



January 6, 2012

Welcome to the 2012 Concord Geography Quest. This year's *Migration Quest* takes us on a trip around the world following the migration paths of different animals.

The Geography Quest is an annual PTG sponsored event designed to let families explore geography together while learning a bit about history and how to use reference tools. Remember, this is for FUN! It is not another assignment or a contest. It is intended for students of all ages. Some of the questions will be well above the Kindergarten level. A smiley face — ☺ — indicates the easier questions; black diamonds — ◆ — indicate the challenging questions. Please use the following suggested goals for the number of questions to be answered by grade level:

Kindergarten – 1-5 questions	3 rd grade – 20-40 questions
1 st grade – 5-15 questions	4 th grade – 30-55 questions
2 nd grade – 10-25 questions	5 th grade – 40-68 questions

While each child's *Quest* will be scored this score is only for their own information and is not recorded anywhere or considered in any academic evaluation.

Use this copy to record your answers. Electronic versions will be made available to each school. Please return the Quest to school by **Monday, February 6. (Remove this cover sheet before returning the Quest. Be sure to include the student's name, grade and teacher's name on each page.)**

If you have any questions, please do not hesitate to contact us. Have fun!

Mary Ellen Horcher, Julia Anastos, Alcott
mehorcher@yahoo.com and *julia.anastos@verizon.net*

Anne Mullaney and Carla Macy, Thoreau
anne.mullaney@gmail.com and *cm_em@yahoo.com*

Nathalie McCarthy and Heather Bout, Willard
nathaliemc@comcast.net and *heather@rolphotography.com*

The Migration Quest Suggested Resources

Below is a list of books that can help you answer some of the questions in the Geography Quest. You'll find many of these books, as well as a few others, set aside at the Alcott, Thoreau, Willard and Concord Public libraries.

National Geographic Student Atlas of the World, 3rd edition and *National Geographic Kids World Atlas, 3rd edition* will help with many of the answers, particularly for Questions 7, 9, 14, 21, 32, 44, 46, 49, and 52)

100 Natural Wonders of the World by Bill Yenne, 1995 (Questions 15, 16, 25, 26, and 43)

Africa for Kids, Exploring a Vibrant Continent (19 Activities) by Harvey Croze, 2006 (Question 44)

An Extraordinary Life by Lawrence Pringle (Question 18)

An Ocean Desert, The Sargasso Sea by Francine Jacobs, 1975 (Question 51)

National Geographic Great Migrations by K.M. Kostyal (Question 40)

Related Reading List (For Fun!)

Amazing Nature Marvelous Migrations by Tim Knight

Canada Goose by James V. Bradley

Migrating with the Humpback Whale by Thessaly Catt

National Geographic Kids, Amazing animal Journey by Laura Marsh

Planet Arctic, Life at the Top of the World by Wayne Lynch

Sockeye's Journey Home, The Story of a Pacific Salmon by Barbara Gaines Winkelman
Smithsonian Oceanic Collection

The Far-Flung Adventures of Homer the Hummer by Cynthia Furlong Reynolds

Tibet, Enchantment of the World by Patricia Kummer

Web Resources

www.allaboutbirds.org

<http://arctic.fws.gov/birdmig.htm>



Migration: The movement of large numbers of creatures back and forth between their spring or summer breeding grounds and their winter territories. Migration is seasonal, predictable and repeated every year.

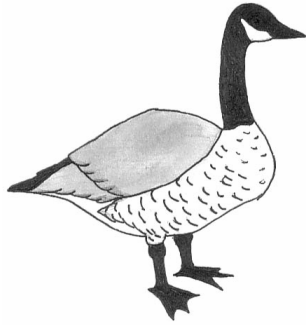
Did you hear and see the Canada Geese flying south through Concord this past October?

Have you noticed that the orange and black Monarch Butterflies disappear in the fall only to reappear in the spring?

These are examples of migration, when animals — including birds, insects, mammals and fish — move to different locations for specific seasons of the year.

Not all creatures migrate. Of those who do, some travel short distances while others undertake longer journeys. Some animals travel north and south. Others travel to different elevations, going up and down the sides of mountains. Some animals make their journey in many small steps. Others do the entire trip (which could be very long) in one continuous voyage. Whatever the distance, migrating animals do not go back and forth between locations simply to find warmer weather. They migrate to find better living conditions: a more abundant food supply, safety from predators, or the best environment for raising their young. How they successfully stay on course and find their way is still not fully understood. Scientists believe that migrating animals navigate by several means that include visual landmarks, the sun and stars, the Earth's magnetic field and an inner compass.

