

[The Washington Post]

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PHOTOS BY LINDA DAVIDSON, GERALD MARTINEAU — THE WASHINGTON POST; SANDRA LEAVITT LERNER, BEN CHAPMAN FOR THE WASHINGTON POST

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On the
Wing

An Integrated Curriculum For The Washington Post Newspaper In Education Program

A Word About Something for Summer

Each of the INSIDE online guides has a theme with suggested activities for use in two or more disciplines within different grades. In this June guide we just want to have summer fun as we read *The Washington Post* and learn.

Find physics at a baseball game, swimming pool or amusement park. Take a road trip to lighthouses or count dragonflies. Celebrate a lunar walk and witness a solar eclipse. Many of the articles are models for writing. Read about an icon or observe a group at a swimmin' hole. Then write about an experience.

The content reflects the diversity of subjects, approaches and sources that can be found in every issue of *The Washington Post*. Activities are suggested to inspire reading, writing and learning through a stroll down the street or short excursions of the imagination.

The Post Sports section is exploring swimming coverage with more depth by giving every metro-area swimming team a page on a new Web site. Take the electronic plunge at <http://reachforthewall.com>.

Think you are so busy you might miss Post coverage of an event or topic? Set up an e-Replica alert.



Lessons: Learning is a lifelong activity that does not take summer breaks. The newspaper can be a key partner in developing an interest in many areas of knowledge.

Level: Low to High

Subjects: English, Science

Related Activity: Health

NIE Online Guide

Editor — Carol Lange

Art Editor — Carol Porter

Available Online

All *Washington Post* NIE guides may be downloaded at www.washpost.com/nie.

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Something for Summer

Learning does not stop when the academic year ends. The Washington Post reports on many worthwhile activities, provides calendars of events and includes maps for a Road Trip. This guide includes articles to inspire writing, reading and experiencing summer in the Metropolitan area.

Do a Crossword

Homophones sound alike and give some students problems with spelling. After discussing the meaning of "homophone," including its Greek root (*homophōnos*: *homos*, same + *phōnē*, sound), give students "Sounds Right to Me." Answers are found at the end of these suggested activities.

Six pairs of homophones are found in the crossword puzzle. Students might list the pairs of homophones found in the puzzle. For the remaining words, they are to provide the homophone correctly spelled. Students may also be asked to provide three to five additional pairs of homophones. Use the homophones in sentences to distinguish them in meaning and spelling.

Read a Book

Summer is a great time to read just for fun. Books can be read to follow a theme, explore an interest or learn about other people. Take Flight, in the sidebar, provides recent titles that celebrate the 40th anniversary of the Apollo 11 mission, lunar landing and walk on the moon.

KidsPost Reading Club in 2009 focuses on nonfiction books. Read biographies, works about discovery, history and science, animals and plants.

Although *The Post* no longer has a Book World Sunday section, book reviews are found daily in the Style

section. Older students may find titles there that they will enjoy.

Find a Fossil

Did you know that Maryland has a state fossil? So does Virginia. A KidsPost article, "X Marks the Fossil," gives a new way to enjoy a walk along the beach and cliffs lining the shores of the Potomac River and Chesapeake Bay.

Discuss the article and locate the places mentioned on a map. Have any students found fossils? If you have access, bring in examples of fossils to share.

Visit the Smithsonian's National Museum of Natural History to view a much larger collection. Online select The Life of a Vertebrate Fossil (<http://paleobiology.si.edu>).

Encourage students to find a fossil during the summer break.

Celebrate Lunar and Solar Events

Two special events take place in the summer of 2009.

July 20 is the 40th anniversary of the Apollo 11 mission's moon landing. Neil Armstrong took his "small step" after the "Eagle" had landed on the surface of the moon. He and "Buzz" Aldrin collected lunar samples for 21 hours, then docked with the Columbia command module in which Michael Collins had been orbiting the moon.

Visit the official NASA site (www.nasa.gov/mission_pages/

Beaches

www.epa.gov/beaches/learn/pollution.html

Beach Pollution

Environmental Protection Agency overview of causes and sources of water pollution at beaches

www.epa.gov/owow/oceans/

Oceans, Coasts & Estuaries

EPA clearinghouse for programs and latest information

www.nrdc.org/water/oceans/qttw.asp

Beach Pollution

Natural Resources Defense Council Q and A on beach pollution, press releases, stories and links to recommended sites

www.nationalgeographic.com/features/00/earthpulse/reef/reef1_flash.html

Great Barrier Reef

Take a National Geographic virtual dive off the northeastern coast of Australia

www.oceansatlas.com/index.jsp

UN Atlas of the Oceans

Uses, issues and geography of the globe's oceans

www.washingtonpost.com/wp-dyn/content/artsandliving/travel/

Travel

Washington Post travel article archives; look for articles about travel to islands and shores

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apollo/40th/index.html) for more information. Set up an e-Replica alert to read *Post* coverage of the anniversary.

"Apollo 11: One Giant Leap" is provided for students to place the 40th anniversary of the Apollo 11 mission and moon landing into historic perspective as well as think about the future of space exploration.

On July 22, a total solar eclipse will take place. According to the NASA Web site (<http://eclipse.gsfc.nasa.gov/SEmono/TSE2009/TSE2009.html>), the "path of the Moon's umbral shadow begins in India." Visit the NASA site and read *The Post* for coverage of this event.

Write About a Summer Icon

During the summer of 2008, Metro's annual summer series focused on the icons of summer. Reporters were instructed to find a story about a summer icon. Each had to determine a symbol of summer and find the story. In this guide, we have included "Diving Into the Mystic Waters of Memory," the reader's choice for favorite story.

Define "icon" and make a list of examples under the categories of religion, culture, automobile and music. What qualities do the people and items listed as icons share? How do they differ? Lead discuss from these symbols to icons of summer.

Add another column labeled summer. Brainstorm possible events, items and members of the animal kingdom to list.

Read "Diving Into the Mystic Waters of Memory." A reproducible, "Icons of Summer | Swimmin' Holes," is provided with questions for students to answer.

Just as Metro section reporters were assigned to select and write about an icon of summer, ask students to select an icon of summer and write an essay. You determine if they are to include description, interviews (formal and informal), and facts from research.

The entire Icons of Summer series may be read at <http://www.washingtonpost.com/wp-dyn/content/linkset/2008/06/26/LI2008062602770.html>. The icons included BBQ, mosquitoes, the hula hoop, swimwear and garden hoses. Teachers may wish to give additional articles to students to analyze the approaches taken by these reporters.

Count Birds and Dragonflies

Another summer activity in which to be engaged — observing and keeping a count of birds, dragonflies and butterflies — takes place in the D.C. metropolitan area. Teachers may encourage students to be involved in one of these activities or establish your own count of flora and fauna on school property and neighborhoods over the summer. What a great way to get to know students who will be in your classes in the next academic year, establish some protocols and have data to use in the future.

Read "Life, on the Wing: Dragonfly-Counting is a Reston Ritual That Adds Up to Something Greater." Dragonflies do not get the attention that butterflies and cardinals and rare wildflowers receive, but in this piece readers gain an appreciation for the insect.

Readers who are drawn to this feature by the appealing photograph or the idea of a local ritual, find that the writer's observation "adds up to something greater." This is more

Take Flight

Bizony, Piers

One Giant Leap: Apollo 11 Remembered
Zenith Press, 2009

Space historian Bizony selected stunning images; essay and quotations

Daniels, Patricia

The New Solar System

National Geographic, 2009

On the 50th anniversary of NASA, guide explores Earth's planetary neighborhood; photographs, diagrams, essays, fact boxes

Jacobs, Robert

Apollo: Through the Eyes of the Astronauts

NASA and Abrams Books, 2009

Apollo missions 7-17, using photographs selected by each of the 21 surviving Apollo astronauts; foreword by Stephen Hawking and his daughter Lucy

Platt, Richard and David Hawcock

Moon Landing: Apollo 11 40th Anniversary Pop-Up

Candlewick, 2008

NASA photographs, illustrations, pop-ups; dreams to technological reality

Ross, Stewart

Moon: Science, History and Mystery

Scholastic, 2009

The moon's myths, influence on culture and the story of the preparation, journey and landing of Apollo 11

Thimmesh, Catherine

Team Moon: How 400,000 People Landed

Apollo 11 on the Moon

Houghton Mifflin Books, 2006

Historic flight from the perspective of the behind-the-scenes people who made it happen

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than a story of public service by unconnected individuals.

Questions about the article would include:

- Why conduct a count of dragonflies? [paragraphs 4-5]
- What is the difference between “civic duty” and “cherished ritual”?
- What information does paragraph 3 provide?
- In what way(s) does Brendan illustrate the aphorism “Don’t judge a book by its cover”?
- Summarize the stories of Catherine Linberg, Niko Rabin, Brendan Honeychuck and Cynthia O’Connell, and Kevin Munroe.
- What is the unifying device used in the opening and closing?
- The dragonfly is a concrete insect that is being counted. How is it also a metaphor?

Take a Road Trip

Read the narrative and map found in “Road Trip — Beacons of Coastal History.” Students might be asked to locate this portion of the map on a larger map. This Road Trip easily accompanies the reading of nonfiction and fiction (*To the Lighthouse* by Virginia Woolf, *The Lighthouse* in the Adam Dalgliesh mystery books) books that feature lighthouses.

Have students plan a Road Trip. They could be asked to map the route by car, write about five to six stops along the way to the destination and what theme guides the choices. Mathematics could be added in plotting the miles between stops and planning a budget for the round trip.

Road Trip appeared in the Sunday Source weekly until May 24, 2009. It is now found once a month in the Travel section. An archive of

selected Sunday Source Road Trip maps may be found online (www.washingtonpost.com/wp-dyn/content/linkset/2005/04/07/LI2005040700365.html).

Road Trip includes drives to wildflowers in the Shenandoah Mountains, history and mystery in Richmond’s Church Hill, literary inspiration in D.C. and homemade cookies and sweets north of Baltimore. Note that some of the suggested drives have two files to download. One file has the map and one file has the narrative.

