

Teacher's Guide for Odyssey

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Migration Stories

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Teacher's Note:

This guide contains project ideas, short answer, extended response, fill-in, and true/false with correction. The variation is designed to have the students think critically, as well as to test their comprehension. An answer key to the short answer sections can be found at the end of the guide.

Extended Response: Comprehension & Critical Thinking

The questions below can be used as written, simply answered in complete sentences or easily transformed into longer essay (ELA) style questions, or even research topics. In any case, have the students support their answers with details from the text or use critical thinking skills to create a thorough and interesting answer. The questions, essays and projects have been aligned with the **Common Core Standards**. Consider the level of your students when deciding how to use the questions.

"Ice Migration" p. 6-8

1. What occurs in Churchill during the months of October and November?
2. List the physical traits of a polar bear.
3. Why do polar bears make the annual trek to Churchill?
4. How do polar bears make their home on solid land?
5. What is the single biggest impediment to polar bear migration?
6. What are some of the effects of warmer weather on polar bears?

Essay: *Explain migration and how migratory patterns develop and change.*

"The Other Monarchs" p. 9-11

Read the article in its entirety and then fill in the blanks. Refer back to the text if necessary.

1. Most monarch butterflies live just a few _____.
2. Before laying their eggs on the leaves, monarch butterflies fatten up on _____.
3. Each summer, a 'super generation' of monarchs is born that can live for months and travel _____ of miles.

4. For many years, scientists believed that monarchs living east and west of the _____
_____ were two distinct groups.
5. The Butterfly Wranglers program connects _____ with science.
6. The Butterfly Wranglers are so good at what they do that _____ to _____ percent of all their caterpillars become butterflies.
7. An animal or plant that originates or grows in a certain place or region is referred to as _____.
8. In just two years, the 4,000 monarchs the wranglers raised have boosted the _____
U.S. wild population.

Summarize: Explain the Butterfly Wrangler program and the positive results discussed in the article.

"Their Trunks are Packed" p. 14-18

1. What does the diet of an adult African elephant consist of?
2. What occurrences are disturbing regular migration patterns?
3. When do elephants usually migrate? How do the reasons for traveling differ between the males and females?
4. What is the role of the matriarch in the herd?
5. Why are bulls and matriarchs poaching targets?
6. How is the herd at a grave disadvantage if they lose their matriarch?
7. What difficulties do migrating elephants face?
8. How does decreasing the birth rate of the elephants reduce environmental pressures on the region?
9. How do elephants communicate?
10. How is GPS aiding the elephants?

Activity: Read "4 Ways You Can Help" at the bottom of page 18. Which suggestions on the list have you done or can you do? Write about your experience.

"Africa's Serengeti" p. 19-21

1. Explain the physical characteristics of the Serengeti of eastern Africa.
2. How does a particular diet in a given region help animals to thrive?
3. Why do most of the larger animals of the Serengeti migrate?
4. What provides fertilizer for the plants of the Serengeti?
5. Why is most of the Serengeti protected by the Serengeti National Park and national game preserves?
6. What do you think is the best way to protect this ecosystem?

"The Duck Man's Marsh" p. 26-27

1. Why did Frank Robl declare that the marsh near his farm was the most important stopover in the central United States for these waterfowl and shorebirds?
2. What are some of the facts that we now know about this migration hotspot?
3. Why is the marsh, Cheyenne Bottoms, so appealing to the migrating species?
4. What are some big threats to the wetland?

Critical Thinking: Write a short essay using 2 different outcomes for the millions of migratory birds if Cheyenne Bottoms disappears.

"9,500 Miles to Go" p. 32- 35

Mark the following statements TRUE or FALSE. Provide the correct answer if false.

1. _____ Female horseshoe crabs will climb onto a high rock to lay her eggs.
2. _____ The Red Knots complete one of the most epic migrations in the entire animal kingdom.
3. _____ The Red Knots complete a 9,500 mile odyssey that will take them from the southern tip of South America to their breeding grounds in the Canadian Arctic.
4. _____ Today, the delicate balance between the Red Knots and the horseshoe crabs is thriving.
5. _____ Experts believe that poisonous horseshoe crabs have sped up the crash in Red Knot populations.
6. _____ The horseshoe crabs' unique blue blood is now used to produce a drug that helps identify bacterial infections.
7. _____ During the first leg of their journey, the Red Knot will travel more than 4,000 miles.
8. _____ Once reaching the Arctic tundra, the Red Knots will nest in blocks of ice.
9. _____ The Red Knot known as "Moonbird" is at least 20 years old and has flown about 19,000 miles of migration each year.
10. _____ Listing the Red Knot as 'threatened' under the Endangered Species Act will help protect the bird and its sensitive habitat.

"Winter in Hawaii" p. 36-39

1. To where do thousands of shorebirds and whales in Alaska migrate?
2. What are the different reasons that the Pacific Golden-Plovers and humpback whales migrate from Alaska to Hawaii?
3. What do plovers do once they reach Alaska?
4. How long will it take a humpback whale to swim from Alaska to Hawaii?
5. What factors contribute to why some whales leave on the migration later than others?

"Finding Our Own Way" p. 44-45

1. List some of the great examples of human navigation without GPS.
2. How does the gift of language help humans to sharpen observations about their travels?
3. Which things in our natural world offer navigators clues about the correct direction to travel?
4. What is the system referred to as 'etak'?
5. Do you think that if humans used LESS technology it would sharpen their senses and observation skill? Why or why not?

ANSWER KEY

"Other Monarchs"

1. *weeks*
2. *milkweed nectar*
3. *hundreds/thousands*
4. *Rocky Mountains*
5. *prisoners*
6. *80 to 85*
7. *native*
8. *western*

"9,500 Miles"

1. *False, dig a pit and buries eggs*
2. *True*
3. *True*
4. *False, in jeopardy*
5. *False, overharvesting*
6. *True*
7. *True*
8. *False, on the rocky, barren ground*
9. *True*
10. *True*