What's it like to be a migrating animal? This year's Quest invites you to imagine yourself as one. Travel around the world. Face the thrills and perils of your annual journey. Come, join us. Find out what it's like to be an animal on the move.



What if you were a Canada Goose?

You are a bird with a pale chest, black head and neck, and a white band under your chin. You are 35 inches long and weigh 12 to 15 pounds. Your honking is a well known sound throughout the United States. When you travel with other Canada Geese you travel in a distinctive “V” formation. This formation makes it easier for the birds to fly. The lead bird cuts through the air resistance, making an invisible path through the air. The birds that follow don’t have to work quite so hard to keep up. Geese change position frequently; this way no one goose has to do all the hard work of leading the others.

Birds are the greatest travelers of the animal kingdom: nearly half of the world’s 8,530 known species of birds migrate. Nearly 75% of the 650 bird species in North America migrate.

As a young goose you learned to migrate from other geese; it is not an instinctive behavior. Recently many geese have stopped migrating and have become “resident.” They have no incentive to migrate if they can find an appropriate place to live. They need water that is free of ice and land that is free of snow so that they can forage for grasses and grains to eat. Resident populations of geese are found along the Atlantic Coast and in some parts of the central United States.

As a migrating Canada Goose you travel south in the fall passing through Concord. You are moving from your summer home on the coast of Labrador in northern Canada to your winter home on the shores of North Carolina.

☺ *Concord, Massachusetts is in the region of the United States called New England. Name the other 5 New England states.*

1. _____
2. _____
3. _____
4. _____
5. _____

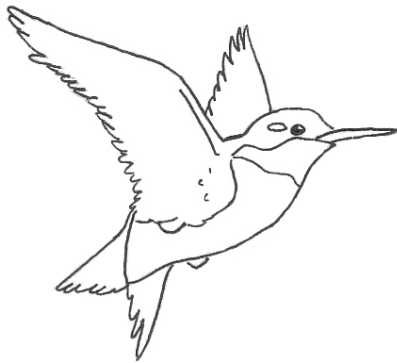
☺ *The Canada Geese enjoy the ponds of Concord. Name one pond in Concord.*

6. _____

☺ *What is the capital of North Carolina?*

7. _____

8. *On the world map on the last page of your Quest, draw a blue line from Labrador, Canada through Concord, Massachusetts to the shores of North Carolina, one migratory path of the Canada Goose.*



What if you were a Ruby-throated Hummingbird?

Barely three inches long with a bright green back and a fiery-red throat (if you are male), you are one of the world's smallest birds. You spend your summers in Canada and the eastern United States. You might even live in the Concord-Carlisle area, drinking red sugar water from the hummingbird feeders located in many backyards. In addition to eating small spiders and insects, you hover over flowers using your long tongue to extract the nectar, taking several licks every second. You can hold your position while flying because of a unique figure-eight motion of your wings — this enables you to fly forward, backward, sideways, up, down and even upside down for short distances. Come the chill of fall, when flowers wither and there is no more food, you head south. For the long trip you consume enough nectar over 7 to 10 days to more than double your size. Then you start flying south to Mexico and Central America.

Fat is the ideal fuel for migratory birds because it provides twice as much energy as carbohydrates. In non-migrating birds, fat deposits account for less than 5% of the bird's weight. In birds that migrate a short distance, fat deposits account for 15 to 25% of their body weight. Birds that migrate a long distance have fat reserves that equal more than 50% of their body weight. (A 3-gram hummingbird adds 2 grams of fat reserves before migrating.)

When you fly over the Gulf of Mexico it takes you 10 hours, flying at a speed of 50 miles an hour (80 km per hour) to cross the water. This means you're beating your wings at least 40 times per second for 10 hours without pause —that's 1,440,000 times. You are very tired by the time you reach land! You might live in Honduras or Guatemala from September until March. You

wait until the spring flowers bloom to travel northward. This way you can find plenty of food along your route, arriving in Concord and other northern locations in April or May.

A Ruby-throated Hummingbird may migrate from Concord, Massachusetts to the country of Honduras. What is the capital of Honduras?

9. _____

How many miles is it from Concord, Massachusetts to the capital of Honduras? (You may use Boston, Massachusetts if your map does not show Concord.)

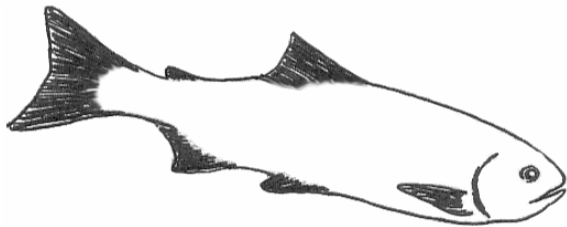
10. _____

☺ *Honduras stretches from one body of salt water to another. Name the sea and the ocean that border Honduras.*

11. _____

12. _____

13. *On the world map on the last page of your Quest, draw a red line from Concord, Massachusetts across the Gulf of Mexico to the capital of Honduras, one migratory path of the Ruby-throated Hummingbird.*



What if you were a Pacific Sockeye Salmon?

