KIDS' SCIENCE CHALLENGE

2008 - 2011

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TYRONE HUTCHINSON, II, GRAND-PRIZE WINNER, SPORTS ON MARS, 2009

Tyrone invented "Magnetic Soil Ball," which could be played on the surface of Mars, taking advantage of the red planet's ferrous soil and low gravity. We couldn't take him to Mars, but we did the next best thing: he visited the "Mars Yard" at the Jet Propulsion Laboratory in Pasadena, CA, and Tyrone got to do something that even members of Congress don't get a chance a do – enter the **Clean Room and see the next** generation of the Mars Rover up close - dressed in a white "Bunny Suit"!

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MUSICAL CHIMES

"I got this idea because I was looking at the wind chimes on my porch one evening and thinking about a bell set. I tried to put them together with a spin on it and I thought it sounded like a good idea, so I went for it. I love music and science, so it was perfect for me."

Lexey Cordell, sixth grade

LETTER FROM THE FOUNDER



Kids' Science Challenge Founder and Director Jim Metzner and Merrie Benjamin, KSC Sensational Sounds grand prize winner, with the instrument she invented: the Spritzer Whizzer! I grew-up in a "science house," which means I could identify several microorganisms before I knew the names of any major league baseball players. A walk in the woods meant searching for salamanders and my basement was a place to do dubious chemistry experiments. When I discovered the worlds of sound recording and radio, it was inevitable that they would one day blend with the worlds of nature and science. For the past three decades I've met thousands of scientists and told their stories, illustrated with sounds, in my radio series *You're Hearing America, Pulse of the Planet, Sounds of Science* and *Science Friday.* I've journeyed from glaciers to rainforests, from laboratories to, yes - baseball fields, exploring the realm of science. And although *Pulse of the Planet* reaches over 400,000 listeners daily all over the world, relatively few of our listeners are children.

So how to turn kids on to science and engineering? There is certainly a need. I just attended a State University of NY conference where the Provost descried the low numbers of STEM (Science, Technology, Engineering and Math) graduate students nationwide. He and others spoke of the importance of reaching elementary school kids with the message that the fields of science and engineering are meaningful and exciting. That, in a nutshell, is the mission of the Kids' Science Challenge. Of course, it's not just about filling seats in college science classrooms. Educators and government officials agree that the future of the United States depends upon on our expertise in science, engineering and technology, and we are losing ground in part due to a shortage of engineers and science specialists.

The KSC is enticing thousands of kids to develop critical thinking skills, use their natural curiosity, and discover that science and engineering are relevant and even fun.

Four years ago, when the idea came to create a nationwide science competition for kids, our team looked at the landscape of other competitions and saw that very few were reaching the crucial age window of 8 – 11 years, when kids are still open to concepts which could have an impact on the rest of their lives. Some of these competitions seemed to be designed for kids already in the "science camp" – for example, eligibility was limited to winners of science fairs. With the support of a major grant from the National Science Foundation, we created a competition for all kids – especially those who haven't necessarily thought of themselves as scientists or engineers. And it's working. In this report you'll see stories of several KSC entrants which will help "restore your faith in the future," as one radio listener put it after hearing two KSC winners interviewed on NPR's *Science Friday*. But it's not just about winners. The KSC is enticing thousands of kids to develop critical thinking skills, use their natural curiosity, and discover that science and engineering are relevant and even fun.

As we chart our course for expanding the KSC, we are planning a Careers in Science initiative to help kids learn about and prepare for STEM careers. We are also seeking to launch pilot local KSC competitions in both rural and urban areas.

We hope that you'll be able to help us continue the mission of the Kids Science Challenge, investing in our future, creating the future creators and scientific innovators of our society.

Jim Metzner November, 2011

MISSION STATEMENT

The Kids' Science Challenge (KSC), the premiere elementary school science competition in the US, is a free nationwide science competition for students in grades 3 through 6. The KSC creatively engages young students to use their imagination to expand our current ideas of how things work. Kids learn about careers in science, how to innovate and how their "what if" questions are the foundation of scientific thinking.

