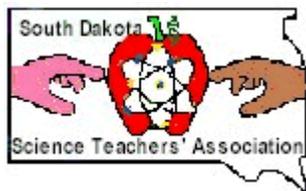


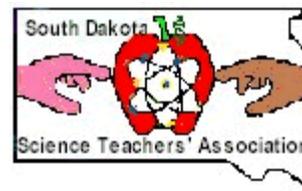
# South Dakota Science Teachers' Association



## Summer 2014

June 2014

Volume 133



### President's Letter—Julie Olson

As always, this summer offers a wide variety of opportunities to rest and relax as well as rejuvenate and add to our teaching repertoires. It still amazes me how time seems to go faster and faster. My school year ended with the opportunity to see my son graduate from college AND get a job! There is nothing like seeing your child (and your students) succeed and become independent.

I would like to encourage everyone to take advantage of the multiple opportunities that will come your way during your teaching careers. You have no idea how far reaching these opportunities can lead. I recently got to travel to Dubai, UAE. How did I end up with that opportunity? Writing for the NGSS was an opportunity I received partially as a result of receiving the Presidential Award in 2007. Part of the PAEMST application is professional development and engagement – go to workshops and summer classes, taking courses, and sharing what you know. Take a chance and present at the state conference. Veteran teachers - invite a newer teacher to present with you. I am truly pleased and excited about the Next Generation of science teachers entering the profession. We “old dogs” can learn a lot from them. Contrary to popular belief, we don't bite.

Dubai was an amazing place to visit. Myself and three other NGSS writers were invited to present on the NGSS to the American Curriculum schools. These are private schools that use American based curriculum. It is a testament of the strength of the NGSS that it is being adopted not only in the USA but all over the world.

Before NGSS, each private school in the UAE (and other areas of the world) typically adopted the curriculum their administrators are familiar with. In talking to the educators at the conference, there were at least five different state science curriculums being used. This is in addition to international curriculums. Add to this administrator (many from the USA or UK) turnover can be very quick, all adds up to turmoil and difficulty in developing a good program within a school which we all know takes years.

It was not all work and no play. I got to witness the engineering feats of the Burj Khalifa (world's tallest building) as well as the Palm Jumeirah and world islands (under construction). The natural wonders of the desert ecosystem and Arabian Sea were amazing. Seeing an indoor ski resort (in a mall) was remarkable but I didn't

have time to try it out. The spice souk (market) was very interesting in the knowledge of the medicinal use of the various plants and minerals the shop keepers had. If I have a chance to go back, I would like to learn more about the local cultures.

If you have an idea for a grant, submit it! It is definitely some of the best professional development you will engage in by forcing you to reflect on your teaching. If you don't get the award or grant, you still gain. Use Thomas Edison as an example. To Edison all failure provided valuable information that he could use to correct his course, and lead him to eventual success.

Take care and have a wonderful summer. Engage in some professional development if you have time.

Sincerely,

*Julie Olson*

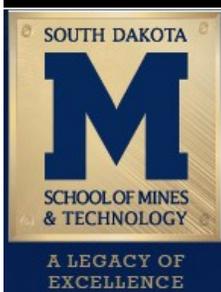
*SDSTA Pres. 2014-2016*



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## SDSTA Junior Regional Science Fair winners



High Plains Regional Science & Engineering Fair, Rapid City, SD

**Project:** Fishy Fungi

**Teacher:** Dr. Tami Whalen  
Spearfish Classical Christian School

**Winner:** Sierra Hauff  
7<sup>th</sup> Grade

**Abstract:** Every year almost half of incubated fish eggs are contaminated and killed by fungus. When such great amounts of money are going into raising these fish we want them to be healthy and have an increased amount grow into adult fish. When I did my experiment I put one fish egg in each dish and added ingredients. Then observation notes

were taken of what happened over a seven day period. The results showed that cloves are a good alternative prohi-bitor of fungus on fish eggs. This is great for the fish because they will be healthier and for the hatchery workers because they will not have to work with formalin. In the future, cloves may be a suitable replacement for formalin.



