place
PO Box 120023
Stamford, CT 06912-0023

[Pages 19-20]

GUESS WHO?

Getting Started:
Zooming in on Cousteau photos will strengthen the visual-spatial intelligences of your students. Visual-spatial skills include an ability to recognize color, line, form, and space.

Standards and Critical-Thinking Skills:
knowledge: using descriptions to name animals; reproducing rhymes; using mentor text
application: writing to inform and entertain

Key Words:
pectoral: located on the chest
blunt: direct and to the point
mottled: colored spots and blotches

Getting Started:

This activity can be done in a variety of settings, as a whole class, with a partner, or independently. Before students begin, say: "No peeking!" Ask students to write down their guesses on separate papers before turning the page.

Discussion Questions:

How are fins and flippers useful to animals?
What is special about a ray's pectoral fins?
How is a whale's caudal fin different from other fins?
How would your life be different if you had flippers or fins?
If you could have fins, which type would you want—pelvic, pectoral, dorsal, rear, or caudal)?

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The Maritimes
September/October 2005

Standards and Critical-Thinking Skills

- knowledge: reading for meaning
- comprehension: comparing attributes of animals
- application: using vocabulary reading strategies; comparing temperatures; completing mathematical conversions
- synthesis: composing questions

Article One: DUBBED "THE SNUB"

Getting Started:

Before reading this article, ask students to list names of animals that look a lot alike. Start with: alligators and crocodiles, leopards and cheetahs, butterflies and moths, rabbits and hares, toads and frogs, donkeys and mules, dugongs and manatees, and porpoises and dolphins. To set anticipation for reading, let students know that they will read an article about one dolphin that was mistaken for another.

Discussion Questions:

Why is the name Snubfin a good name for this dolphin?
How did scientists figure out that the dolphins are actually different?
Why do you think George Heinsohn was unable to learn for sure that the animals were different in the 1960s and 1970s?
How do Vietnamese fishermen feel about Snubfin and Irawaddy dolphins?

Follow-up Activities:

1. The Irrawaddy and Snubnose dolphins look a lot like Beluga whales. So much so that scientists sometimes link Irrawaddy dolphins with Belugas (and their close relatives the Narwhals). A beluga has a stubby nose but no dorsal fin, although it does have a tiny bump on its back. Post a photo of an Irrawaddy and Snubnose dolphin alongside a Beluga whale. See if students can identify the Snubnose dolphin first and then compare and contrast the physical attributes of each.

2. In this article students will learn that DNA testing helped to prove that Snubfin and Irrawaddy dolphins are different. Provide students with a definition of DNA. Log on to www.genetics.gsk.com/kids/index_kids.htm for kid-friendly material. Although the structure of DNA was officially explained in 1953, DNA testing and profiling techniques were developed in 1984 by English geneticist Alec Jeffries. DNA testing was first used in 1986 to help investigators solve crimes.

Article Two: SIGHTED!

Getting Started:

Before reading, ask students to act out the tapping sound of a woodpecker. Inform the class that this is the type of sound that helped scientists locate a type of woodpecker that was believed to be extinct!

Discussion Questions:

What is the scientific study of birds called? [ANSWER: Ornithology (say: or-nah-THA-lo-gee)]
Why do you think some scientists didn't believe the group that claimed to have spotted the ivory-billed woodpecker?
What changed the scientists' minds?
Do you think that bird watching is an easy thing to do? Do you think it is an interesting task? Why or why not?

Follow-up Activity:

Log on to http://bna.birds.cornell.edu/BNA/demo/account/Ivory-billed_Woodpecker/ to see a photo of the ivory-billed woodpecker.

Article Three: HOT…HOTTER…HOTTEST

Getting Started:

Here are two quick math problems to get this article started. Before reading, let students know that the warmest year in the past 119 years (1998) occurred between the years 1990 and 2000. However, don't reveal the year just yet. Tell younger students that the sum of all the digits in the hottest year is 27 (1+9+9+8). Have students use the problem solving strategy "Guess and Check" to find the answer. Ask older students to use these clues to find out which year was the hottest: The year is NOT divisible by 5. The year is divisible by 2. The sum of all the digits in the hottest year is greater than 25.