As an adult Sockeye Salmon you are slim and streamlined, weigh seven pounds and are bright red with a green head. You were born in a cool, fresh-water stream at the far end of the Fraser River in British Columbia, Canada, the largest salmon river in the world. You lived there for one to three years as a little “fry.” Then you swam to the Pacific Ocean joining 10 billion other young salmon pouring into the sea. For a few years you swam many miles in the ocean. Some salmon swim up to 10,000 miles around the Pacific Ocean! But the most amazing thing of all is that, eventually, you make your way back to the same stream

Salmon are anadromous: they spend part of their lives in fresh water and then travel to the ocean to feed until maturity. This is in contrast to pelagic species which are born and live solely in the sea.

where you were born. When you get close to the mouth of the river that leads to the stream where you were born, you begin to smell the stream's special scents. You then "follow your nose" to your home stream.

As a mature salmon you stop feeding as you enter fresh water, living on stored body fats. You struggle for weeks against churning rapids, 10-foot high waterfalls, obstructions in the form of fallen logs and rocks, and the ever-present danger of hungry bears. Finally, bruised and travel-worn, you reach the placid waters of the spawning river where you were born. You may have traveled as far as 1,000 miles (1,600 km) upstream! The completion of this journey is also the end of your life cycle. Pacific salmon, unlike Atlantic salmon, die once spawning is complete.

The mouth of the Fraser River pours into the Pacific Ocean at the site of the largest city in British Columbia, Canada. What is the name of that city?

14. _____

The Pacific Ocean is the world's largest ocean. Its surface area is bigger than all the dry land area put together. What percentage of the world is covered by the Pacific Ocean?

15. _____

Why is the edge of the Pacific Ocean called the "Ring of Fire?"

16. _____

17. *On the world map on the last page of your Quest, use green to draw one migration path of the Sockeye Salmon. Here's how: Draw a small green circle under the shoreline of Alaska. Now draw a green line showing the Fraser River. Connect your Fraser River line with the circle.*



What if you were a Monarch Butterfly?

You have a distinct orange-and-black pattern and a wingspan of 3.5 inches (8.9 cm). Even though your wings look very fragile, they are strong enough to help you migrate nearly 2,000 miles (3,226 km) to the spot, maybe even the exact tree, where your ancestors stayed during *their* winter migrations. There you spend the winter in a semi-dormant state, half-awake and half-asleep, with millions of other Monarchs. When thousands of you cluster on the same tree, you turn it into a butterfly tree!

At some point on *your* migration south from Canada, a researcher in Minneapolis, Minnesota tags your wing in order to track your pathway. This procedure has been done since the 1930s. Today volunteers tag 75,000 to 100,000 Monarchs every year. A few months later when you are clustered with other Monarchs on your winter tree in El Rosario, Mexico another volunteer sees your tag and records that you have traveled 1,790 miles (2,887 km)!

Downtown Minneapolis is unusual in that it has 5 miles (8 km) of skyways: enclosed bridges connecting buildings. People use these skyways to move about the city without going outside in the cold of winter or the heat of the summer.

When the days get longer and warmer you begin the long trip back to your summer home. Predators usually leave you alone. They have learned that Monarch Butterflies don't taste good. However, even without being eaten, you have a short life span. Since you will soon die, you must lay your dot-sized eggs on a milkweed plant partway through your journey. There your offspring will go through their life cycles from egg to caterpillar to chrysalis to adult butterfly and continue the migration route. No single butterfly lives long enough to complete even one round-trip. It takes many generations to complete the journey.

In Minneapolis, the average temperature in January is 12°F (-11°C). In Mexico City the average temperature in January is 57°F (14°C). Why would the Monarch Butterfly prefer to spend its winters in Mexico rather than in Minnesota?

18. _____

Duluth, Minnesota is the largest freshwater port in the world. It is at the western end of a 2,342-mile waterway that was opened in 1959 and that links the Great Lakes to the Atlantic Ocean. What is the name of this waterway?