South Central South Dakota Science and Engineering Fair, Mitchell, SD (Dakota Wesleyan)

**Project:** Water Quality on the Rosebud Reservation

**Teacher:** Kate Haswell  
Spring Creek Elementary (Todd County School District)

**Winners:** Natalie Bordeaux (7th), Shelby Little Shield (7th), Molly Knife (8th)

**Abstract**

Contaminated lake water can kill plants and animals and it can also harm people. According to the World Water Monitoring

Database, no data has been collected about the water quality on the Rosebud Reservation. To determine if the water around us was safe, we asked the question, "Is the lake water on the Rosebud Reservation safe for plants, animals, and people?" We thought that Rosebud Dam was going to have the most contaminated water because that is the most visited dam on the reservation. We also thought Scott's Dam would be the cleanest because it was the newest body of water. We went to eleven different testing locations, and completed turbidity, pH, and dissolved oxygen tests three times at each location. Our hypothesis was partially correct because the results showed us that Scott's Dam and Rosebud Dam were not the cleanest, but they were also

not the most contaminated. Generally, we found that areas that are more populated had the worst turbidity and pH results. We also noticed that all the testing locations had a severely low dissolved oxygen testing result. This is a concern because there are a lot of animals that live in the water and if there is not enough oxygen, animals cannot breathe. We think the testing locations all had low dissolved oxygen levels because we noticed a lot of manure near the locations, and we know that manure decreases the dissolved oxygen. We are very concerned about the water quality on the Rosebud Reservation.



Northern SD Science & Mathematics Fair, Aberdeen, SD

**Project:** Eye Spy: Bacteria

**Teacher:** Bob Brown  
Simmons Middle School, Abdn

**Winner:** Hannah Johnson  
8<sup>th</sup> Grade

**Abstract:** My problem is as follows: Which contact lens solution kills bacteria the best?

I did my procedure by first sanitizing my area (light the

Bunsen burner, run things through flames, etc.) and continuously sanitizing throughout the whole procedure. I then completely covered the petri dish in the bacteria (E.coli or Bacillus Subtilis, I did both) tuning 90 degrees and coating both ways. I then squirted one drop of contact solution on a punched out piece of filter paper and pushed it onto the petri dish using tweezers. I covered, taped and labeled my petri dishes and put them in the incubator for about 24 hours at 100 degrees Celsius. After 24 hours I took them out and

measured the kill radius and recorded the data. I repeated this for each contact solution.

I came to the conclusion that Clear Care by Ciba Vision is the best contact solution. It killed both bacteria the most, and it was also the most consistent. It killed an average of 3.5 centimeters of bacteria on E.coli and an average of 1.25 centimeters on Bacillus Subtilis. The second best contact solution was Equate, and the rest all tied for last.

## SDSTA Junior Regional Science Fair winners

Eastern South Dakota Science and Engineering Fair (ESDSEF), Brookings, SD

**Project:** Kill Them Before They Kill You

**Teacher:** Michelle Bartells  
Hamlin Middle School

**Winner:** Faith Leiseth  
8<sup>th</sup> Grade

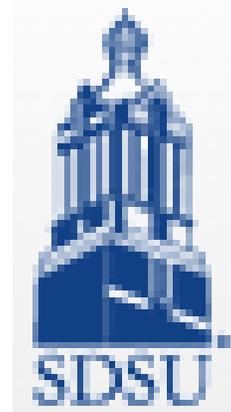
**Abstract:** The purpose of my project was to see which cleaner worked best on wood or plastic cutting boards. Research shows that the occurrence of foodborne illness in the United States each year has been estimated to be between 24 and 81 million cases resulting in up to 9,000 deaths annually and costs up to \$8.4 billion per year. My hypothesis was that the wooden cutting boards would have the most bacteria and the plastic would have the least.

I labeled all of my 8 plastic and wooden cutting boards and my 80 Petri dishes. I cut up the chicken breasts on each of the cutting boards and let them sit for 1.5 hours. Then I cleaned all of the cutting boards with their labeled cleaner. I rubbed the swabs over the plastic and wooden cutting boards and rubbed them on the correct petri dish. (Example: #1 Wooden cutting board - W1) Then I sealed the Petri dishes and put them into the incubator for 5 days. On the 5th day I measured the bacteria by how many kinds and colonies were on the petri dish.