OLIVIA SMITH DONOVAN, GRAND-PRIZE WINNER, BIO INSPIRED DESIGN, 2009

Olivia was inspired by the design of helicopter seeds (maple tree seeds) to come up with a way of safely and quickly dropping emergency parcels from an airplane. She collaborated with Dr. Christopher Viney of UC Merced to invent "The Floppy Flyer" which successfully slowed the descent of small packages dropped from a height. She told Philadelphia all about her idea on "Good Day Philly" on Fox 29. In a KSC "call to action," classrooms around the country contributed their ideas to refining the design of the Floppy Flyer.



ABOUT THE KIDS' SCIENCE CHALLENGE



KIDS' SCIENCE CHALLENGE Created and directed by awardwinning radio producer Jim Metzner, best known for his daily radio series, *Pulse of the Planet*.



The Kids' Science Challenge is made possible by a major grant from the National Science Foundation.

Each year, the Kids' Science Challenge selects three science topics that are intrinsically interesting to 8 - 11 years olds. Students have an opportunity to learn more about each of these topics by using the KSC website: videos, fun facts, interviews with scientists, downloadable hands-on activities they can do at home, games, and more.

After learning about each topic, kids submit (online or by post) an idea or experiment in one of them. The submission is a brief essay outlining their idea or challenge, and a short explanation of how they came up with that idea. They can submit an optional drawing or photograph of a prototype if they wish. They are not required to complete any experiment.

The grand-prize winning students are given the opportunity to visit and collaborate with scientists to bring their ideas to life. These encounters are filmed and posted on the KSC website, allowing other students to benefit from the winners' hands-on experiences. Other prizes include science kits, equipment, and cool science toys. The first 1,000 entrants receive a free KSC Science Activity Kit with hands-on projects related to the three science topics of the year's competition.



CAMBRIDGE SCIENCE FESTIVAL

Cadbury Flavor scientist Joan Harvey, The Candy Doctors (Year One Flavor Science Grand Prize Winners), Skateboard engineer "Professor" Paul Schmitt, CreateAskate, and the MIT mascot. The KSC also provides support materials for teachers and parents so that they may appropriately guide their student through the process of coming up with a unique idea. There are lesson plans that are aligned to national standards, tip sheets, and an online "Brainstorming Cloud." These varied online tools guide parents/teachers through the brainstorming process to stimulate the students' scientific and creative imaginations and to jump-start ideas.

These 8-11 year olds hold the seeds of the future. They need role models showing them that scientists are remarkable people with skills that are really important and useful to have. They need an atmosphere around them where possibilities abound, where it's fun, and where there is encouragement to innovate. That's what the Kids' Science Challenge is all about.



KSC STATISTICS





- In 3 years over 3500 kids have entered the competition, with entries more than doubling from the 1st to the 2nd year. Approximately 52% of entrants have been girls, and 10% are homeschooled.
- In the third year of KSC, students from 44 states entered the contest.
- The KSC curricula has been downloaded by over 2800 educators and 1000 other adults have registered for the KSC mailing list. KSC is promoted through its many partners. Science equipment and toy companies who also donate prizes have sent out thousands of KSC brochures with orders and catalogues. Over 100 museums and libraries nationwide distribute information on the KSC. The competition is also listed in countless blogs and webzines, reaching kids, teachers, and parents. A Google search for "kids science challenge" yields 58,700,000 results. The National Science Teachers Association and homeschooling organizations also promote the KSC.
- The Pulse of the Planet currently airs on 213 broadcast outlets, reaching 400,000+ listeners each weekday. KSC scientists and winners are featured on the series during the contest season. To date, 146 KSC-oriented programs have been aired on the Pulse of the Planet.
- In the past year, the KSC and Pulse of the Planet websites received <source: Urchin>
 - 3,820,702 page views, averaging 10,439 page views daily
 - 10,296,593 hits, averaging 28,132 hits daily
 - 1,003,481 sessions, averaging 2,741 sessions daily (average session length 5:48)



MAKER FAIRE

New York Hall of Science, Queens, NY, 2010. Our hands-on exhibit was awarded a Blue Ribbon from Make Magazine.