Play Baseball

“Thrown for a Loop” was published in 2006 in the Sports section. It provides some background information about Boston Red Sox player Daisuke Matsuzaka who had signed a six-year contract with the team. Discuss the terms of the contract. What do students know of Matuzaka’s current status? Has he been a good investment for the team?

Follow “Dice-K” during the summer, keeping a log of his wins-losses, batting and other stats. How does he compare with other major league pitchers?

Physics teachers (theory of “double-spin mechanics,” gravity) and baseball fans (importance of pitchers to the game) might discuss the mechanics involved in pitching and achieving the gyroball, in particular. Use the informational graphics to guide your discussion.

Although readers learn about Matsuzaka, the article focuses on a pitch, one that may or may not be thrown by this pitcher. Questions would include:

- What does the reporter mean: “New pitches come along in

Read About It

The American Association for the Advancement of Science recommends the following works in its science book awards.

Arnosky, Jim

The Brook Book

Dutton Children’s, 2008

Guide to making observations, activities; includes safety while exploring a brook

Bishop, Nic

Spiders

Scholastic Books, 2007

Arachnophobes and enthusiasts will find up-close photographs and informative text to give another view of spiders

Collard, III, Sneed B. Robin Brickman, illus.

Wings

Charlesbridge, 2008

Covered with scales, feathers or bare skin, wings allow insects, birds and bats to move through the air; colorful collage illustrations

Davies, Nicola. Neal Layton, illus.

What’s Eating You? Parasites — the Inside Story

Candlewick, 2007

Zoologist Davies explains the small parasites, some benefits for their hosts and means both use to survive

Herz, Rachel

The Scent of Desire: Discovering Our Enigmatic Sense of Smell

Morrow, 2007

Research, neurobiological principles, stories and personal accounts; from basic sense to electronic noses

Sitarski, Anita.

Cold Light: Creatures, Discoveries, and Inventions that Glow

Boyd’s Mills Press, 2007

Chemical and biological sources of luminescence, discoveries from 1602 to today; intriguing photos

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baseball about as often as Triple Crown winners; ..."? How does the second part of the sentence, answer the question?

- To what does "Bruce Sutter" allude in this quotation: ... "we'll see who the Bruce Sutter of the gyroball is."
- What are the following: screwball, change-up, cut fastball, slider, split-fingered fastball?
- After reading the article, do students believe the gyroball exists?
- Would students recommend that the Nationals give their pitchers a lesson in the gyroball?

Do research to find out what has happened in the use/existence of the gyroball between the publishing of this article and now.

GROUP 1: TONE

- What is the tone of the feature? How does diction and syntax of the first sentence establish it?
- Find examples of diction, similes and details throughout the piece that re-enforce the writer's voice.
- Does the tone remain the same to the end of the feature? Explain.

GROUP 2: OBSERVED DETAIL

- Do you think the reporter looked inside the workbook that the boys carried?
- Make a list of details included in the piece that came from the reporter's observing the park. Categorize the details into the type of information the reader gets.
- How does the author use the names of four rides — Mind Eraser, Roar, Joker's Jinx, Superman: Ride of Steel — to establish realism and reflect the boys' experience?

GROUP 3: USE OF NUMBERS

- In the third sentence, the first of many numbers is given. Why was it important to give the number of students present in the park that day?
 - What effect is created by including mph and feet?
 - Does knowing the drop and speed of the Superman ride detract from or reenforce the author's description of the boys' responses?
- Place the reader in a seat on the ride?

Ride a Rollercoaster

Even if your school does not participant in an annual Physics Day, you can appreciate physics in action on various rides in theme parks and the feature written by *Post* reporter Nelson Hernandez. Read "The Thrill of Physics" in the spirit of interdisciplinary collaboration. From the Style section, this article provides models in the use of tone, allusion, quotations, observation, numbers, contrasting details, and the luck of finding the right people to follow during the day.

Teachers might assign students to read the quotations of the five high school students and the narrative. After reading, divide the class into four groups. Some of the questions the groups might answer include:

Counts

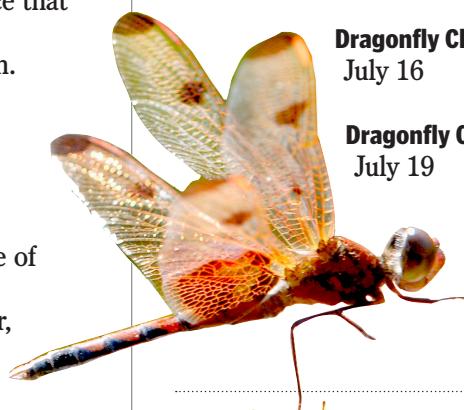
The Encyclopedia of Life, a 10-year international project based at the Smithsonian Institution, is asking people around the world to help compile an Internet-based observatory of life as a guide to everything from pests that damage crops to sightings of rare birds in Canada to flowers blooming in Australia in spring.

These can be observations around your home or during daily activities. If you are planning to take a hike, keep a record of trees, new growth, flowers, animals or insects that you see.

You can get training to be a better observer this summer. Check in your area for classes.

People in the Reston area should contact RA Central Services (12250 Sunset Hill Road, next to the YMCA) for the following classes and information about counts that will take place in July and August. In the classes, participants learn identification, behavior, natural history and conservation.

Dragonfly Class,
July 16



Dragonfly Count,
July 19



Butterfly Class,
July 30

Butterfly Count,
August 1

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- To what extent does the writer's use of physics terms make the piece enjoyable to read? Does one need to know physics to appreciate this slice of life piece?

GROUP 4: FIVE GUYS

- Of the 4,000 students that enter the park, readers meet five male students. Why do you think they were selected? [They were together, note names that reflect possible diversity, and the 28-page workbook they carry.]
- Why do you think the reporter uses their first names? After giving the whole name, reporters normally use the last name.
- Isolate each boy's quotations. What personalities emerge for each one?
- Follow Irving's development through the quotations included and his interaction with his friends. ■

ANSWERS. Sounds Right to Me**Reach for the Wall**

HIGH SCHOOLS | SWIM CLUBS | SUMMER LEAGUES

reachforthewall.com

The complete site for D.C. area swim clubs, teams, swimmers and their parents

- Create a club or team home page
- Upload pictures
- Post results and announcements
- Get info on meets, teams, results, top swimmers and more
- And follow the national and international competition with Washington Post sportswriter Amy Shupley

Love swimming?

reachforthewall.com

A publication of The Washington Post

The D.C. Metro area is a hotbed of youth swimming and in the summer there's a swim league in every one of the local counties. That adds up to approximately 50,000 kids, ages 6 through 18, participating in competitive summer swimming from mid-June through early August.

The goal of the *Post*'s Sports section's new Web site (*reachforthewall.com*) is to create an extensive online community for these area swimmers, coaches and swim parents.

In addition to *Post* coverage, each team will be given a page to add information, pictures and video, quotations and stats — teams will report behind-the-scenes, on the bench and in the pool. It will be as easy as clicking and typing, and something that all team members, their parents and coaches can join in on because everyone will have the ability to post text (directly onto our site), pictures (on our flickr group) and, eventually, video (on our YouTube channel).

Reach for the Wall to share this summer's strokes and successes with grandma in Seattle, former team members in San Antonio and folks in the entire D.C. Metro area. ■

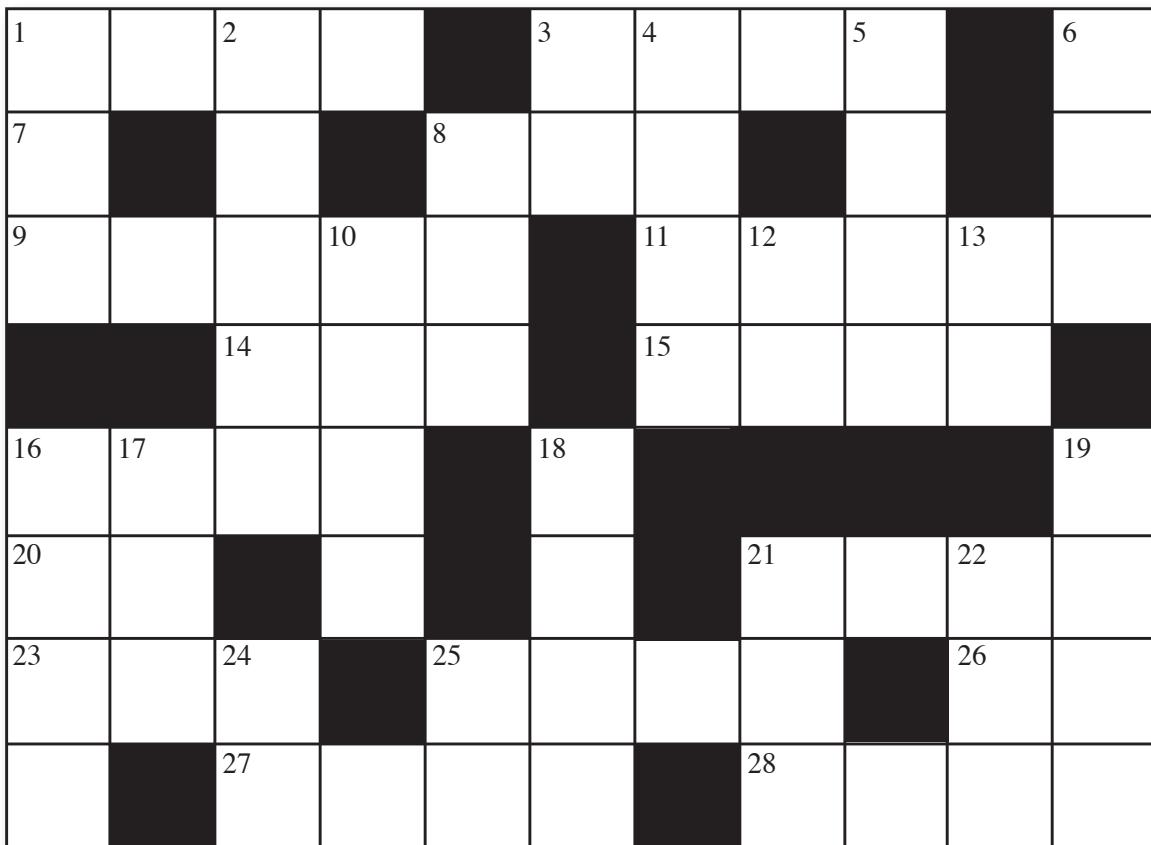
Name _____

Date _____

Sounds Right to Me

Homophones are pronounced the same, but differ in origin, meaning and spelling. This crossword puzzle is composed of many homophones, including six pairs. Read the clues to complete the puzzle.