On all of my trials Bleach only had bacteria come back on two of the dishes; trial #4 on wood which had 1 column and trial #3 on plastic which had 2 columns. Bleach would be one of the better choices for cleaning your cutting boards. The naturally clean cleaner would not be a

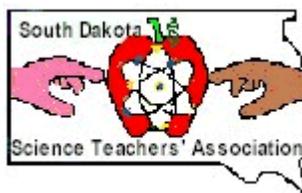
wise choice of cleaner because it only got rid of 20% of the bacteria on the plastic cutting boards and 22% on the wood cutting boards. Dawn cleaned all of the bacteria off on 5 or 10 cutting boards. And the ones that did have bacteria left had less than 5 columns on each one. After 5 days of the bacteria growing I noticed that sometimes the bacteria started growing up the side and even onto the top of the Petri dish. Some of the bacteria looked really funny with weird shapes and textures.

The average results showed that plastic had 48.5 columns and wood had 31.5 columns. The results of this experiment show that Bleach is the best cleaner and that you want to use wood cutting boards because less bacteria grows on wood cutting boards compared to plastic.



## Regional Science Fairs

The South Dakota Science Teachers supports the SD Regional Science fairs by awarding one junior high project winner at each Regional Science fair with a check for \$30. The abstracts of those winners are printed in this newsletter. {When a joint project wins, the \$30 award is divided two or three ways.}



If your address changes,  
please drop us a  
line with your  
new address so  
we can keep your  
newsletter coming  
your way.  
Newsletter@sdsta.org

## The Molecularium® Project and NanoSpace® Ready to Use Tools for the New School Year

Despite what many believe, the summer break is not all play for educators. We understand that you begin planning for fall now. As you develop your curriculum for the upcoming year, we encourage you to explore Rensselaer's Molecularium® Project ([www.molecularium.com](http://www.molecularium.com)) and its interactive website, NanoSpace® (<http://nanospace.molecularium.com>). The project was created by world-renowned scientists at the Rensselaer Polytechnic Institute (RPI) Nanotechnology Center.

Teachers across the country have already incorporated the media of Rensselaer's Molecularium Project and NanoSpace into their classrooms and have received an enthusiastic response from students. Why? NanoSpace helps to not only engage and excite students, but improves their ability to comprehend complex subject matter. "I found *NanoSpace - Molecules to the MAX!* to be both educational and entertaining. It introduced my students to the world of atoms and molecules through kid friendly characters; Oxy, Hydra, and Mel, the molecularium computer," stated Laurie Brennan, a science teacher from the Lester School in Downers Grove, Illinois.

NanoSpace features more than 25 games and activities in an amusement

park setting. NanoSpace entices visitors with colorful animations and eye-catching designs, while challenging visitors to try and beat the clock in "[Periodic Memory Game](#)" and click-and-drag atoms to construct molecules in "[Build'em](#)." The games and activities address topics including, Molecule Building, States of Matter, Electron Scales, Size Scales, Materials and DNA.

NanoSpace brings back characters who were introduced in RPI's giant-screen animated adventure *Molecules to the MAX!*, including Oxy, an inquisitive oxygen atom and the intrepid captain of the Molecularium ship; and Hydra, an enthusiastic hydrogen atom who is curious about everything. A DVD of *Molecules to the MAX!* will be available soon!

The [Educators](http://www.molecularium.com/educators.html#educators-resources) (<http://www.molecularium.com/educators.html#educators-resources>) section on the Molecularium Project website provides free, downloadable in-depth guides for teachers to implement in their classrooms. Fun, interactive and educational lesson plans, activities utilizing common, every day materials and fun facts, make it easy and turn-key for teachers to plan for



class segments on atoms and molecules. The guides even include worksheets and are easy to print from downloadable PDFs for specific grade levels. Three guides are available:

The Molecularium Project  
Teachers Resource Guide  
(grades K-4)

*Molecules to the MAX!* Educa-  
tors Resource Guide  
(grades 5-8)

Guide to NanoSpace

Please take some time to check out the free resources offered through Rensselaer's Molecularium Project and NanoSpace. We encourage you to implement something new and exciting in your classroom by trying out these wonderful educational tools.

There is a very [brief survey](https://www.surveymonkey.com/s/Molecularium) (<https://www.surveymonkey.com/s/Molecularium>) where we hope you will provide your feedback. It only takes a minute or two of your valuable time! Enjoy the summer and thank you for your dedication to making science fun for kids!