SCIENCE TOPICS 2008–2011



Skateboard Engineering Come up with an idea for a new kind of skateboard.



Flavor Science Invent a flavor or how to use flavor in a new way.



Water Quality Think of a way that could protect, test or improve the quality of our water.



The Search for Extraterrestrial Intelligence (S.E.T.I.)

Dream up a new way to receive or send messages to an intelligent life form in outer space!



Sports on Mars

2009

Come up a with a brand new sport that takes advantage of the unique conditions on Mars.



Detective Science Solve a mystery using the tools of science.



Bio-Inspired Design Can nature help you invent something new?



Magical Microbes Think of a brand new way that microbes can help us.

2010



Super Stuff for Sports Find a new idea for a material to help make your favorite sport more fun or safer.



Sensational Sounds Invent your own musical instrument with a brand new sound.



Meals on Mars

2011

Find a new way to preserve, cook, deliver or sustainably produce food in flight or on Mars.



Animal Smarts

Design a toy or game that enhances the life of a pet or zoo animal and demonstrates its particular intelligence.



Zero Waste

Invent a package that never ends up in landfill.



PRESS HIGHLIGHTS

LINDSAY CARNES AND "PROFESSOR" PAUL SCHMITT, SKATEBOARD ENGINEER The Today Show, September, 2009



CLAIRE DWORSKY Scholastic's Super Science Magazine, Oct, 2009



- KSC winner Lindsay Carnes appeared on the Today Show in September, 2009. Lindsay also appeared in Time Magazine for Kids.
- KSC winners Claire Dworsky and Kamu Hamilton were featured on NPR's Weekend Edition and Science Friday in 2009. Claire also appeared in Scholastic Super Science Magazine, San Francisco Chronicle and Earth Magazine.
- Claire and UCSC oceanographer Adina Paytan presented a poster and paper at a 2010 meeting of the American Geophysical Union (AGU) demonstrating Claire's KSC entry idea.
- SC winner Tyrone Hutchinson appeared in a 2011 issue of My Weekly Reader.
- ll of our winners have appeared on their local television stations.
- KSC winners Merrie Benjamin and Peyton Robertson appeared on NPR's Science Friday in 2011.

WHAT'S SPECIAL ABOUT THE KSC

TEAM MARINE

BUSTOLOGISTS, (CAITLYN TAYLOR AND MASON WONKA), GRAND-PRIZE WINNERS, DETECTIVE SCIENCE, 2009

Caitlyn and Mason asked if forensic science could be used to find out who was responsible for dumping sand on the coral reefs off the Florida coast. They visited both environmental and criminal detectives at Syracuse **University and the Wallie** Howard School of Forensic Science to learn how scientists trace pollution in water and how science can be used to solve crimes. In Caitlyn's words: "It was interesting that after someone dies you can tell their age, height, weight with them and where their ancestors came (from their bones). I was really excited, so I am now thinking of being a forensic anthropologist."

The Kids' Science Challenge is one of the only national science competitions for students in elementary school. Students can enter either through their classroom or with the help of a parent or after-school group. The aim of the KSC is to turn this young demographic on to science at a time in their lives when they are naturally curious and open. The KSC uses this natural curiosity to begin building a foundation for science learning. By making the entry process unintimidating, kids who have not thought of themselves as scientists feel inclined to participate. As they move through this experience, they are exposed to science in fun and creative ways, making the connection between science and everyday life. This seminal learning experience sets the stage for future years. The simple process attracts students who are unsure about science. By allowing kids to enter in teams, those students who may lack confidence and not enter on their own, can enter as part of a group, using their collective brain power!