19. _____

☺ *The Aztec civilization thrived in Central Mexico from the 1300s until the early 1500s when they were conquered by the Spanish. The Aztecs are credited with the discovery of a delicious treat, made from the fruit of the cacao tree. What is the name of this treat?*

20. _____

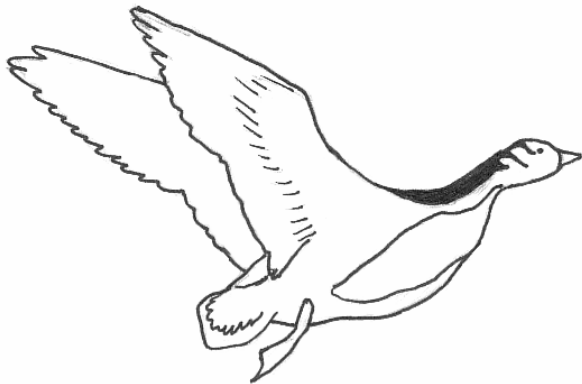
Mexico is divided into states; its full name is the United Mexican States. How many states does Mexico have?

21. _____

Name the river that flows between Mexico and Texas.

22. _____

23. *On the world map on the last page of your Quest, draw an orange line representing one migration path of the Monarch butterfly. Draw your line from central Canada, through Minneapolis, Minnesota to Mexico City, Mexico (which is very close to El Rosario, Mexico).*



What if you were a Bar-headed Goose?

You are a 30-inch long goose who gets your name from the tawny stripes across your white head. Your migration path is not very long but it is quite extraordinary. In early spring you travel from northern India, across Nepal and Tibet to southern China, a distance of only 500 to 750 miles (806 to 1210 km). However, unlike most birds who migrate from India to China, you do not go *around* the huge mountain range of the Himalayas, you fly *over* these famous mountains at an altitude of 30,000 feet (9,140 m). That's even higher than Mount

Temperatures change with altitude. For every 1,000 feet that you go up, it gets 3.5°F colder.

Everest itself! At these altitudes you can take advantage of the prevailing winds, which are much stronger and steadier at high altitudes. Of course, at these altitudes the air temperature is much colder, making your migration that much more challenging.

Tibet, a region of China, is sometimes called the “Rooftop of the World.” It is ringed by mountains and is the highest and largest plateau in the world. What is a plateau?

24. _____

The mountains that circle the plateau of Tibet are the highest in the world. Nowhere else are there peaks over 24,000 feet. The highest mountain in the world, Mt. Everest, is in this region. It is 29,029 feet (8,848 m) high and is located on the border between Tibet and Nepal. This mountain has different names in different countries.

25. *What is this mountain called in Tibet?* _____

26. *What is this mountain called in Nepal?* _____

◆ *Give the name, location and height of the highest mountain on each of the seven continents.*

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

33. _____

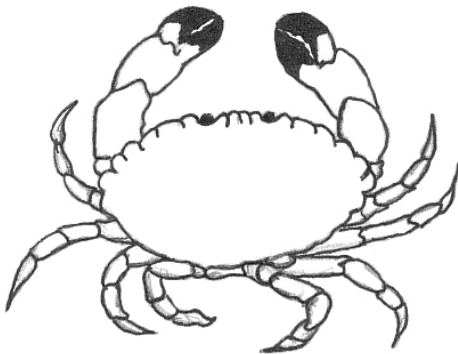
☺ *The symbol of Tibet is a mythical beast called the Snow Lion or Sen-ge. It is a white lion who is believed to jump from mountain peak to mountain peak without touching the snow. The United States has a bird as its symbol. What is it?*

34. _____

☺ Draw a picture of a goose flying over the mountains of Tibet.

35.

36. On the world map on the last page of your Quest, draw a brown line representing one migration path of the Bar-headed Goose. Draw your line northeast from Kanpur in central, northern India across Nepal about 700 miles into south-western China.



What if you were a Red Crab?

A very red, very big crab whose shell is 4.6 inches (11.6 cm) wide, you are one of the 100 million red crabs who live in the hills on Christmas Island in the Indian Ocean, just south of Indonesia. During the wet season in November or December you begin your migration from your inland home to the sea to breed and lay eggs. Although the journey is not a long one, it is a dangerous one. Once you leave your burrow you must travel very quickly so the hot sun does not dry you out. There are so many of you traveling that it's hard for people to walk without stepping on you. Since you crawl straight through towns, you must watch where you go. Beware of cars when you cross roads. Don't follow the other crabs who go right into people's homes —and then get swept out with a broom!