Are you interested in purchasing SDSTA logo merchandise? Pictured at left are the items that we currently have in stock. We can ship any of them to you for \$20. (We can save you \$5 if you can personally pick it up.) The sizes are:

Brown Hooded Sweaters: 3-Med, 2-Large & 2 X-Large  
TerraCotta Shirts: 1-Med, 3-Large & 2—2X-Large  
Blue Shirts: Ladies XL, Ladies XX, 1-Small, 4-XL & 1—2XL  
Green Shirt: 2XL  
Red Polo: 4 - Medium and 2 - Large  
Dark Red Polo: 2 - X-Large  
Black Polo: 1 - 2XL  
and one black computer bag

For availability, contact:  
**James@SDSTA.org**

Personal Genetics Education Project

July 29-31, 2014; 9:00 – 3:30

Boston, MA

Earn 18 PDPs for the three-day session

Cost: \$50 (scholarships available)

## Personal Genetics in the High School Classroom: Ethical, Legal and Social Issues

This three-day training for teachers will be an introduction to personal genetics and its impact on society. A wave of personal genetic information is coming – how can we prepare students to make informed choices for themselves and for society as a whole?

Current high school students are among the first generation that will have unprecedented access to information about their DNA, as genome sequencing and genetic testing become cheaper and more available. We create interactive lessons that engage students in discussions about the potential risks and benefits of knowing more about your DNA, as well as ways in which they could be impacted. Our goal is to combine accurate scientific content with the real-world impact on people and the choices they may face.

Through workshop-style sessions, we will look at examples of the hopes, realities and controversies in personal genetics. We will start with an overview: Why is genetics getting more personal? What has been happening, scientifically and technologically, since the completion of the Human Genome Project? Starting with scientific questions and concepts, we will make connections to real world opportunities and conundrums your students and their families will face in the coming years.

Topics to be covered: Advances in personal genetics, the intersection of athletics and genetics, genetics and aggression/complex human behavior, reproductive genetics, low cost genetic testing, the history of eugenics and future of genetics, crime and DNA, and critical thinking as it applies to assessing genetic risk factors.

Content Area: Biology, Health, Social Studies, Genetics, and Bioethics; grades 9 – 12

To register, click [here](#). For more information, click [here](#) or email Lauren Tomaselli at [ltomaselli@pged.med.harvard.edu](mailto:ltomaselli@pged.med.harvard.edu), or call (617) 432-1797. Visit our website at [www.pged.org](http://www.pged.org) for more information

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## The Sanford PROMISE: Biomedical Educator Enrichment Workshop



June 23-27, 2014 at the Sanford Center in Sioux Falls

This program is designed to inform educators in the current practices and techniques utilized in biomedical sciences, and to connect regional educators to regional experts in biomedical science.

This free workshop will provide middle and high school educators with specific problem based activities that support the learning of these skills and specific examples of hands-on application of techniques in current research laboratories. In addition, participants will interact and meet with a variety of scientists currently con-

ducting biomedical research projects in Children's Health, Cancer, Type 1 Diabetes, and Health Disparities.

At the culmination of the program, teachers will be given access to reagents and tools necessary for conducting the lessons in their classroom. Two University of South Dakota graduate credits will be earned as a result of participation and a follow-up problem-based assignment and reflection.

For 2014, funding as a result of a grant from the S.L. Gimbel Foundation may be able to assist with expenses for hotel and travel for those travelling a long distance.

### Registration & Information:

Registration is available online at [www.sanfordresearch.org](http://www.sanfordresearch.org) – select Education.

A maximum of 24 teachers will be accepted on a first come, first served basis. Itinerary and additional details available upon request.

If you have additional questions please contact Liz McMillan at: [SanfordOutreach@sanfordhealth.org](mailto:SanfordOutreach@sanfordhealth.org) OR (605) 312-6417.

## Water Rocket lab—Utilizing the NGSS

(a lab modified from the Turrill Public School website)

### Design and Build a Water Rocket

By designing a water rocket, students will experience the three-step design process: research and investigate, design and build, and evaluate and redesign.