Discussion Questions:

The largest unusually warm areas over all of 2004 were in Alaska, the Caspian Sea, and the Antarctic Peninsula. How will warm temperatures in these areas affect the Earth, especially the ocean?

Follow-up Activity:

1. Share this fact with kids: The highest temperature recorded this summer in Death Valley, CA (129°F) is about the same temperature as a piece of meat—fully cooked! (The meat that is, not the oven you cook it in.)

[Page 22-23]

SEA QUERIES

Getting Started:

In this issue, the *Sea Queries* focus on how long birds incubate their eggs, snail slime, the Earth's water, and fish named wahoo! Begin by telling students they will read about these topics. Have them write their own questions before reading the page.

Key Words in Context:

While reading Sea Queries, encourage students to use the picture and context clues to determine the meaning of the following words. Instruct students to underline these bold words once and the clues twice.

incubate: to keep eggs warm until they hatch
delicate: soft, fragile, or sensitive
glide: move smoothly
contracts: shrink or reduce
expands: get bigger or enlarge
regions: part or area

Did You Know…? [Page 22]

For a visual comparison between the largest and smallest eggs, compare a cantaloupe and a few peas on a group work table.

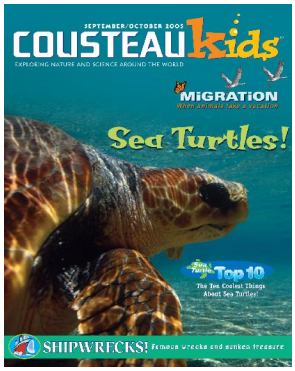
Did You Know…? [Page 23]

To demonstrate how much water is used during a toilet flush, fill two recycled milk containers (gallons) with water. Compare this to the number of gallons wasted by a steady faucet drip (100 gallons). Then have kids predict the number of 8-oz. plastic cups equal to one gallon. [ANSWER: sixteen 8-oz cups (128 oz.)=one gallon]

Note: Don't spill the water down the drain! Use it to water classroom plants or flowers and plants on school grounds.

Follow-up Activity:

Encourage students to e-mail *Sea Queries* to cousteaukids@weeklyreader.com. Or, mail to: Cousteau Kids! Sea Queries c/o Weekly Reader, 200 First Stamford Place, PO Box 120023, Stamford, CT 06912