When you have completed the puzzle, list the pairs of homophones. Use them in sentences to distinguish the meaning of each word. Be sure to spell them correctly.



ACROSS

1. Similar to a rabbit, with longer ears and legs
3. Married to your uncle
7. First person singular, nominative pronoun
8. An annoyance at a picnic
9. Power, strength
11. Lessen
14. Sound made by a donkey, ___haw
15. Song of praise sung at a religious service
16. Customary way of performing a ceremony
20. Occupational Therapy, acronym
21. Small arachnid
23. Beverage made from dried leaves
25. Sixty minutes
26. Each, abbrev.
27. Past tense of "know"
28. Swarm, full of things

DOWN

1. Third person, singular, objective pronoun
2. Correct
3. Indefinite article used before vowels
4. The beehive state
5. Players form a ___
6. Perceive with the eyes
8. Consumed
10. The back part of the foot
12. Preposition meaning close to, along
13. Postal abbreviation for Tennessee
16. Memorize by repetition
17. Suffix, meaning native to
18. Comprehend
19. Line formed by sewing two pieces of fabric, suture
21. Mass Rapid Transit, acronym
22. Found on a golf course
24. Postal abbreviation for Alaska
25. Third person, nominative pronoun

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X Marks the Fossil

Beachcombers Uncover Millions of Years of History

• Originally Published August 8, 2007

Next time you walk along a sandy beach, look down. You might be walking over fossils millions of years old.

Fossils are hardened remains, imprints or traces of plant and animal life that existed in earlier geological periods. They have stories to tell — not with a voice, but in the clues they give us about what life, weather and Earth's environment were like long ago.

Did you know that before there was a Chesapeake Bay, the region was covered by a warm, shallow sea that offered lots of nutrients and plants for marine life? Sharks, rays and whales lived and died in the area of today's Potomac River and Chesapeake Bay.

As the sea's waters receded, fish, birds and other animals became embedded in what are now cliffs lining the shore. Their soft tissue — muscles and blood vessels, for example — deteriorated, but hard parts including teeth and bones remain.

The most common fossils found locally are sharks' teeth. However, it's not unusual to find crocodile teeth, whale bones and dental plates of rays.

Look carefully as you walk in the sand at Breezy Point, Flag Ponds and Calvert Cliffs in Maryland and Westmoreland State Park in Virginia. Fossilized shark teeth from 12 million to 22 million years ago are right under your toes.

In some places, you might brush sand away from buried shells to uncover an *ecphora*, the shell of a snail that lived 5 million to 12 million years ago. One species, the double-named

Ecphora gardnerae gardnerae, is the Maryland state fossil.

And what at first glance appears to be an ordinary scallop shell might be Virginia's state fossil, the *Chesapecten jeffersonius*, dating back about 5 million years.

Lauck Ward became fascinated with fossils when he was 8. His family often vacationed in the Shenandoah Valley, where an 80-year-old resident took Ward, his brother and some friends on hikes, stopping often to point out signs of the past.

Ward learned about trilobites — extinct marine arthropods about 450 million years old that were the ancestors of many of today's insects. The fossils he found were embedded in shale, a thinly layered rock.

These were life-changing outings for Ward. "It's like an idea that clicks in your head, then gets you seeking more information," he said. Now, 50 years later, he is the chief paleontologist — a person who studies fossils — at the Virginia Museum of Natural History in Martinsville.

Any kid can have fun fossil-hunting.

While 11-year-old Rose Hancock of St. Mary's County was collecting sharks' teeth near the water's edge at Breezy Point recently, others were having just as much luck yards away, in the dry sand.

Kayla Hymiller, 6, of Carroll County found a three-pointed cow-shark tooth while running her hand along the sand near a piece of driftwood. "It was sitting right there," she said happily.

— Ann Cameron Siegal

Fossil-Finding Tricks

- To hunt for waterside fossils, some people use screened sifters or long-handled tools called gem scoops. These can help sort fossils from sand and pebbles. But many people have just as much luck using their eyes and hands.
- The day after a big storm and during low tide are good times to find fossilized teeth, bones and shells.
- When you look for fossils, you need to be patient and very observant. Be sure you are on public property; stay away from privately owned places or designated wilderness areas where fossil-hunting is not allowed.

• Never dig in the dirt of steep cliffs along the shore — they might collapse.



An Integrated Curriculum For The Washington Post Newspaper In Education Program

Beacons of Coastal History

• Originally Published Sunday, May 17, 2009

WHY: An illuminating ship, step master and a haunted lighthouse.

HOW FAR: About 160 miles from start to finish.

This spring, head for the light — houses.

After hibernating during the colder months, Maryland's lighthouses are opening their doors to let in some fresh air and the visiting public. Fans of maritime history and structures that shine day and night can view two dozen light stations sprinkled along more than 7,000 miles of coastline. The majority still operate, casting their long, white light across the waters of the Chesapeake and assorted bays and rivers.

"People visit the lighthouses for the architecture, and for photo ops, and especially for the history," says Karen Rosage, a coordinator at the Chesapeake chapter of the U.S. Lighthouse Society, adding, "The reason why Maryland is such a great lighthouse state is because we have so many different varieties."

The lifesaving structures come in myriad shapes and styles: lamps on ships, vertiginous towers, boxy houses. The oldest was constructed in 1825 on Pooles Island, in the northwest section of the upper Chesapeake. John Donahoo, one of two developers on the project, went on to become

a prolific lighthouse builder during the early 19th century; for example, the granite tower in Havre de Grace, where he is buried, is his creation. Donahoo specialized in conical towers of brick and stone, yet Maryland is equally well known for the screwpile light station, an offshore beacon built on an underwater platform that was screwed to rocks and sandy shoals, paradoxically the main hazards of ship navigation. The screwpile, as well as the more common caisson, resemble cottages topped with cupolas containing powerful lamps and glass or acrylic lenses.

To be sure, part of the allure of lighthouses are the accompanying stories that often contain a touch of romance, mystery or, in one case, female empowerment. Turkey Point Light Station was tended by more women than any other lighthouse on the Chesapeake, with Fannie Mae Salter serving as keeper from 1925 to 1947, when the light was automated. For a spine tingle, Point Lookout Lighthouse is said to be haunted by the ghosts of Confederate soldiers who died in a Civil War POW camp that once occupied the same parcel.



BY BEN CHAPMAN — THE WASHINGTON POST
Seven Foot Knoll Lighthouse, originally installed on a shoal in the Patapsco River in 1855, is the oldest surviving screwpile in Maryland.

Where to Find More Washington Post Road Trips

An archive of selected Road Trip maps may be found online (www.washingtonpost.com/wp-dyn/content/linkset/2005/04/07/LI2005040700365.html). Road Trip includes drives to wildflowers in the Shenandoah Mountains, history and mystery in Richmond's Church Hill, literary inspiration in D.C., and homemade cookies and sweets north of Baltimore.

Note that some of the suggested drives have two files to download. One file has the map and one file has the narrative.

Every year, viewing lighthouses (10 sites in all) turns into a marathon sport with the Maryland Lighthouse Challenge, a two-day driving tour scheduled for September. With lighthouse season upon us, now is the perfect time to start training, one lighthouse step at a time.

— Ben Chapman

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RoadTrip » Maryland's Lighthouses

Beacons of Coastal History | *Continued*

1 Turkey Point Light Station

Turkey Point Light Station stands sentinel on a bluff 100 feet above the Chesapeake.

Elk Neck State Park at the south end of Turkey Point Road, North East, Md., 410-287-8170, [website](#).

2 Concord Point Lighthouse

The first keeper of Concord Point Lighthouse was John O'Neill, who defended Havre de Grace from the British in 1812.

700 Concord St., Havre de Grace, 410-939-3213, [website](#).

3 Seven Foot Knoll Lighthouse

Seven Foot Knoll Lighthouse, originally installed on a shoal in the Patapsco River in 1855, is the oldest surviving screwpile in Maryland. In 1989, it was moved to Baltimore's Inner Harbor and is now part of the Historic Ships in Baltimore.

Pier 5, 701 E. Pratt St., Baltimore, 410-396-3453, [website](#).

4 Lightship Chesapeake

Lightship Chesapeake, which guided watercraft from 1930 to 1971, is spending its retirement on the docks of downtown Baltimore.

501 E. Pratt St., Baltimore, 410-396-3453, [website](#).

5 Sandy Point Shoal Lighthouse

Sandy Point Shoal Lighthouse, a caisson sitting offshore, is visible from the Sandy Point State Park beach and the Bay Bridge.

Sandy Point State Park at the western terminus of the Bay Bridge, off U.S. routes 50/301, Anne Arundel County, 410-974-2149, [website](#) or [lighthousefriends.com](#).

6 Drum Point Lighthouse

The Calvert Marine Museum's restored Drum Point Lighthouse is a hexagonal, cottage-style screwpile marker built in 1883.

Calvert Marine Museum, 14200 Solomons Island Rd., Solomons, Md., 410-326-2042, [website](#).

7 Point Lookout Lighthouse

Built in 1830, Point Lookout Lighthouse is a keeper's duplex topped with a cupola that once held a bright lantern.

Point Lookout State Park, south end of Point Lookout Road, Scotland, Md., 301-872-5688, [website](#) or [plips.org](#).