If you survive these dangers and a bird does not eat you, you reach the ocean in about three weeks. You stay in the beach sand until your eggs are ready. Then you release your crab larvae

into the ocean and return home. About a month later your offspring travel to the inland hills on their own. They make this journey when they are still very small — 1/5 of an inch long! Moving as a mass they look like a red carpet. These tiny crabs are even harder to keep out of houses than the adults. Christmas Islanders find little red crabs everywhere in their homes: under beds, on lampshades, in the cabinets. To reduce the number of crabs killed by vehicles during the migration, “crab crossings” are being constructed in roads which cross main crab migration paths. Other conservation measures used by communities are road closures and traffic detours around the major migration paths during peak periods of the migration. When your crab offspring are grown they will repeat this annual migration.

◆ *When on land, red crabs eat leaves, seedlings and seeds that are on the forest floor of the rainforest. What is the impact of millions of these crabs clearing the rainforest floor?*

37. _____

What is the latitude and longitude of Christmas Island? (Don't forget to include N, S, E or W in your answer.)

38. _____

☺ *Draw a road sign to warn the people of Christmas Island that red crabs cross here.*

39.

40. *On the world map on the last page of your Quest, draw a red “X” where Christmas Island is.*



What if you were a Wildebeest?

Fifty inches tall at the shoulder, weighing 350 to 550 pounds, you are a tawny-colored, shaggy antelope with a wide darker stripe down the middle of your face and curved horns by your ears. You are one of the few mammal species who migrate. Every April, at the end of the wet season, you join a massive mammal migration across the Serengeti Plains of Africa. Along with 1,500,000 other Wildebeests, 200,000 Zebras, and 500,000 Gazelles you follow the rains and cross the nearly 350 miles of African plains that stretch from Tanzania to the Kenyan border. Your migrating herd is so densely packed together that, from a distance, it looks like a black flowing river. Throughout the journey you search for better food and water supplies. As you travel you take only what you need and then you move on. The elephants in front of you eat the tall coarse grass, clearing the way for the migration of other animals across the plains. In turn, you and the other Wildebeests and the Zebra herds eat the shorter, tender shoots. You leave the even finer grasses for other animals, like the Thompson Gazelles, to eat. This is called the grazing sequence. By the time you complete the return journey, the grasses and plants of Tanzania are lush once more. By following the rain, you and the other animals ensure that you have plenty of grass and shrubs to eat.

Each year 500,000 wildebeests are born in the region of the huge Ngorongoro crater in Tanzania. One hundred square miles in area, it is the world's largest "caldera." What causes a "caldera?"

41. _____

Concord, Massachusetts is 26 square miles in area. The Ngorongoro crater is nearly four times as big as Concord.

The equator, an imaginary line that divides the globe into the northern and southern hemispheres, passes through Kenya, just north of Tanzania. How does being near the equator impact Kenya's weather?

42. _____

What weather condition can be found at the top of Mt. Kilimanjaro that you would not expect to find near the equator?

43. _____

Why does that weather condition exist at the top of Mt. Kilimanjaro?

44. _____

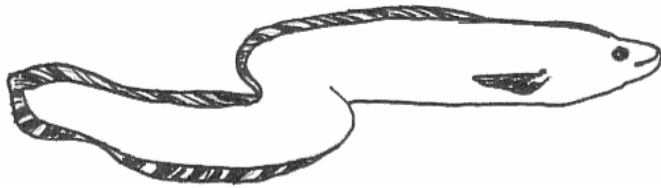
☺ *Draw a picture or describe the Kenyan flag.*

45. _____

*Most Tanzanians speak Swahili. In English, plurals are created by adding an “s” to the **end** of a noun. In Swahili, the letters in **front** of the noun let you know if the noun is singular or plural: “m” indicates singular, “wa” indicates plural. If “mtu” means “one person,” how would you write “people?”*

46. _____

47. On the world map on the last page of your Quest, draw a purple line representing one migration path of the Wildebeest. Draw your line north from the Ngorongoro Crater in Tanzania just into the southern part of Kenya.



What if you were a European Eel?

You look like a six-foot long snake, but you are really a fish. You live in the River Severn in England for 10 to 20 years until it is time for you to breed. Then you begin your tremendous voyage back to the ocean spot where you were born. Hundreds of millions of other eels from rivers all over Europe join you for this migration.

Before your journey you gain weight and change color from yellow to silver. Then in the fall you travel down the rivers, into estuaries and into the Atlantic Ocean. In your rush to get to the sea you may slither across short patches of dry land to get to another body of water. Changing from freshwater to saltwater does not bother you. You swim for 3,000 miles (4,839km) to the Sargasso Sea. The whole trip takes you at least five months. The Sargasso Sea is located in the Atlantic Ocean south of Bermuda. It looks like an enormous seaweed meadow the size of Australia. Beneath its brownish mat of seaweed the water is warm, very blue and highly salty. You swim the entire journey deep under water—from 500 to 2,500 feet (152 to 762 meters) under the surface. Your cousins, the American Eels, come to the same breeding grounds from the rivers of North America.