Cousteau Kids Teaching Guide
September/October 2005
Editor: Melissa E. Norkin

COUSTEAU kids

September / October Activity Page

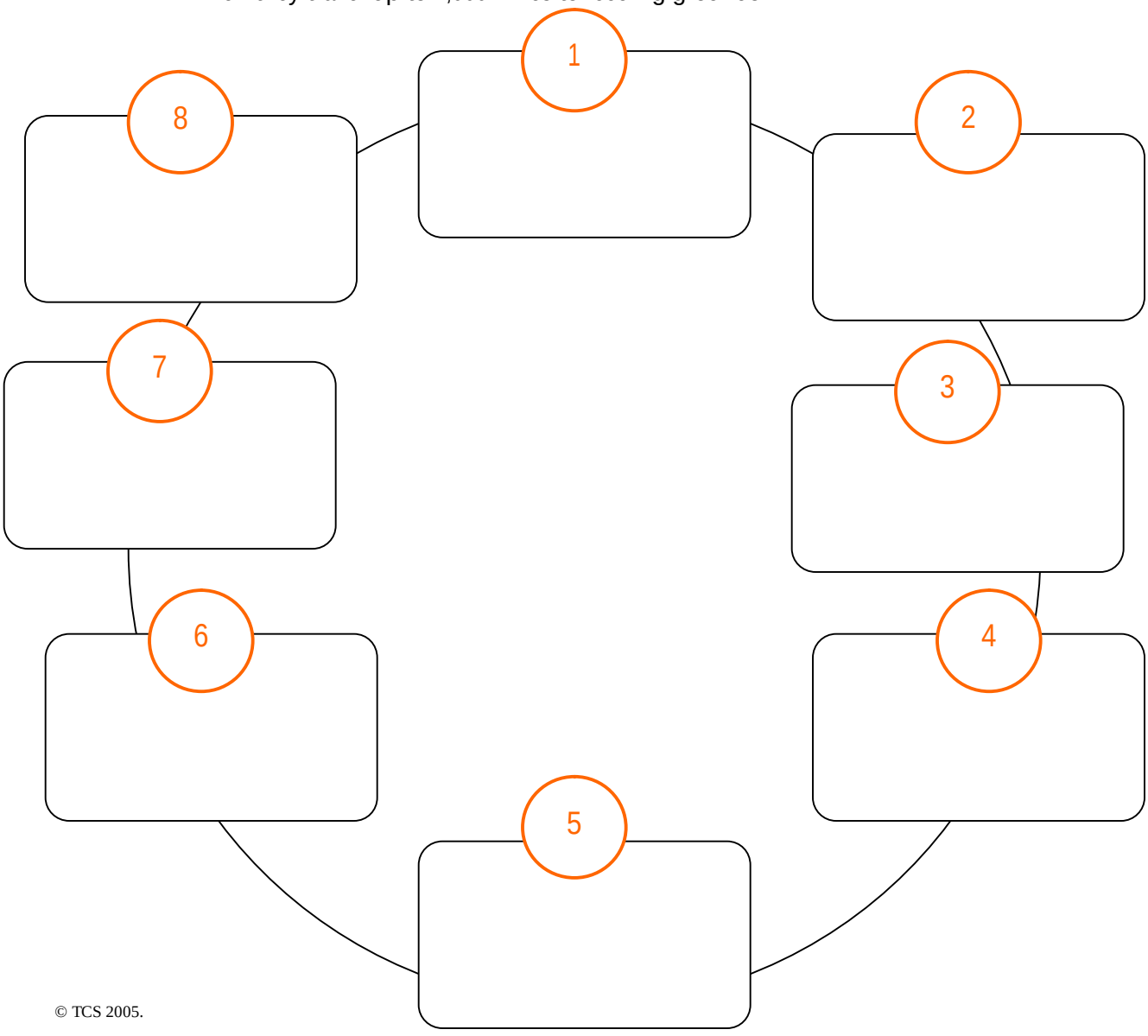
Name _____ Date _____

LIFE OF A LOGGERHEAD

Life as a loggerhead isn't easy. Loggerheads (and all sea turtles) have to deal with and overcome a lot of hurdles even before they are born.

Directions: A circle chart is an organizer you can use to show the sequence, or order, of events. Put these events in a loggerhead's life in order using the circle chart below. Then draw a picture for each.

Baby loggerheads float in the ocean within beds of sargassum weeds.
The mother covers up the eggs with sand and then returns to the sea.
Male and female loggerheads mate at the nesting beaches where they were born.
Hatchlings crawl to the surf, which takes about 1 to 2 days.
Loggerheads travel thousands of miles to their nesting beaches.
Females take about 1 to 2 hours to lay all the eggs for one clutch (nest).
After 6-11 weeks, hatchlings cut their way out of their shells.
Then they travel up to 7,000 miles to feeding grounds.



COUSTEAU kids

September / October Activity Page

Name _____ Date _____

MIGRATION

When animals take a vacation!

Whether by air, land, or sea, many animals take a winter voyage. This trip is called migration. True animal migrators make a round trip from one place to another, and then return back again in the spring.

Directions: A definition map is an organizer that you can use to present a new word or the main idea of a passage. Fill in this definition map for the word migration.