MAP BY JEROME COOKSON FOR THE WASHINGTON POST

Name _____

Date _____

Apollo 11: One Giant Leap

U.S. Space Program Background

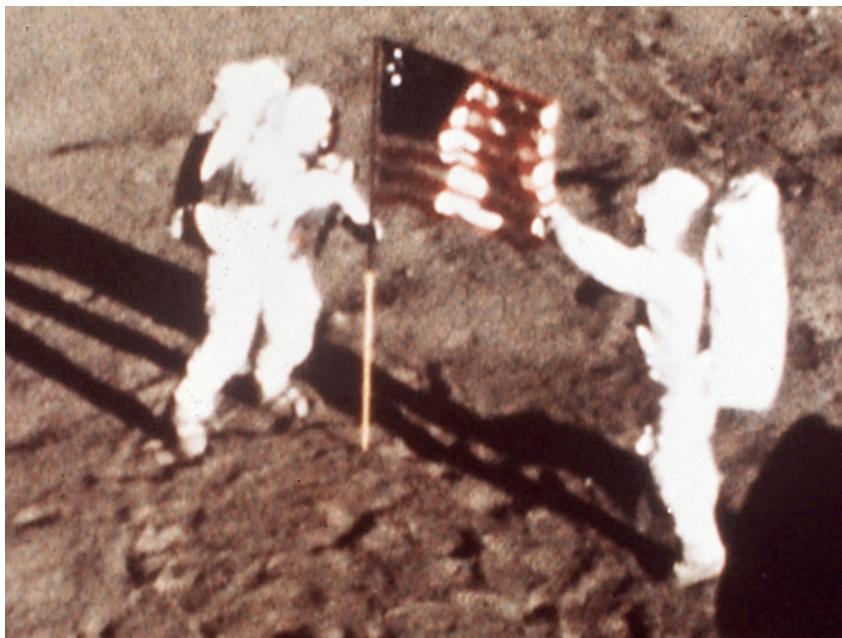
1. Why was the launch of Sputnik cause for concern in the United States?
2. Which American presidents are closely associated with the beginnings of the lunar landing program?
3. After a temporary slowing of activity, what important forces and events moved the U.S. space effort forward?
4. Who originated the term “Cold War”? What is meant by the phrase “astronauts as surrogate combatants”?

Apollo 11

5. Who were the astronauts aboard Apollo 11?
6. What technical glitch almost aborted the Apollo 11 moon landing?
7. What unintended activity did Neil Armstrong have to perform as the lander neared touchdown?
8. What was Michael Collins’ role in the Apollo 11 mission?
9. On what day and year did man land on the moon?
10. What impact did the Apollo 11 mission have in decisions leading to today’s space program?

Your Thoughts

What do you think the next steps in U.S. space exploration, if any, should be? Support your response.



AP PHOTO/NASA

Apollo 11 astronauts Neil Armstrong and Edwin E. “Buzz” Aldrin, the first men to land on the moon, plant the U.S. flag on the lunar surface, July 20, 1969. Photo was made by a 16mm movie camera inside the lunar module, shooting at one frame per second.

Parallel Syntax

“That’s one small step for man, one giant leap for mankind.”

— Neil Armstrong

“Beautiful view. Magnificent desolation.”

— Edwin “Buzz” Aldrin

Use of parallel structure by Neil Armstrong and Buzz Aldrin as they comment on stepping on the moon’s surface make their words easier to memorize and succinct. Both have grace of expression.

Parallel structure requires that words be the same part of speech usually in the same order within a sentence or consecutive sentences or paragraphs.

For example:

*one small step
one giant leap*

follow the pattern of adjective, adjective, noun. This is more powerful because “one” refers to the physical first step and the goal of many fulfilled.

*for man
for mankind*

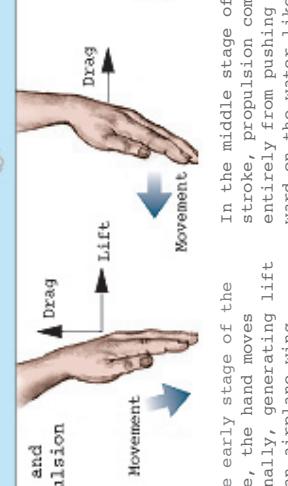
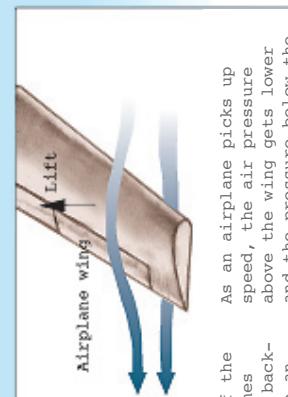
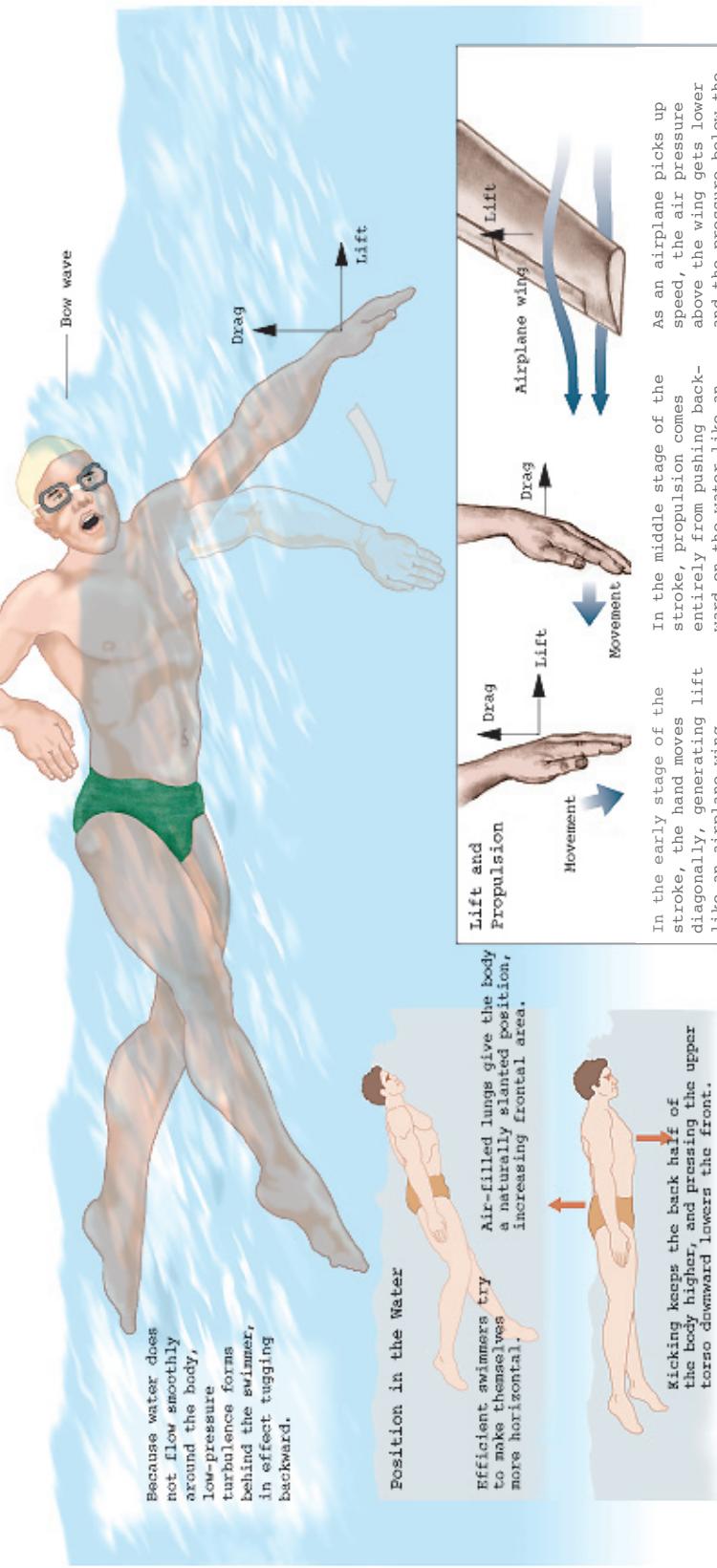
What is communicated in the change of noun in the prepositional phrase?

Aldrin’s comments offer another element of eloquence through four words in parallel structure. Both are adjective, noun construction. One would expect him to think the view was “beautiful.” What is achieved in following “magnificent” with a noun that few would associate with beauty or magnificence?

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How the Body Cuts Through Water

Swimmers encounter two main kinds of drag. Form drag causes lower water pressure behind the body than in front. Wave drag results from water piling up in a bow wave ahead. Swimming underwater helps eliminate wave drag.



As an airplane picks up speed, the air pressure above the wing gets lower and the pressure below the wing gets higher. This causes lift.

In the middle stage of the stroke, the hand moves diagonally, generating lift like an airplane wing.

In the early stage of the stroke, the hand moves entirely from pushing backward on the water like an oar.

SOURCE: *Swimming Even Faster: A Comprehensive Guide to the Science of Swimming* by Ernest W. Maglischo

ORIGINAL PUBLISHED: HORIZON section, August 11, 1999

BY JOHN ANDERSON — THE WASHINGTON POST

Name _____

Date _____



ICONS OF SUMMER | *Swimmin' Holes*

"We stand today poised on a pinnacle of wealth and power, yet we live in a land of vanishing beauty, of increasing ugliness, or shrinking open space."

— Alice Roosevelt Longworth

Diving Into the Mystic Waters of Memory

After reading "Diving Into the Mystic Waters of Memory," a Washington Post Metro section article, answer the following questions on your own paper.

1. Which of the senses is emphasized in the opening paragraph? Give examples.
2. What is an avocation of Tom Hillegass in his retirement?
3. What do the references to Mark Twain add to the article?
4. More than one swimming hole is visited and people who are found there are quoted. In what ways does this add or detract from the story and its theme?
5. Hillegass warns of the dangers of swimming holes on his Web site. Since this article is about the "icons of summer," do you think the negative aspects should be included? Do the dangers make the water more or less "mystic"?
6. In addition to observation, interviews (formal and informal), and literary reference (Mark Twain), the author has included research. In what ways does the research add depth, perspective and contrast to the article?
7. Review the first five paragraphs and the last five paragraphs of the story. In what ways are they bookends for the entire piece? Consider the locations, the description and use of senses, the facts and personal stories.
8. Should the location of swimming holes be left to locals rather than shared on Hillegass's Web site? Include your reasons.

