

Teacher's guide for Odyssey

November 2007

1. As we know reading comprehension is so important to students. The story *Dust Devil Shocker* on pg. 2 gives teachers a chance to practice comprehension.

As students read the article have them think about what they are reading (sounds simple enough, but not all students do this). Students make comments, questions, inferences, or connections (students connect to something they already know about) to the reading. For example, in paragraph one, students might say: I know how wide a football field is, or I have seen a small whirlwind picking up garbage on the sidewalk. They might ask: are whirlwinds seen in other parts of the country, or do they occur only in the mid- or southwest?

This will help focus student's attention on the reading. Have students write down their comments and questions.

2. Students make inferences. Explain to students that their response to this question has to be inferential. Why is it important we study the Martian dust devils? (perhaps we can one day recreate the powerful currents produced in the devils, for use on earth as an alternative energy source.)

Pg. 7 *Spirals in the Sky*

Suggested vocabulary (depending on grade level): gravitational, density, and elliptical.

1. Why are galaxies called "island universes"?
2. What are the three types of galaxies?
3. How do the centers of galaxies and hurricanes differ?

Pg. 11 *Dr. Mobius Speaks*

Students can create their own Mobius strips. Have the students describe the strip in their own writing.

Pg 15 *The Great Garbage Patch*

1. What is the difference between material being biodegradable and photodegradable?
2. Imagine yourself as a plastic bag. Describe your journey from store to ocean. Use details from the article to help with your writing.
3. Write an editorial to your local paper to promote recycling. Again, use the article to help you with your facts in your editorial.

Pg. 21 *The Supercoiling of DNA*

1. Try the DNA reenactment. Work in groups of two students. Each group selects questions (perhaps in review for a test) and answers. Place the question on the DNA rubber band (it will have to be short) and the answer on the other group member's rubber band. Place all the DNA threads in a container, and have each student draw out one. One student will read the question. Another student can answer it.
2. What is ciprofloxacin? Explain how it works. Why is ciprofloxacin important?

Pg 34 *The Kansas Killer*

1. Making an inference: Describe what you think happens inside a tornado, when the center acts like a vacuum and the outside of the tornado is a violent whirl, throwing air away from the center. (houses, other objects are pulled in and torn apart and tossed into the violent whirl, thrown away from the center)

Pg. 38 *Do the Twist!*

1. Think of the time you saw a large flock of birds (you probably thought about that when you read the article, if you were thinking while reading). Then explain this statement from the reading: The large swirling mass can also visually confuse a single predator, making it difficult to focus on a single member of the group, or creating an illusion of one large creature, too big for the predator to attack. Possible answer: A flock of birds can look like a large snake in the sky as it twists and turns. Another bird would be afraid of this huge creature. Also, with so many birds in the air the predator would have trouble or be alarmed at the large number of birds that the group consists of.
2. When trying to ward off attacking whales, can we say that a school of fish is safe? Does the school have safety in numbers? Explain using details from the story.