**Skills Objectives:** After this lab, students will be able to

- Design an experiment
- Evaluate results against specified criteria
- Troubleshoot problems that occur during the design and build stage

### Materials

- large round balloon-provided
- scissors
- tap water
- graduated cylinder
- empty soda bottle
- poster board
- modeling clay
- tape
- altitude tracker-see part 3
- stopwatch
- tire pump (one per class)-provided
- water rocket launcher (one per class), provided

**Problem:** Can you design and build a rocket propelled by water and compressed air?

### Procedure:

1. What is Newton's first law?
2. What does Newton's first law have to do with how a rocket works?
3. What is Newton's second law?
4. What does Newton's second law have to do with how a rocket

works?

5. What is Newton's third law?
6. What does Newton's third law have to do with how a rocket works?

### PART 1 Research and Investigate

Create a data table on a separate sheet of paper. (i.e. amount of water, observations)

In an outdoor area approved by your teacher, blow up a large round balloon. Hold the balloon so that the opening is pointing down. Release the balloon, and observe what happens. **CAUTION:** If you are allergic to latex, do not handle the balloon.

Now place 50 mL of water in the balloon. Blow it up to the same size as the balloon in Step 2. Hold the opening down, and release the balloon. Observe what happens.

Repeat Step 3 two more times, varying the amount of water each time. Write down your observations.

### PART 2 Design and Build

You will design and build a water rocket using the materials provided by your teacher. Your rocket must

Be made from an empty soda bottle

Have fins and a nose cone

Use only air or a mixture of air and water as a propulsion system

Remain in the air for at least 5 seconds

Be able to be launched on the class rocket launcher

**PART 3 Altitude Tracking:** Students research and construct an altitude tracker prior to launching the rocket-track the height the rocket reaches in the air. Teachers can teach them how to calculate the height using trigonometry.

[http://exploration.grc.nasa.gov/education/rocket/TRCRocket/altitude\\_tracking2.html](http://exploration.grc.nasa.gov/education/rocket/TRCRocket/altitude_tracking2.html)

### PART 4 Evaluate and Redesign

Begin by thinking about how your rocket will work and how you would like it to look. Sketch your design and make a list of materials that you will need. Based on what you learned in Part 1, decide how much, if any, water to pour into your rocket.

**Using a simulator** (<http://www.grc.nasa.gov/WWW/K-12/bottlerocket/>) To what height does the simulator predict your rocket will go?

**Test your rocket** by launching it on the rocket launcher provided by your teacher. **CAUTION:** Make sure that the rocket is launched vertically in a safe, open area that is at least 30 m across. All observers should wear goggles and stand at least 8–10 m away from the rocket launcher. The rocket should be pumped to a pressure of no more than 50 pounds per square inch.

1. Record in a data table the results of your own launch.
2. Make any corrections or changes in your design and prepare for second launch. Record your data.
3. Compare your design and results with those of your classmates.



Launch #	Angle of elevation ( $90-\theta$ )	Height of tracker	Distance from launcher	Height calculated of rocket launch (dist.) ( $\tan(90-\theta)$ )	Total height of the rocket = tracker ht. + calc. height
#1					
#2					

Calculations: Complete the above calculations. Be sure to show all of your work, use the correct units and round to the nearest hundredth.

Analyze and Conclude

1. Observing: What did you observe about the motion of the balloon as more and more water was added?

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2. Drawing Conclusions: What purpose did adding the water to the balloon serve?

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3. Designing a Solution: How did your results in Part 1 (water balloon) affect your decision about how much water, if any, to add to your rocket?

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4. Evaluating the Design: Did your rocket meet all of the criteria listed in Step 5? Explain.

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5. What is the difference between the predicted height (from the simulation) and the actual height?

6. What factors can account for the difference between the simulator model and the actual height obtained? Give at least three:

7. Evaluating the Design: How did your rocket design compare to the rockets built by your classmates?

\_\_\_\_\_ Which rockets had the greatest flight time? \_\_\_\_\_ What design features resulted in the most successful launches? \_\_\_\_\_

8. Redesigning: Based on your launch results and your response to Question 5, explain how you could/did improve your rocket. How did these changes help your rocket's performance?

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9. Evaluating the Impact on Society Explain how an understanding of rocket propulsion has made space travel possible.

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Communicate: Write a paragraph that describes how you designed and built your rocket. Include a labeled sketch of your design.