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Diving Into the Mystic Waters of Memory

BY BRIGID SCHULTE

Washington Post Staff Writer

• Originally Published
August 30, 2008

Shhh. Listen. A half-mile clamber up a steep trail of smooth boulders, a trickle of crystal-clear water spills over a wide, flat rock into a silent pool. The unbroken surface reflects a grove of arching pine trees swaying in a gentle late-summer breeze. The smell is distinctive. Fresh. With a hint of mud.

Welcome to the Mountain Run swimming hole. It's the kind of place Tom Hillegass has spent more than a decade looking for. He wades in. The water is cold enough to take his breath and numb his legs and deep enough to disappear into.

Perfect.

Or at least, according to his scale, an 8.5 out of 10.

"It's like being embraced by nature," he says. "Or about as close to an embrace as you can get."

Hillegass, a retired Department of Transportation civil engineer who for 12 years has run the Web site <http://swimmingholes.org> out of his Alexandria home, is about as close to being an expert on swimming holes in America as one can get. And with the swimming hole a fixture in the nation's mythical identity since at least the times of Mark Twain, that's saying a lot.

The first thing Hillegass wants people to know in this age of square concrete pools with chlorinated water and plastic splash parks with whistle-wielding lifeguards at every turn



ICONS OF SUMMER | *Swimmin' Holes*

"We stand today poised on a pinnacle of wealth and power, yet we live in a land of vanishing beauty, of increasing ugliness, or shrinking open space."

— Alice Roosevelt Longworth



BY SARAH VOISIN — THE WASHINGTON POST

is that swimming holes still exist. There are not as many as before because cities and suburbs have swallowed up rural areas, and developers and landowners have fenced off beloved

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haunts. And the ones left are often so far from cities that people don't visit them like they did in more innocent times, when Twain lazed the summer away with every other kid his age at Bear Creek in Hannibal, Mo. But they're there, waiting to be found again.

Hillegass has documented 77 such places in Virginia. Twenty-seven in Maryland. The District, which once drew entire neighborhoods to the swimming beaches of the Tidal Basin, has none.

There are the more-isolated swimming spots favored by hikers and outdoor types, such as Mountain Run, which can be found amid a confusing tangle of country lanes and gravel fire roads near Harrisonburg, Va. There are fathomless quarries with Tarzan vines and zip lines.

"Let go, Morgan!" friends screamed at white-bikini-clad Morgan Collins, 14, last weekend as she clung to the rope at Milford Mill quarry outside Baltimore and swung perilously close to the jagged rock wall. Eyes wide, she released the rope at the last minute and hung in the air for a beat before flopping and screaming into the greenish water.

There are clothing-optimal swimming holes. Gay- and lesbian-leaning holes. Family-friendly holes with rock ledges and the iconic rope swing that Hillegass always feels obliged to try. And holes where, as in Twain's time, nearly everyone in town can be found on a hot Saturday afternoon.

The Blue Hole of Bergton, in the Shenandoah Valley near the West Virginia line, is that kind of swimming hole. At least in late June and early July, when the water's running high. But on a Saturday in late August, after a long dry summer, the creek had slowed to a trickle, and only April Chacon, 23, her boyfriend and her three daughters were splashing in the water. Wayne Hall, 24, had just returned home after being away for a few years, and this was the first place he wanted to come.

"I think I can jump," Hall said, eyeing the cliffs and unusually shallow swimming hole, where the girls were dog paddling. "I used to jump when it was only five feet deep."

"Yeah, because you're crazy," Chacon snorted.

The two remember spending summer weekends at Blue Hole as high school students in nearby Broadway, Va., population 2,192. Chacon, and everyone else she knew, came there instead of the pool. "I think of the water as cleaner," she said, standing on the river-rock beach. "I guess it's just kind of what you've growed up on."

Finding swimming holes these days takes work. Until Hillegass, their locations were just part of local lore, often closely guarded secrets available only to insiders. The location

of other swimming holes, such as a spot off Violet's Lock on the Potomac River, traveled by word of mouth through the kayak and canoeing communities. "Urban people don't know where these rural places are," Hillegass said. "In some cases, that's better."

Even with Hillegass's careful Global Positioning System-enhanced directions, it can take a long time to get to one. And the swimming has always carried a hint of danger. Hillegass warns on his Web site: "PLEASE NEVER, EVER Dive headfirst (paralysis, death) ... Swim in upper pools of a waterfall (you wash over falls) ... Don't put your hands or feet into places you can't see (snake dangers.)" He notes drownings, bouts of poison ivy and reports of an amoeba found at the bottom of stagnant pool in Florida that can be lethal when it gets in the nasal passages.

It was just this kind of danger that helped put an end to the gauzy heyday of the swimming hole. Twain saw two playmates drown at Bear Creek and was twice dragged to shore nearly lifeless. Despite the likes of presidents Warren G. Harding and Herbert Hoover extolling the virtues of growing up at swimming holes, the murky buggy places were soon replaced wholesale by swimming pools.

Chlorinated pools became popular on a large scale after the modern Olympic Games began in 1896. At the turn of the century, city fathers saw pools as a way to get street urchins out of rivers, swimming holes and creeks, keep them from view and get them clean. By the 1930s, pools became status symbols and marks of good parenting. A *New York Times* article of the period described the transformation of a popular pond into a community pool. "The parents of the children who swim there today show none of their ancestors' indifference to the typhoid bacillus. ... Concrete replaces the sides of clay and mud, and chemical treatment renders the water as harmless as that the city dweller turns into his tub."

Modern sanitation standards, the *Times* wrote, put most swimming holes out of business.

But the rocks, waterfalls and pools at Savage Mill can still draw the whole community, even on a Monday evening after work. Elisabeth Navarrete is 13. Since moving from El Salvador to Maryland last year to live with her father — her parents are separated — she has come to the spot for solace. She lives in a crowded apartment across the street. And though everyone from the surrounding apartment buildings congregates at the swimming hole, she can always find a place to think — about the mother she misses in her home country, the beaches, the parks, the freedom she had to go where she wanted. By the swimming hole, she says, she can breathe. ■

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Thrown for a Loop

Matsuzaka's Mystery Pitch, the Gyroball, Is an Enigma Wrapped in Horsehide

By DAVE SHEININ

Washington Post Staff Writer

• Originally Published December 23, 2006

It came from Japan, like one of those 1960s movie monsters, conceived in a scientist's laboratory, imbued with supernatural powers and given a mysterious, evocative name: Gyroball. Then, like Godzilla, Mothra and those other celluloid beasts, the gyroball was unleashed upon American shores to wreak havoc. And also like them, the gyroball may be nothing more than a cartoonish bit of fiction.

The Boston Red Sox' signing last week of 26-year-old Japanese pitcher Daisuke Matsuzaka to a six-year, \$52 million contract — on top of a \$51.1 million "posting" fee the Red Sox paid to the Seibu Lions for Matsuzaka's negotiating rights — had many ramifications for baseball.

It turned the fanatical Red Sox-New York Yankees rivalry into a trans-Pacific phenomenon. It gave the Red Sox what is arguably the best starting rotation in baseball for 2007. And it forced a reexamination of the posting system, which clearly tilts in the favor of high-revenue teams like the Red Sox and Yankees.

But perhaps most tantalizingly, at least to a small subset of Internet surfers, fanatics, historians, pitching gurus and other true believers, Matsuzaka's arrival in the United States next spring holds the promise of introducing into the highest level of the game the first distinctively new pitch in more than three decades — if, in fact, Matsuzaka throws the mysterious gyroball, and if,



Dave Matsuzaka, who will play for the Red Sox, throws a pitch that has generated a lot of spin.

GETTY IMAGE

for that matter, it exists at all outside of the realm of the theoretical.

This much is known: The gyroball was invented on a supercomputer by a Japanese physicist named Ryutaro Himeno, with the help of a baseball trainer named Kazushi Tezuka, and was described in their 2001 book *Makyuu*

no Shoutai — which, translated loosely, means "Secrets of the Demon Miracle Pitch."

The gyroball, as theorized by Himeno and Tezuka, would behave unlike any other pitch in baseball — with either

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an exaggerated drop or an exaggerated side-to-side motion (even on this there is some disagreement) — owing to its special spin, which is more like the spiral of a football or a bullet than the backspin of a fastball or the topspin of a curve.

"I can teach it in 10 minutes," said Will Carroll, an expert on pitching injuries and a writer for *BaseballProspectus.com* who is also the gyroball's leading champion in the United States. "Perfecting it? That's a lot longer."

New pitches come along in baseball about as often as Triple Crown winners; the last was the split-fingered fastball, which was popularized by closer Bruce Sutter in the 1970s. This is why the arrival of Matsuzaka, who is said to throw the gyroball (but who has been vague when pressed about it), is creating such a frenzy among believers such as Carroll.

"As the pitch becomes more of a known quantity, and as more people learn how to throw it and more importantly teach it," Carroll said, "we'll see who the Bruce Sutter of the gyroball is."

But is the gyroball real? And if so, is it really something new?

"No such pitch," Bobby Valentine, former Texas Rangers and New York Mets manager and current manager of Japan's Chiba Lotte Mariners, said in a terse e-mail response to a question about the pitch.

"There is no gyroball. I don't know who came up with that," said former major leaguer Mike Pagliarulo, who owns a scouting company that provides reports on

Japanese players for major league teams. Matsuzaka, according to Pagliarulo, "doesn't throw anything that's any different from what anyone else throws. Oh, and he also doesn't wear a cape, and doesn't fly."

"I believe it is a screwball," said Buck Martinez, who managed the U.S. team in this spring's World Baseball Classic, for which Matsuzaka was named most valuable player.

"It's a change-up," said Robert Kemp Adair, professor emeritus of physics at Yale University and author of *The Physics of Baseball*. "Put another way, it's basically nonsense."

"This pitch," said Alan Nathan, physics professor at the University of Illinois and a specialist in the study of baseball physics, "is something like a cut fastball, but with more drop to it."

