

**lunar cycle** (lū nər sī kəl): The changing appearance of the moon as seen from Earth.

**migrate** (mī grāt): To pass from one region or climate to another usually on a regular schedule for feeding or breeding.

**migratory** (mī grə tōr ē): Having a way of life that includes migrations.

**model** (mäd əl): A simplified copy or representation of something to help human understanding.

**new moon** (n(y)ü mün): The moon's phase when its dark side is toward Earth.

**objective** (əb jek tiv): An aim or goal.

**pharmaceutical** (fär mə sūt i kəl): Of, relating to, or involved in pharmacy or the manufacture and sale of medicinal drugs.

**simulation** (sim yə lā shən): The imitation by one system or process of the way in which another system or process works.

**strenuous** (stren yə wəs): Marked by or calling for strength or energy.

**structured** (stræk chərd): Organized.

**threshold** (thresh hōld): A level, point, or value above which something will take place and below which it will not.

Accented syllables are in **bold**. Marks and definitions are from <http://www.merriam-webster.com>.

## FACTivity



In this FACTivity, you will learn about the migration of the red knot and why different areas where the red knot stops are important for the red knots' survival. This journey is one of the longest migratory journeys, marking close to 9,000 miles or 14,000 kilometers!

### Time Needed

Three 50-minute class periods

### Materials

- A copy of the map for each student (see map on page 46)
- Pencils (one for each student)
- Books or Internet resources about stopover locations and the red knot
- Paper to make pamphlets
- Colored markers

### Methods

1. First, take a map and locate each stop that the red knot makes on its migratory journey. Mark the Hudson Bay area, then the Delaware Bay area, Brazil, and finally Tierra Del Fuego.
2. After you have marked the areas on the map, draw lines in between the

points to mark the entire length of the journey.

3. Learn a little bit about each area and why it is important for the red knot.

To complete this activity, your teacher will divide the class into small groups. Each group will be assigned a migratory stop. (Note: If you have more than four groups, multiple groups can study the same stopover location).

4. Each group will pretend to be travel agents for the area assigned. You and other students are travel agents for red knot birds (not people). You will need to research your assigned stopover location and create a short presentation and pamphlet to entice the red knot to come and stop over at the assigned location. You will make a presentation to the class and can display your pamphlets on a bulletin board.
5. After you and the other students have shared your presentations, your teacher will facilitate a group discussion. This discussion will focus on the challenges of such a long journey and the importance of safe stopover locations.





Map by Lindsay Gnann.

Note to Educators: A rubric for this FACTivity can be found at <http://www.naturalinquirer.org>. After arriving at this Web site, click on educational resources and then lesson plans. Scroll down and you will see “Article Lesson Plans.” The rubric will be listed here.

If you are a Project Learning Tree (PLT) educator, you may use “Habitat Pen Pals” and “Web of Life” as additional activities.



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## Web Resources

### Shorebirds and Horseshoe Crabs

<http://www.delawareestuary.org/publications/factsheets/Horsecra.pdf>

### All About Horseshoe Crabs

<http://www.udel.edu/research/explore/loader.html>

### Smithsonian Migratory Bird Game

[http://nationalzoo.si.edu/scbi/migratorybirds/Education/Kids\\_Stuff/Woth\\_game/default.cfm](http://nationalzoo.si.edu/scbi/migratorybirds/Education/Kids_Stuff/Woth_game/default.cfm)

### Animal Planet Horseshoe Crab Information

<http://animals.howstuffworks.com/arachnids/horseshoe-crab-info.htm>

### U.S. Fish and Wildlife Service Blog

<http://www.fws.gov/news/blog/index.cfm/2011/5/3/Delaware-Betting-on-Survival-in-Delaware-Bay>

### PBS Video Series About Red Knots and Horseshoe Crabs

<http://www.pbs.org/wnet/nature/episodes/crash-a-tale-of-two-species/introduction/592/>