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Sketch:/create a model that includes the forces acting on the rocket:

Resources:

How to build a water rocket launcher: <http://www.instructables.com/id/Easy-to-build,-easy-to-use,-water-bottle-launcher/>

- I suggest installing a valve into the pipe (simple rotatig type) so you can control when the rocket launched. You do have to be careful not to let the pressure exceed 80 psi.

How to determine height of a rocket using simple trigonometry and algebra: <http://waterrocket.uh-lab.de/seamcalc.htm>

## Help Review and Provide Feedback for the Proposed South Dakota Science Standards

A feedback survey has been created to allow feedback on the proposed South Dakota Science Standards. This survey will be open for the entirety of this month. You are to comment on any and all standards that may apply to your area of expertise. There is a link for each grade level, K-5. There is also one link for middle school and one for high school. Note: these links take you to a listing of only the standards. The workgroup is still finalizing the introduction, formatting and other language to accompany these standards. Please forward to other educators that you think may be interested in providing feedback.

- <https://www.surveymonkey.com/s/SDSSKindergarten>
- <https://www.surveymonkey.com/s/SDSSGrade1>
- <https://www.surveymonkey.com/s/SDSSGrade2>
- <https://www.surveymonkey.com/s/SDSSGrade3>
- <https://www.surveymonkey.com/s/SDSSGrade4>
- <https://www.surveymonkey.com/s/SDSSGrade5>
- <https://www.surveymonkey.com/s/SDSSMiddleSchool>
- <https://www.surveymonkey.com/s/SDSSHHighSchool>

For further information, please contact Sam Shaw  
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Department of Education (DOE)  
800 Governors Drive  
Pierre, SD 57501-2291  
P: (605)773-5229 | C: (605)280-0990 | F: (605)773-4236  
Email: Sam.Shaw@state.sd.us  
DOE Website: www.doe.sd.gov

*The Scientist's Manifesto*

# LEARN.

Not because you feel you **have to**  
but because you know you **want to.**

Be **inspired** by what you understand,  
and be **driven** by what you do not.

Use your mind to **realize** who you are  
and to help mankind reach its **potential.**

shun **IGNORANCE**

combat **INDIFFERENCE**

question **EVERYTHING**

and *above all...*  
never be afraid of the **TRUTH.**



# BINGO!

The search is on! Spice up your next trip on the road by searching for things that are good for the environment or that can help to reduce global warming.

Eco-tip: Put your cards into a clear plastic sleeve and mark it with a dry-erase marker. That way you can use the cards over and over again without using too much paper!

 Recycling bins	 Recycling center	 Coffee mug	 Bike lane	 Farm stand
 Wind power	 Cyclist	 Thrift store	 Train	 Public park
 River	 Clothesline	 Free	 Hybrid car	 Pedestrian
 Solar power	 Tree nursery	 Tree	 Picking up trash	 Farmers' market
 Car wash	 Diesel pump	 Person raking	 Garden	 Yard sale

## Climate Bingo!

Spice up your next car ride or bus trip! In this game you will be on the lookout for things that are good for our climate and environment and things for things that can sometimes hurt them. Our bingo generator creates a unique card for each player. You can learn all about the different items on our website: <http://climatekids.nasa.gov/bingo>.

NASA's Space Place is an NASA educational website about space, technology, and Earth sciences. It targets upper-elementary-aged children.



## The Hottest Planet in the Solar System

By Dr. Ethan Siegel

When you think about the four rocky planets in our Solar System—Mercury, Venus, Earth and Mars—you probably think about them in that exact order: sorted by their distance from the Sun. It wouldn't surprise you all that much to learn that the surface of Mercury reaches daytime temperatures of up to 800 °F (430 °C), while the surface of Mars never gets hotter than 70 °F (20 °C) during summer at the equator. On both of these worlds, however, temperatures plummet rapidly during the night; Mercury reaches lows of -280 °F (-173 °C) while Mars, despite having a day comparable to Earth's in length, will have a summer's night at the equator freeze to temperatures of -100 °F (-73 °C).

Those temperature extremes from day-to-night don't happen so severely here on Earth, thanks to our atmosphere that's some 140 times thicker than that of Mars. Our average surface temperature is 57 °F (14 °C), and day-to-night temperature swings are only tens of degrees. But if our world were completely airless, like Mercury, we'd have day-to-night temperature swings that were hundreds of degrees. Additionally, our average surface temperature would be significantly colder, at around 0 °F (-18 °C), as our atmosphere functions like a blanket: trapping a portion of the heat radiated by our planet and making the entire atmosphere more uniform in temperature.