Undoubtedly, the confusion stems, at least in part, from cultural and language barriers. The Himeno-Tezuka book has never been fully translated into English, and Matsuzaka apparently has spoken to an American reporter only once regarding the pitch — and only then with the help of a translator. That came in March, during the WBC, when Matsuzaka told a Yahoo!Sports reporter, "Oh, yes, I'm trying to throw [the gyroball]. I have done it in a game. But not too much. Sometimes accidentally."

An additional layer of confusion exists because although grainy videos of Matsuzaka supposedly throwing the pitch have been passed around the Internet for several years, the pitch shown on the video clip is most

If a Gyroball Exists, Here's How It Works

Some swear it exists and Daisuke Matsuzaka throws it, and some swear it doesn't and he doesn't. Some theoretical characteristics of the gyroball:



Spin

A "pure" gyroball should spin in a spiral like a football rather than with a fastball's backspin or a curveball's topspin. An unusual hand twist, which occurs either during or after release depending on who is describing it, causes the unusual rotation. How the ball spins toward the batter:



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Speed

Roughly 3 to 5 mph slower than a pitcher's fastball and 10 mph faster than his curveball.



Trajectory

A gyroball drops more than a fastball and less than a curveball. Unlike a curve, in which topspin causes a pronounced dip, only gravity is pulling a gyroball down. The trajectory is similar to that of a split-finger fastball.

How the ball comes off the bat

Because there is no consensus on the pitch, there are no definitive stats. Will Carroll of *BaseballProspectus.com* says that batters tend to beat Matsuzaka's gyroballs into the ground and rarely hit them fair.



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likely Matsuzaka's excellent slider — one of six traditional pitches he is known to throw.

But Carroll believes most of the confusion results from one basic truth about the gyroball: It has multiple incarnations that are achieved by tilting the hand during delivery, in much the same way that a fastball can be made to "cut" or sink by changing the grip or the arm angle. One of those incarnations Carroll has taken to calling the "side-force" gyroball, because of its side-to-side (as opposed to up-and-down) motion.

Carroll also believes Matsuzaka is proficient in throwing the gyroball, to a much larger degree than the pitcher was willing to admit in March.

"I believe Matsuzaka knows this pitch and has worked on it," Carroll said. "I don't believe he's perfected it, but . . . I think he can make it work enough to keep working on it."

This is how the gyroball should work, in theory: By rotating the hips and shoulders in unison during the windup — a maneuver the physicists based on the theory of "double-spin mechanics" — and then releasing the ball with a twist of the hand, a pitcher can impart a bullet-like spin on the ball. Unlike a fastball, the backspin of which creates the illusion that it is rising, or a curveball, which has topspin that makes it tumble as it reaches the plate, a gyroball should have a spin axis — an imaginary pole around which the ball is spinning — that is facing the same direction as the ball is traveling, causing it to drop as it reaches the plate.

But according to Adair, who literally wrote the book on the physics of baseball, there is a simple reason why that drop occurs. "It's just gravity," he said. "It's like any pitch that doesn't have the backspin of a fastball. Gravity acts on the ball and pulls it down."

Moreover, Adair contends, unlike the split-fingered fastball — which also drops, but which has the added tactical advantage of appearing like a fastball as it approaches — the gyroball would be easy for a batter to read out of a pitcher's hand, given the extreme contortions required to throw it.

"So," Adair said, "it's a change-up — but in my mind, a change-up that a batter can tee off on, and clobber."

Nathan believes the gyroball, in theory at least, could be more effective than a splitter, because, he said, even a well-thrown splitter has at least a little backspin, which reduces its drop.

"But it's not at all clear to me that this pitch has made the leap from theory to practice," Nathan added. "I'm not convinced, without seeing more evidence, that any pitcher actually throws this pitch properly or effectively."

Since coming across the Himenotezuka book in 2002, Carroll has made it his life's mission to learn everything there is to know about this pitch, and to teach it. To date, he has taught the gyroball to two pitchers who have made it part of their repertoires: a Milwaukee Brewers Class A minor leaguer named Steve Palazzolo, and an Indianapolis-area high schooler named Joey Niezer.

"If you could actually teach Mariano Rivera's cutter or Brad Lidge's slider,"

Carroll asks rhetorically, "wouldn't you do it?"

But Palazzolo, who split last season between rookie ball and Class A in the Brewers' organization, said he has never felt comfortable enough with the gyroball to throw it in a game, and isn't sure he ever will.

"It's a real pitch," he said. "And it's effective when it's thrown properly. But I don't know if it's going to be groundbreaking or revolutionary. It would take someone learning to master it. Maybe Matsuzaka will be the one. Maybe he already has [mastered it]. I'm looking forward to watching him."

Matsuzaka's signing with the Red Sox has raised the profile of the gyroball around baseball, and by extension that of Carroll. He said he has been asked on several occasions by big league managers and executives about the pitch.

Typically, Carroll will confirm the gyroball's existence to the inquisitive manager or executive, who will then cast a skeptical glance, say thanks, and walk away. But Carroll is waiting for some team — perhaps even one that plays in the nation's capital and that, by virtue of its poor prospects for 2007, has little to lose but everything to gain — to make the leap of faith and fly him in next spring to teach its pitchers the Secrets of the Demon Miracle Pitch.

"I'll teach this thing to anyone, anywhere. If [Jim] Bowden or [Randy] St. Claire want to see this pitch in action," Carroll said, referring to the Washington Nationals' general manager and pitching coach, "I'll do it for the cost of a plane ticket." ■

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Life, on the Wing

Dragonfly-Counting Is a Reston Ritual That Adds Up to Something Greater

By TAMARA JONES

Washington Post Staff Writer

• Originally Published July 24, 2007

Hold them up in the light, and they'll come around. The people at Butler Pond know this already about dragonflies, about the way the sun revives them from the stunned dismay of captivity, but Kevin Munroe repeats the lesson anyway before letting go of the blue dasher feigning death between his gentle fingers. The insect darts away and the dozen intrepid hunters, long-poled nets in hand, well-worn field guides in cargo pockets, search the Reston wetlands for more.

What began as civic duty became cherished ritual long ago with this annual dragonfly count in the Fairfax County suburb, and the volunteers happily surrender a whole Saturday to traipse through reed and rush.

There is a Junior Girl Scout determined to earn her nature badge, and the veteran Auduboners who freeze like pointers at the rustle of a blue heron about to take flight. There is the mute teenager stealing a nap in the gazebo, and the bubbly cancer survivor who jokes about the burden of responsibility as she fills out the census form: Six or eight black slaty skimmers? How many prince baskettails, and what about amberwings? Did anyone get a Halloween pennant?

Revered by some cultures, feared by others, dragonflies have never failed to capture human imagination. They can fly backward, do cartwheels across the sky, and mate midair, for starters. "They're amazing creatures," says



BY GERALD MARTINEAU — THE WASHINGTON POST

The strange, delicate creatures are an important sign of environmental stability in the wetlands of Fairfax County.

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Munroe, a 37-year-old naturalist who has been leading this expedition each July for more than a decade. Counting the dragonflies, determining whether species have abandoned polluted habitats, is a way to monitor the health of the streams and ponds and lakes where they live, he explains.

It's a small reassurance in a world of inconvenient truths: If the dragonflies are thriving, then something must be going right.

* * *

In the summer of 2003, Catherine Linberg had just moved to Virginia from Northern California with her husband, Mike Blanpied, and their son, Greg. Mike, a geophysicist, had gotten a nice promotion with the U.S. Geological Survey, with a transfer to headquarters in Reston.

They bought a house backing up to nature trails and woodlands so Greg could enjoy an idyllic boyhood. He was going into the second grade then, and Linberg planned to freelance for the textbook publishing company where she had been a copyreader. She looked forward to volunteering at Greg's school, remodeling the house, putting in a garden. It was too late to get Greg into camp, so they would just build their summer around community activities.

The night they moved in, the three of them camped out on air mattresses in the living room, huddling together through an ear-splitting thunderstorm. The power went out and Linberg remembers her forearm brushing the top of her chest in the darkness. She felt a hard lump.

She began her new life looking up oncologists in the yellow pages. Waiting for her verdict, Linberg found the

distraction she needed: Reston's annual dragonfly count. About 20 people were milling around at Butler Pond that Saturday, and Munroe welcomed the newcomers.

"I was just out there with it: 'Hi, I'm Catherine, and I may have cancer,'" she remembers introducing herself. "And boy, is my back sore," she added for good measure. They had driven cross-country.

A woman who turned out to own a massage studio approached her with a friendly grin. "I can't cure cancer, but I can make your back feel better," she offered, and Linberg's face still melts into a blissful smile when she recalls the fabulous back rub she got there in the gazebo.

Linberg had surgery that August. The cancer was "invasive and aggressive," but she was 43 and otherwise healthy. It seemed fitting to spend the fall retching in the circa-1968 bathroom with its turquoise, olive and gold wallpaper. She hid her chemotherapy baldness with colorful hats and scarves all winter, and tried not to let herself think, whenever the family enjoyed some special occasion, *Is this the last time?*

Her last day of radiation fell on Valentine's Day, and she handed out candy to everyone in the waiting room. "I felt pretty triumphant. There's a certain cachet in being a new survivor."

She began collecting pink bracelets and waited for the dragonflies to return.

* * *

Brendan Honeychuck stretches his lanky 17-year-old frame out on a bench and dozes while his mother pokes the tall marsh grasses and scans the waterlilies in search of the elusive widow skimmer Munroe thinks he may have glimpsed.

Cynthia O'Connell and her husband, Barney, raised Brendan to appreciate

nature, and took him along whenever they volunteered for conservation efforts. "The three of them were just this wonderful family," Munroe recalls. "One of the most rewarding aspects of this is watching the kids grow up, like Brendan."

When his PowerPoint presentation in the dragonfly tutorial he holds before the count clicks on a slide of a small boy in a meadow, O'Connell blurts out wistfully from her folding chair, "Oh, I remember that red shirt!"

