BRADENTON HERALD

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THE SCHOOL DISTRICT OF MANATEE COUNTY FEATURES A STUDENT AND A CAREER & TECHNICAL EDUCATION TEACHER

Newspaper in Education Presents

Inquizi? Kidz

Brought to you by Adult, Career & Technical Education

Kidz Biz & Buzz

Launching into a Fabulous Future

Angalique Schweitzer plans to make the most of her last year at Johnson Middle School of International Studies. "I like being involved in TSA and I learned I like competition," she said. "I placed third in the state for the Challenging Tech Issues event and the Prepared Speech event. I want to compete in Inventions & Innovations, Multimedia, Dragster and TSA Marine Cup Challenge this year."

"Last year," Angalique continued, "I was the president of TSA and I am running for the same position again. If you are an officer in your TSA chapter, you can attend the TSA Leadership Training Conference and Competition in Orlando. I went last year and it was really great."

"Competing in TSA has really sparked Angalique's confidence," said Suzanne Jarrell, who co-advises TSA along with Mr. Hollis Bostic. "She has just blossomed through her middle school years." The theme of this year's TSA leadership event is *Launching into Orbit*, a perfect topic as Angalique launches into a fabulous future.

TECHNOLOGY STUDENT ASSOCIATION

Inno Vators

Bridge Basics

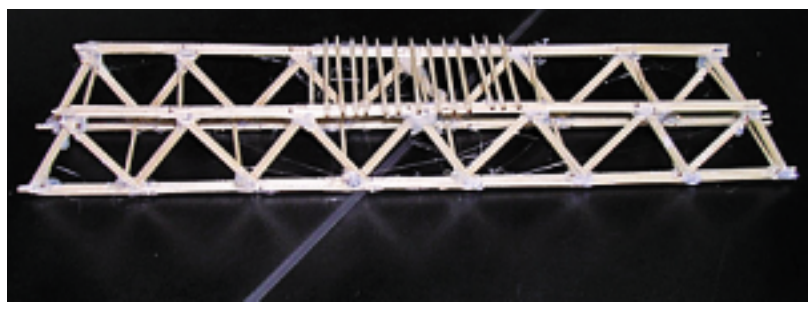
Have you ever ridden across a bridge with your face glued to the car window, fascinated by the scene rushing past? Maybe you marveled at how high you were or how pretty the water looked below. Did you ever stop to think about the bridge itself? What kind is it? How is it able to hold such a heavy load?

Although there are many types of bridges, the three main types are the *beam bridge,* the *arch bridge,* and the *suspension bridge*. These three differ in span, or the distance between two bridge supports. While a beam bridge can span a distance up to 200 feet, an arch bridge spans between 800 and 1,000 feet. Still, the suspension bridge surpasses both of these with the ability to span a distance of about 7,000 feet! That's 1.3 miles!

What makes one type of bridge able to span a greater distance than the others? It all depends on how each bridge handles the forces of compression and tension. Compression is a pressing force that squeezes a material together; tension is a stretching force that pulls on a material. Because these forces occur in every bridge, the design of the bridge is responsible for evenly distributing them, ultimately preventing the structure from buckling or snapping.

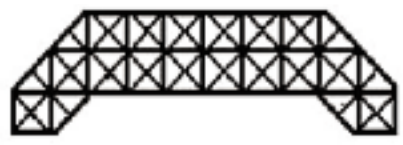
Next time you cross a bridge, notice how far apart the bridge supports lie. Does it have triangular trusses like the beam bridge, or is it held up by powerful cables like the suspension bridge? Are there any arches? Keep your eyes open for more than the awesome view!

Students in Technology Education classes at Johnson Middle School are building bridges from toothpicks, testing their designs by placing weighted loads on the bridge and measuring its strength. For an interesting look at some of the world's most famous bridges, visit http://en.wikipedia.org/wiki/Bridge. There you'll find over 50 pictures of various bridges and a list of catastrophic bridge collapses including our own Sunshine Skyway. Or, play a virtual bridge game at www.pbs.org/wgbh/nova/bridge/build.html.



Explore It

Build a Bridge from Toothpicks



You will need:

- 2 (250 count) boxes of standard wood toothpicks
- 1 small bottle of carpenter's wood glue

Using only these materials, build a bridge entirely from toothpicks. Have fun trying out different shapes, and then putting weight on your bridge to see how strong it is.

For students desiring to compete in bridge-building contests, your bridge has a few strict rules. Bridges must stand alone and not be a flexible structure. Do not cut or alter the toothpicks. Only glue where toothpicks touch or where one crosses another. Competition bridges must be built to the following specs:

- Maximum weight = 125 grams (4.4 ounces).
- Minimum Length = Must exceed 20.00 inches
- Maximum Length = 25.5 inches
- Maximum Height = 18.00 inches
- Maximum Width = 7.00 inches

One of the methods you can use to make a stronger bridge is to construct triangles, as shown in Figure 1. Figure 1 shows the construction of a tetrahedron (a polyhedron with four sides). Begin by gluing three toothpicks together to form a triangle. Then build a pyramid of toothpicks from each of the triangle's corners. This is a very rigid and strong structure. If you continue to use this method, you will get the maximum strength from the toothpicks.

FIGURE 1

School Biz & Buzz

Exploring Technology

Suzanne Jarrel is immersed in technology. This Johnson Middle School of International Studies teacher can't help but integrate technology into the classroom. She teaches technical education for two periods each day and serves as a Technology Student Association (TSA) advisor, but that's only a fraction of her day. As Johnson's network specialist, she is responsible for managing the campus computers and network. She is also a staff developer, coordinating testing and reading literacy, and is the instructional technology specialist, where she coaches other teachers on how to integrate technology into the curriculum.

Suzanne's technology education students enjoy exploring many facets of technology including communication, production, transportation, and manufacturing. Students may also join TSA, a national student organization that focuses on creating leaders as well as enhancing science, technology, engineering, and math learning. TSA members have the opportunity to use their newly acquired knowledge and skills to compete at district, state, and national levels.

Suzanne's philosophy of life is also her philosophy of teaching: "If it is worth doing, it is worth the effort to do it right."

Discover the Future

Regional Careers: : Here are examples of related occupations and current wages in the Suncoast Workforce Region.

Occupational Title	Entry Level	Experienced
Minimum wage	**$7.25**	**—**
Architectural and Civil Drafters	$13.36	$24.08
Civil Engineering Technicians	$15.68	$23.53
Civil Engineers	$26.89	$40.09
Surveying and Mapping Technicians	$13.68	$21.99
Surveyors	$14.03	$32.64
Construction and Building Inspectors	$17.62	$24.32

Source: *http://fred.labormarketinfo.com FL Labor Market Statistics, Occupational Employment Statistics & Wages Program*

Career Pathway: Students desiring a career in any of these areas can find related educational programs at these schools*:

Johnson Middle School, Southeast High School, Manatee Technical Institute, State College of Florida, University of South Florida

*Other Manatee schools may offer similar programs. Listed schools are related to today's issue.

Web Wise

Check out the following websites:

www.toothpickdesign.com
www.pbs.org/wgbh/nova/bridge/build.html
http://en.wikipedia.org/wiki/Bridge
www.tsaweb.org
www.floridatsa.com

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Shaping the Future
ACT
ADULT, CAREER AND TECHNICAL EDUCATION
SCHOOL DISTRICT OF MANATEE COUNTY, FLORIDA

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Newspaper in Education

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