You arrive in the Sargasso Sea in March or April—and then you disappear! No human has even seen adult eels in the Sargasso Sea, but they have seen their young. Scientists believe that you spawn deep in the ocean and then die. Your eggs float to the top of the ocean and go through their life cycle of larvae to small eels about two inches long, called elvers or leaf fish. The young eels drift in the ocean currents of the Gulf Stream for two or three years before they journey to their ancestors' freshwater streams in Europe or North America. There your descendants will live until it is time for them to begin their own migration to the Sargasso Sea.

Trying to sail through the Sargasso Sea, an area of little reliable wind, becalmed Spanish sailing ships were often forced to throw their war horses overboard to conserve water. Thus this area is sometimes called the “Horse Latitudes.”

The River Severn is the longest river in England; it is 220 miles long. What is the name of channel at the mouth of the River Severn?

48. _____

The River Severn in England is not the only “severn river” in the world. Name one other state, province or country where a severn river is located.

49. _____

◆ *The River Severn in England is the site of the Severn Bore. What is a “river bore” or “tidal bore?”*

50. _____

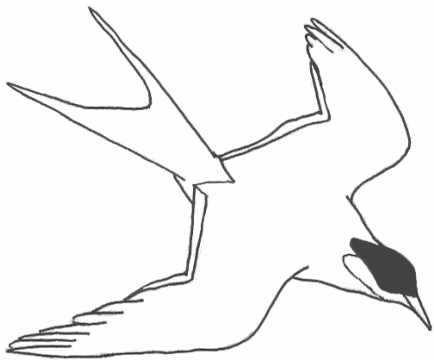
When Christopher Columbus saw the dense seaweed of the Sargasso Sea he thought he was close to land. He had been sailing from Spain. In which direction was he heading?

51. _____

The Sargasso Sea is a huge oval of relatively still waters that is surrounded by some of the strongest currents in the world. Name at least one of those currents.

52. _____

53. *On the world map on the last page of your Quest, draw a squiggly black line representing one migration path of the European eel. Draw your line southwest from the southwestern tip of England and end in a big circle in the Atlantic, just south of Bermuda.*



What if you were an Arctic Tern?

Thirteen inches long, you are a gray gull-like bird with a black cap, white throat and blood-red beak. You have the distinction of being the bird with the longest round-trip migration in the world. Each year you travel nearly 30,000 miles (48,270 km) — more than the circumference of the globe. Some terns live 25 years or more — which means you may well fly more than 600,000 miles (965,400 km) in your lifetime!

Every year you migrate from the North Pole to the South Pole and back again in search of better food. In June you make your nests in the Arctic near Baffin Bay and the western shores of

Greenland. One nest of an Arctic Tern has been found only 450 miles (724 km) from the North Pole! Not all terns go that far north, other nests have been found off the shores of Massachusetts.

As the northern hemisphere gets colder, you head south, first across the Atlantic Ocean to the shores of Spain and then down the western coast of Africa to Antarctica; you often travel 200 miles a day over the open ocean. You spend December to March in Antarctica enjoying the southern hemisphere's warmest months. When this area turns colder, you head northward, passing Boston in May as you continue your return trip to the Arctic.

Few other animals in the world enjoy as many hours of daylight as an Arctic Tern. The sun shines most of the day during your nesting season in the north. Daylight is almost continuous when you are in the southern hemisphere as well.

The largest mirage (or optical illusion) in the world, spanning hundreds of miles across, is in the Arctic. It was first discovered by Admiral Robert Edwin Peary and thought to be a large land mass with "hills, valleys and snow-capped peaks" covering at least a third of the horizon. What is the name of this mirage that is considered to be one of the strangest places on earth?

54. _____

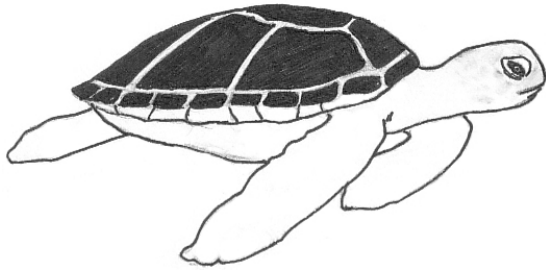
☺ *Look at a globe. Which half of the globe has more land mass, the northern hemisphere or the southern hemisphere?*

55. _____

◆ *If you wanted to see a true sunrise at the South Pole, what month should you visit?*

56. _____

57. *On the world map on the last page of your Quest, use gray to draw one migration loop of the Arctic Tern. Start at Baffin Bay, then follow the coasts of Europe and Africa along the eastern side of the Atlantic Ocean, down along the coast of Antarctica. Then continue your loop back up the western side of the Atlantic and back to Baffin Bay.*



What if you were a Green Turtle?