Now Brendan wears camouflage pants and a man's red T-shirt, a can of Jolt in one pocket and a utility knife in the other. A floppy National Guard hat is squashed down over his dark hair. He unfolds himself slowly from his nap and shambles off into the pond muck alone. He'll be a senior at Herndon High School this fall, and this day of dragonflies is a reprieve from advanced chemistry and calculus, and preparing his applications for the Navy and Air Force academies. He's finishing up his Eagle Scout project, as well.

Niko Rabin is the littlest dragonfly watcher these days.

Niko's father, Andy, a 37-year-old computer programmer, remembers Niko somehow dragging the both of them into this obsession three years ago, when he tired of dinosaurs. At 7, Niko is already a veteran of a world dragonfly conference attended by eminent PhDs in New Jersey last month, and soon he'll enter second grade with an entomologist's vocabulary.

The pastime became a passion for the father, too. He and Munroe are now collaborating on a dragonfly field guide for Northern Virginia. About 30 of the continent's 300 species can be found here, including the least clubtail they excitedly spot for the first time in

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Reston on last Saturday's count. Maybe people are starting to get it that backyard fertilizers and pesticides can pollute wetlands even 10 miles away, Munroe speculates, because the least clubtail chooses only relatively clear streams for its habitat.

Munroe's own fascination, fed by a father who taught biology for 32 years, is as spiritual as it is scientific.

"It's hard to be sad around dragonflies," he observes. "There's nothing depressing or tired or melancholy about them. There's something almost supernatural about them. They seem to me to come out of a fantasy novel, like something from Tolkien."

The larvae live underwater for up to eight years, fighting to survive the gluttony of ducks, the cravings of carp, before emerging as teneralis. Munroe finds one clinging to a blade of grass, its cellophane wings still too wet, its thorax too soft and weak, to fly. Within a few hours, the sun's heat will bring neon colors to the teneral's dull brown body, and send blood pulsing through the filament veins that form unique lacy patterns on the dragonfly's four wings. Males stake out a territory and defend it by displaying their colors and patterns, posturing like hopped-up insect boxers and engaging in aerial combat as they zoom along at up to 40 miles per hour.

Some species flew alongside dinosaurs, but hundreds of millions of years of evolution have not changed the destiny of dragonflies once they burst forth: They last but one season in the sun before dying.

The dragonfly counters move across the thoroughfare to Bright Pond, where Brendan annoys his mother by pretending to put his net over the dark ponytail that hangs to her waist. "Whatever you're doing, stop!" she chides. He goes off by himself again, popping wild blackberries into his mouth along the way. He wades out into the murky water, swishing his

net, and rejoins the group, presenting O'Connell the dainty orange Halloween pennant he has captured. Mother and son admire the tiny dragonfly, then let it go.

"It's relaxing and peaceful and that's good," O'Connell says of these annual treks. But it's bittersweet this year. Barney died of cancer just 10 weeks ago, at 58. The dragonflies had not yet emerged.

His wife and son came out alone this year, wishing they could have had one last afternoon together watching comet darners whirl and dive and disappear in the warm sun.

Greg Blanpied is trying his hardest to disappear. His mother is chatting up everyone and laughing at everything as they wander through the manicured grounds behind Fannie Mae headquarters. His father is snapping pictures left and right. They're having a great time. Greg is 11 now. He climbs a tree and ignores them behind his sunglasses.

This is one of Linberg's favorite stops on the dragonfly count, this secret oasis of towering trees and winding paths and a pond fringed with pink lotus blossoms.

Greg's enchantment with dragonflies has given way to a passion for Lego robotics and riding his bike as fast as he can, his mother laments. He likes to close his bedroom door and listen to his iPod in the dark. "He's pretty much an ornery cuss with me," Linberg allows. She knows it's a phase, that he just needs something, someone, to push up against, to test his own strength. Still, she yearns "to get back to that place where we were all in it together."

She still hasn't gotten around to redecorating that god-awful bathroom, but there's too much more to do. She tends the butterfly garden at Greg's

school, and volunteers in the library. She pitches in with gusto at all kinds of community events, even agreeing to wear a squirrel costume in sweltering heat for the annual Reston Festival. And it's a given that "we'll be back, always," for the dragonflies.

Greg surprised and touched her last spring when he asked her to talk about her cancer for a kind of show-and-tell in health class. All sorts of appropriate permission slips and waivers had to be signed, but Linberg stood before the fifth-graders and answered as best she could every question they had.

Does it hurt every day?

No.

Did you think you were going to die?

Yes.

Sometimes Greg wears some of her pink jelly bracelets on his own slender wrist in solidarity. Linberg has been in remission for four consecutive dragonfly counts now. Greg slides down from the tree and Andy Rabin shouts across the pond, "Kevin! Comet darner!" and Munroe lopes up. "Really? Did you see what direction he went?" Dragonflies are clever, their heads are nearly all eye, and those who catch them know there's usually just one chance only, and then they're gone.

Linberg wants to keep going to the next pond, a more arduous hike through cut-grass, but Greg shakes his head and mumbles a protest. His mother persists. "I can't have you fade like this, son," she pleads. "... Drink some water. C'mon, be strong." Brendan Honeychuck nets a black saddlebag and Munroe shouts "Fantastic!" and the dragonfly counters gather around. Brendan looks guiltily at the motionless creature. "I think he knocked himself out," he says. Munroe is quick to offer reassurances. "He'll be okay, I think, once he gets in the sun."

The dragonfly does rally, and then takes off, hurtling itself with colors flashing and wings shimmering, into the beckoning summer. ■

An Integrated Curriculum For The Washington Post Newspaper In Education Program

One Giant Leap

The seemingly impossible dream to land a man on the moon and return him safely back to Earth was realized in 1969, and took up the entire front page of The Post of July 21, 1969:

By THOMAS O'TOOLE
Washington Post Staff Writer

HOUSTON, July 20—

Man stepped out onto the moon tonight for the first time in his two-million-year history. "That's one small step for man," declared pioneer astronaut Neil Armstrong at 10:56 EDT, "one giant leap for mankind."

Just after that historic

moment in man's quest for his origins, Armstrong walked on the dead satellite and found the surface very powdery, littered with fine grains of black dust.

A few minutes later, Edwin (Buzz) Aldrin joined Armstrong on the lunar surface and in less than an hour they put on a show that will long be remembered by the worldwide television audience.

The two men walked easily, talked easily, even ran and jumped happily, so it seemed. They picked up rocks, talked at length of what they saw, planted an American flag, saluted it, and talked by radiophone with the President in the White House, and then faced the camera and saluted Mr. Nixon.

"For every American, this has to be the proudest day of our lives," the President told the astronauts. "For one priceless moment in the whole history of man, all the people on this earth are truly one."

Seven hours earlier, at 4:17 p.m., the Eagle and its two pilots thrilled the world as they zoomed in over a rock-covered field, hovered and then slowly let down on the moon. "Houston, Tranquillity base here," Armstrong radioed. "The Eagle has landed."

At 1:10 a.m. Monday—2 hours and 14 minutes after Armstrong first stepped on the moon—two men were back in their moon craft and the hatch was closed.

In describing the moon, Armstrong told Houston that it was "fine and powdery. I can kick it up loosely with my bare feet."

"It adheres like powdered charcoal to the boot," he went on, "but I only go in a small fraction of an inch. I can see my footprint in the moon like fine grainy particles."

Armstrong found he had such little trouble walking on the moon that he began talking almost as if he didn't want to leave it.

"It has a stark beauty all its own," Armstrong said. "It's like the desert in the Southwestern United States. It's very pretty out here."



Editors note: Reprinted from *The Century: History as It Happened on the Front Page of the Capital's Newspaper, 1999.*

JULY 21
1969

The Weather
Today—Showers, thunderstorms, high 80°. Tonight—Partly cloudy, high 70°. Chance of rain, 20%. Night—Winds, 10 mph, 1010 mb. Temperature range, 60° to 70°. Windchill, 60°. Details, Page D2.

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The Washington Post
Times Herald

MONDAY, JULY 21, 1969

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'The Eagle Has Landed' — Two Men Walk on the Moon

'One Small Step For Man... Giant Leap for Mankind'

By Thomas O'Toole
Washington Post Staff Writer

HOUSTON, July 20—Man stepped out onto the moon tonight for the first time in his two-million-year history. "That's one small step for man," declared Neil Armstrong at 10:56 EDT, just after final liftoff moment in man's quest for his origins. He stepped on the dead satellite and found the surface very powdery, littered with fine grains of black dust.

A few minutes later, Edwin (Buzz) Aldrin joined Armstrong on the lunar surface and in less than an hour they put on a show that will be remembered by the worldwide television audience.

American Flag Planted

The two men walked easily, talked easily, even ran and jumped happily as they strolled across the rocky, desolate surface of what they saw, planted an American flag, saluted it, and talked by radiophone with the President in the White House, and then faced the camera and saluted Mr. Nixon.

"For every American, this has to be the proudest day of our lives," the President told the astronauts. "For one priceless moment in the whole history of man, all the people on this earth are truly one."

Seven hours earlier, at 4:17 p.m., the Eagle and its two pilots thrilled the world as they zoomed in over a rock-covered field, hovered and then slowly let down on the moon. "Houston, Tranquillity base here," Armstrong radioed. "The Eagle has landed."

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"It adheres like powdered charcoal to the boot," he went on, "but I only go in a small fraction of an inch. I can see my footprint in the moon like fine grainy particles."

Armstrong found he had such little trouble walking on the moon that he began talking almost as if he didn't want to leave it.

"There seems to be no wind or air," he said. "It's very peaceful. It's even easier than I thought. Of course, we did have a hard time getting off the ground."

One of the first things he did was to take a sample of the soil and then slowly let down on the moon. "Houston, I've got a sample of the soil. It's real like a soil sample from a coastal area. It's very sandy," Aldrin said, looking down from the LEM.

"Armstrong told him, 'I'm sure I could push it in farther but I can't get it in far,'" Aldrin said.

Guides Aldrin Down

At 1:11 p.m., Aldrin started down the landing craft's ladder, guided by Armstrong. Slipping down the narrow metal ladder, Aldrin looked back at Armstrong, who stood at the foot of the ladder. "Armstrong said, 'watch your steps (that's for portable life support). Don't drop your gear down. You're clean. You can stand clear on your feet,'" Aldrin said.