But it's the second planet from the Sun -- Venus -- that puts the rest of the rocky planets' atmospheres to shame. With an atmosphere 93 times as thick as Earth's, made up almost entirely of carbon dioxide, Venus is the ultimate planetary greenhouse, letting sunlight in but hanging onto that heat with incredible effectiveness. Despite being nearly twice as far away from the Sun as Mercury, and hence only receiving 29% the sunlight-per-unit-area, the surface of Venus is a toasty 864 °F (462 °C), with no difference between day-and-night temperatures! Even though Venus takes hundreds of Earth days to rotate, its winds circumnavigate the entire planet every four days (with speeds of 220 mph / 360 kph), making day-and-night temperature differences irrelevant.

Catch the hottest planet in our Solar System all spring-and-summer long in the pre-dawn skies, as it waxes towards its full phase, moving away from the Earth and towards the opposite side of the Sun, which it will finally slip behind in November. A little atmospheric greenhouse effect seems to be exactly what we need here on Earth, but as much as Venus? No thanks!

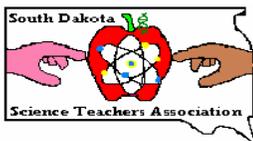
Check out these “10 Need-to-Know Things About Venus”:

<http://solarsystem.nasa.gov/planets/profile.cfm?Object=Venus>.

Kids can learn more about the crazy weather on Venus and other places in the Solar System at NASA's Space Place: <http://spaceplace.nasa.gov/planet-weather>.

Image credit:

NASA's Pioneer Venus Orbiter image of Venus's upper-atmosphere clouds as seen in the ultraviolet, 1979.



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## Save the Date!

Tuesday, August 19 is the 175th anniversary of International Photography Day. In honor of that, and in anticipation of South Dakota's 125th Anniversary of Statehood, South Dakota Public Broadcasting will be asking people across the state to document their life, in photographs, on August 19th. Our theme is "A Day in South Dakota." We'll be asking professional and amateur photographers to document what being "South Dakotan" means to them, photos of home, work, connections, and their favorite place.

Details will be forthcoming. We're sending you this heads-up so that you get it on your calendar. We'd love your participation; for more information, go to <http://www.sdpb.org>

The SDSTA Newsletter is published four times a year. The June issue (this one) is e-mailed to 140 paid members, and several school science departments.

The Membership year in SDSTA starts with the February conference and ends the first of February. Dues are due at each conference for member discount rates.

SDSTA members may give a one year free membership to their student teachers by submitting the student teacher's name & address.

One may be given to the SDSTA member that has made a submission to the newsletter (or given a presentation at the conference) and has referred at least three new members.

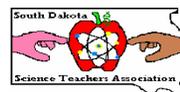
Members may also earn a 10% finders fee for any science related ads placed in the newsletter. Our rates are \$75 per page (or 3 to 4 quarter pages) or \$250 per page to place an ad in four consecutive issues.

### Exploration Design Challenge

This is a fun opportunity for K-12 students to get involved with a NASA design challenge. One day NASA will travel to an Asteroid and Mars and needs your help to test materials for solar radiation. Easy to follow guidelines and great inspiring videos. Check it out. Who knows what engineering is waiting to be discovered from your classroom!

[www.nasa.gov/audience/foreducators/spacelife/explorationdesign/overview/index.html#.U2KO9Mcmw6F](http://www.nasa.gov/audience/foreducators/spacelife/explorationdesign/overview/index.html#.U2KO9Mcmw6F)

Mail to: Deirdre Peck, SDSTA Treas  
409 S. Kline Street  
Aberdeen, SD 57401



\$ 5 Student  
\$ 5 K - 6  
\$ 5 Retired  
\$ 20 All Others

Name \_\_\_\_\_ Home Phone \_\_\_\_ - \_\_\_\_  
Home Address \_\_\_\_\_ E-mail: \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Your School \_\_\_\_\_ School Phone \_\_\_\_ - \_\_\_\_  
School Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Your area K - 6 7 - 8 9 - 12 College Other \_\_\_\_\_  
( circle one )

Referred by \_\_\_\_\_