You are an excellent swimmer even though you weigh 330 pounds (150 kg) and your body is covered with a heavy olive green shell called a carapace. You have skin over your ears so you are almost deaf. You have no teeth and eat mostly sea grasses and algae. Every three or four years you swim non-stop for six weeks from your feeding grounds off the coast of Brazil to Ascension Island, a tiny island in the middle of the South Atlantic. You make the 1,400 mile (2,250 km) trip to reach the very beach where you were born. Scientists still do not understand how you navigate to this island.

After you arrive on the island you dig a nest in the sand, lay a clutch of eggs (about 100), cover the spot and return to the ocean. You come back to the sand to dig a new nest and lay another clutch of eggs three or four more times. Then you return to the coast of Brazil. Fifty to 70 days later your 2-inch long (5 cm) babies hatch at night, scurry to the waves and spend years swimming back to Brazil on their own. Throughout the journey the green turtle faces many dangers, including birds, crabs, sharks, fish and humans, who hunt turtles on Ascension Island for their shells, skin, oil and meat.

When it is noon on Ascension Island in January, what time is it in Concord, Massachusetts?

58. _____

59. Which of the following cities are in the same time zone as Ascension Island.

*Scoresbysund, Greenland
Reykjavik, Iceland
Dublin, Ireland
London, England
Paris, France*

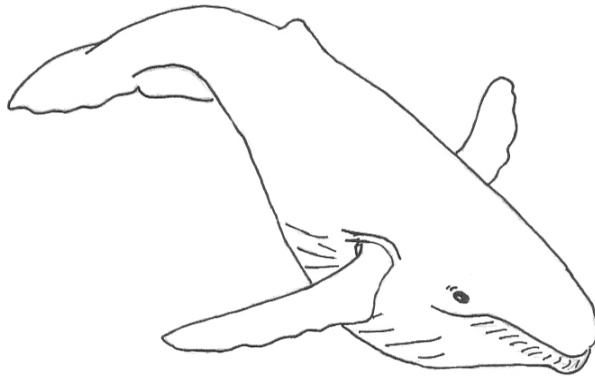
*Lisbon, Portugal
The Azores
Cape Verde Islands
Accra, Ghana
Lagos, Nigeria*

The second longest river in the world is in Brazil. While not as long as the Nile, it is the river with the largest volume of water in the world. At the mouth of this river the water rushes into the ocean at a rate of 52 million gallons per second. What is the name of this river?

60. _____

The average family of four in Concord uses 324 gallons of water a day. Each second there is enough fresh water flowing out of the river you named in answer #60 to provide water for that family for 442 years!

61. *On the world map on the last page of your Quest, draw a pink line representing one migration path of the Green Turtle. Draw your horizontal line westward from Ascension Island to the shores of Brazil.*



What if you were a Humpback Whale?

You are an adult whale who is 40 to 50 feet (12 to 15 meters) long and weighs 25 to 45 tons. Your Latin name is “Megaptera Novaeangliae” which means “Big-winged New Englander.” You’re called that because you were first sighted off the shores of New England and you have long white side flippers, often 15 feet long.

After your offspring are born in early spring, you leave the warm waters around the Dominican Republic where you spent the winter and migrate to the cooler waters of the Stellwagen Bank off the shores of Boston where you feed. You have the endurance of a long distance swimmer, traveling over 3,100 miles (4,988 km) in three months with almost no rest along the way. You swim at 3 to 9 miles per hour (4.8 – 14.5 km per hour).

A full grown Humpback Whale is longer than 10 third grade students lying in a row head to foot and is heavier than the combined weight of 1,000 third grade students!

You are an active, acrobatic whale. You can throw yourself completely out of the water (breaching) and swim on your back with both flippers in the air. You are also known for “singing” long, complex “songs.” A typical song lasts from 10 to 20 minutes, is repeated continuously for hours at a time, and changes gradually from year to year. The song you sing depends on where you live. Humpback whales living in the North American Atlantic Ocean sing one song. The whales living in the North American Pacific Ocean also sing one song—but it’s a

different song from the one sung in the Atlantic. It appears that all the singing whales are males and that the songs may be a part of mating behavior.

The Dominican Republic is found on the eastern portion of the Caribbean island of Hispaniola. What country is found on the western end of Hispaniola?

62. _____

What is Stellwagen Bank?

63. _____

◆ *How was Stellwagen Bank formed?*

64. _____

Until 1755 Boston was the city with the largest population in America. Now New York City holds that honor with over 8 million people.