"Okay," Aldrin said. "You need a little assistance of the hatch."

After he stepped onto the first rung of the ladder, Aldrin went back up to the LEM's front hatch and carefully made his way down the ladder again. "Making sure not to knock it on my way out," he said in conclusion. "That's our home for the next couple of hours and I want to make sure we can get back."

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The Thrills of Physics

For Area High School Students, Theme Park Becomes a Laboratory

By NELSON HERNANDEZ
Washington Post Staff Writer

• Originally Published April 26, 2008

Let's be honest here: How much is an amped-up teenager really going to learn about physics by riding a roller coaster called the Mind Eraser?

Not a whole lot. But Isaac Newton would have been sooo jealous.

More than 4,000 students from across the region poured through the main gates of Six Flags America in Largo for Physics Day yesterday, passing onto the park's faux-Colonial "Main Street 1776" the day before the park officially opens for the season. Janet Jackson and the pop song "Live and Let Die" — apparently the preferred music of the Founding Fathers — blared in the background, and the students vibrated like atomic particles. Some wore their physics team T-shirts and brought in accelerometers and stopwatches; others were just along for the rides.

Barnabas Adekanye, Irving Delco, Frailen Ramirez, Ludwin Romero and Johnny Wilks, all sophomores at Northwestern High School in Hyattsville who study engineering, were somewhere in the middle. They had brought a 28-page workbook of problems to solve. It was complicated stuff with a lot of formulas.

"Compare the change in potential energy to the gain in kinetic energy," went one question about the Mind Eraser. "Within experimental error, was energy conserved? Explain your answer."

Johnny, 15, had an easier explanation for what they were learning: "Like how



LINDA DAVIDSON — THE WASHINGTON POST

Barnabas Adekanye, left, and Ludwin Romero, 10th-graders at Northwestern High School, ride the Mind Eraser roller coaster at Six Flags America in Largo. The teens were attending Physics Day, where they looked at rides from a physics point of view.

the gravity and force relates with the loops and stuff."

So they trotted off to the Mind Eraser and strapped themselves in. The seats allowed their legs to dangle. While students sitting behind them charged one another up, these students had that far-off look, as if they were weighing the potential risks of going at a top speed of 60 mph through loops and corkscrews and a 91-foot drop.

For Barnabas, 16, it was his first time on a roller coaster. He came to the United States from Nigeria three years ago.

"The best advice I can give is, don't

hold back screaming," said Irving, 15.

Before the ride, Irving said: "I'm not scared, but I'm going to cry like a little girl."

Afterward, he said, "Actually, I cried like a dude."

"I don't know. It makes you want to throw up," said Barnabas, who had heeded Irving's advice to the letter. In a photo taken of the ride, he bore an expression of absolute terror.

Their next destination was a ride called Roar. The boys tried to scare one another as Frailen, 15, timed the

CONTINUED ON PAGE 25

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LINDA DAVIDSON — THE WASHINGTON POST

Ludwin Romero, left, and Barnabas Adekanye ride in the front seats of the wooden roller coaster, Roar.

CONTINUED FROM PAGE 24

coaster using his iPhone. They wrote down the coaster's specifications in their workbooks. They would do the actual problems on the bus ride home, they had decided.

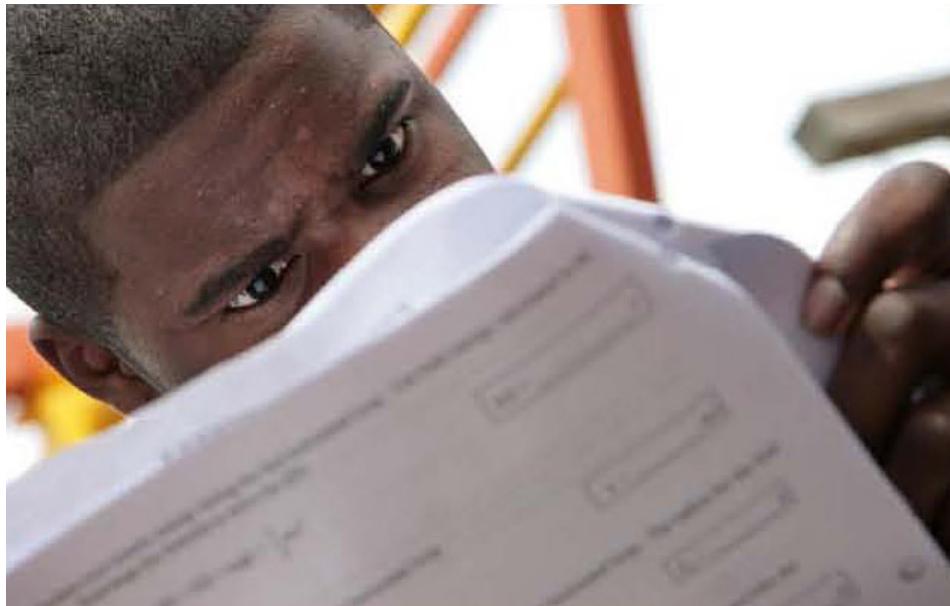
"It's wood," Irving said.

"It could collapse at any moment," Johnny said.

"This was, like, slower, I guess," Ludwin, 16, said after they were done. (He was right: The top speed of Roar is 50 mph, though it puts the rider through 3.5 times the force of gravity.) "There was a lot more curves and stuff."

On the Batman-themed ride, the Joker's Jinx, the coaster is propelled to 60 mph in three seconds by a series of magnets. The technology is similar to what physicists use in particle accelerators, but these thoughts were far from the minds of the students.

Irving screamed repeatedly — words he probably wouldn't want his family



LINDA DAVIDSON — THE WASHINGTON POST

Student Johnny Wilks answers physics questions after riding the Mind Eraser. Johnny said he was learning "how the gravity and force relates with the loops and stuff."

throwing his insides with great force.

Afterward, he gave a more sophisticated explanation. "The forces are gravitational force, centripetal force and magnetism working together to create a fun ride," he said. "You can't see it, but you know it's happening."

After a lunch of chicken, corn, and macaroni and cheese, the boys headed out for their final and most intense experiment: Superman: Ride of Steel. By now, physics had been mostly forgotten. There was a deeper lesson being learned at the theme park: overcoming primal fear.

While they waited, a girl who had just finished the ride walked by with a boy, flopping her hands and crying. "I can't feel my hands!" she wailed.

"The ride is going to do that?" Frailen said with alarm.

Irving crossed himself. Ludwin tried to duck out on the lame excuse that he had just eaten, but the power of peer pressure found him and everyone

else strapping on the orange seat belts and lowering the safety bars over their laps. The coaster lurched to a start and climbed up. Way up. One hundred and ninety-seven feet up.

As it crested the hill to a 205-foot drop that would hit a top speed of 73 mph, the boys started screaming. Ludwin waved his arms out of the coaster. Barnabas gasped shouts of horror. Others uttered unprintable imprecations. After the drop, the ride took them into a series of twists and humps that had everyone grabbing the safety bar for dear life.

"I love physics! I love science! I love engineering!" Irving yelled.

Then, with perfect comic timing: "I love my mommy!"

As rapidly as it started, the ride was over. The boys had survived their encounter with mass times acceleration, and they stumbled out of their seats dazed but triumphant.

"I feel great," Frailen said.

"I am officially a man," Irving said. ■

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Academic Content Standards

This lesson addresses academic content standards of Maryland, Virginia and the District of Columbia.

Maryland

Reading: Analyze and interpret important ideas and messages in literary texts.
 c. Summarize or paraphrase
 e. Explain the implications of the text that may have implications for the reader.
 (Standard 3.0 Comprehension of Literary Text)

English: Read critically to evaluate informational text (Indicator 6).
 c. Verification of information across multiple sources (Grade 8, Standard 2)

Science: Recognize and explain that fossils found in layer of sedimentary rock provide evidence of changing life forms. (Grade 8, Earth/Space Science, Standard 2, History)

Science: Describe how lunar and solar eclipses occur. (Grade 8, Earth/Space Science, Standard 2, Astronomy)

The Maryland Voluntary State Curriculum Content Standards can be found online at <http://mdk12.org/assessments/vsc/index.html>.

Virginia

English: The student will write narratives, descriptions, and explanations. (Writing, Grade 6, 6.7)

English: The student will read and analyze a variety of literature.
 a. Identify format, text structure and main idea.
 b. Identify the characteristics that distinguish literary forms.
 d. Explain the relationships between and among elements of literature: characters, plot, setting, tone, point of view, and theme.
 e. Explain the relationship between the author's style and literary effect.
 g. Explain the influence of historical context on the form, style and point of view of a written work. (Reading Analysis, 9.3)

Science: The student will investigate and understand the organization of the solar system and the relationships among the various bodies that comprise it. Key concepts include
 a. the sun, moon, Earth, other planets and their moons, meteors, asteroids, and comets;
 i. the history and technology of space exploration (Interrelationships in Earth/Space Systems 6.8)

Standards of Learning currently in effect for Virginia Public Schools can be found online at www.pen.k12.va.us/VDOE/Superintendent/Sols/home.shtml.

Washington, D.C.

Reading/English Language Arts: Recognize that some words and phrases have both a literal and nonliteral meaning (e.g., take steps). (Grade 3, 3LD-V.11)

Reading/English Language Arts: Create multiparagraph essays that
 • present effective introductions and concluding paragraphs and
 • guide and inform the reader's understanding of key ideas and evidence. (Grade 5, 5.W-E.3)

English: Write interpretations of literary texts that

- Extend beyond summary and literary analysis;
- Address the author's techniques;
- Draw inferences about its effects; and
- Support inferences through references to the text or other works. (Expository Writing, 10.W-E.4)

Physics: The laws of conservation of energy and momentum provide independent approaches to predicting and describing the motion of objects. (Conservation of Energy and Momentum, P.3)

Learning Standards for DCPS are found online at www.k12.dc.us/dcps/Standards/standardsHome.htm.