65. *What is Boston's current rank among the largest cities in America?* _____

66. *What is the population of Boston?* _____

67. *On the world map on the last page of your Quest, draw a yellow line representing one migration path of the Humpback Whale. Draw a vertical line from the Dominican Republic to the shores of Boston.*

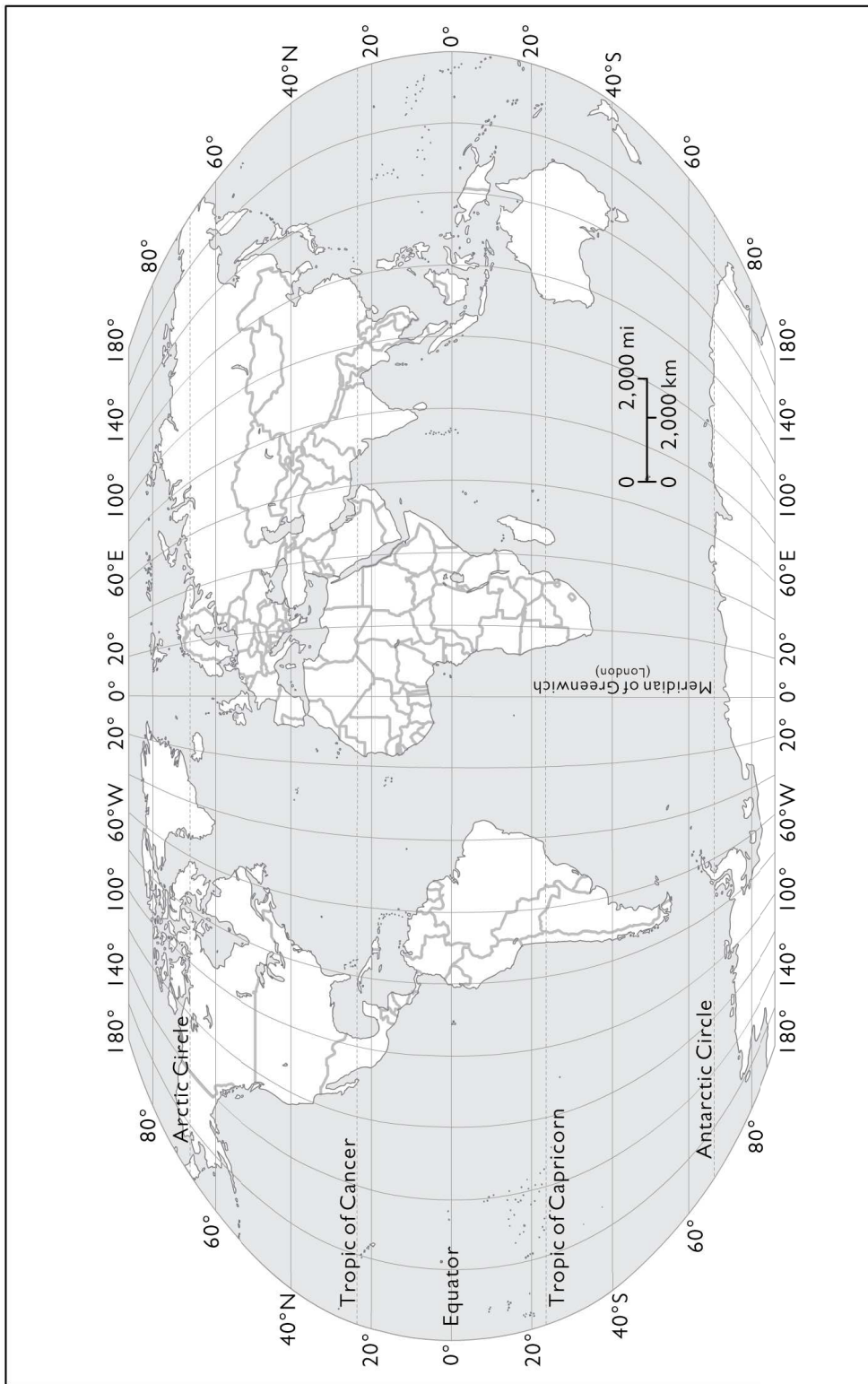
**DRAW A PICTURE OF YOURSELF
ON THE BACK OF YOUR QUEST.**

What if you were Yourself?

In this Quest, you've imagined yourself as being many different migrating creatures. Do you migrate? Do you go somewhere different in the summer and then return to Concord for the fall, winter and spring? Do you travel to the same place for vacations or holidays and then come back to Concord?

What places are part of your migrations?

68. _____



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THE WORLD