THE KSC IS MAKING A DIFFERENCE

Knight-Williams Research, Inc. a firm which specializes in the evaluation of large scale multimedia and community-based informal science education projects, has overseen the evaluation of the Kids' Science Challenge. At the conclusion of year 3 it has become clear that the KSC is making a difference.



Knight-William's evaluation asked these questions:

Do participating parent/guardians and mentors recommend the challenge?

Four-fifths (81%) of the parent/guardians and mentors expect to recommend the Kids' Science Challenge to others. Most often they endorse the learning value and potential of the challenge to impact their students' developing science identify, as in: "Our kids absolutely LOVED the Kids' Science Challenge and learned so much throughout the challenge process. When they discovered they were finalists, it really gave a boost to their scientific egos -- now they routinely say they are 'good' or 'great' in science and ALL of them are eager to enter the challenge next year." Others praise the challenge as being fun or inspiring, or they like the prizes, and/or activity kits. Some appreciate that the KSC fosters student teamwork and brainstorming; while others feel the chance to meet real scientists is a big draw.

How do students rate KSC in terms of KSC appeal, clarity, and accessibility?

Using a scale of 1 (lowest rating) to 7 (highest rating), parents/guardians and mentors consistently indicate that their students feel the competition is: welcoming/encouraging (median, 6.0), fun (median, 6.0), and that instructions are clear/easy to follow (median, 6). They also agree that their students feel the competition holds their interest over time (median, 6) and that KSC is designed for all kids –whether or not they like or are good at science (median, 6).

FLAVOR SCIENCE

Cadbury flavor scientist Joan Harvey and KSC Winners The Candy Doctors at the 2009 Cambridge Science Fair. The Candy Doctors -Ian Michael Williams, Devin Claire Hollinger, and Anna Xystros, are holding up prototypes of their invention candy tongue depressors!

PAMELA NORTHAM

"With the help of the KSC, I got five fifth grade classes of engaged and motivated learners, that's what!"

Pamela Northam

Elementary Science Cape Henry Collegiate School Virginia Beach,VA

PRIZE DRAWING WINNERS

Girls Scouts at KSC booth, Science and Technology fair, Pasadena, CA 2009

How involved did students stay with KSC related activities after participating?

When asked which of 8 different KSC-related activities, if any, students had done since participating in KSC, nine-tenths (90%) of the parents/guardians and mentors reported that their students had done at least one of the activities, while more than half (57%) did 1-3 activities.

How did KSC impact students' science-related actions after participating?

When asked about the extent to which students participated in the same 9 activities after participating in KSC that they were asked about participating in prior to KSC, increases were found for all activities, but most notably in three areas, as follows: (i) Where 34% of parents/ guardians and mentors reported students regularly talked with peers or family about science subjects prior to KSC, 51% now reported them doing this; (ii) Where 21% reported students regularly investigated/looked for answers to science or engineering problems encountered in every day life prior to KSC, 44% now reported them doing this; (iii) Where 26% reported students read science books or magazines outside school prior to KSC, 39% now reported them doing this.



FUTURE OF THE KIDS' SCIENCE CHALLENGE

TERRAFORM MARS

"Everyone thinks that all we have to do is pump oxygen on Mars to populate the planet. Wrong, if we simply pump it onto the planet, it will eventually run out. So we will have to produce the gas by the way it reproduces on our planet... trees. The planet mars is too cold to sustain plant life, SO if we could create an ozone to heat the planet with the green house effect, we could plant trees and other plants. The "Planter Pod" will completely terraform the planet Mars into a planet just like earth. As shown in my drawing."

Tyler Grommesh, sixth grade



The KSC is proud to introduce young students to science in creative and fun ways, but we know that guaranteeing a student's lifelong interest in science will take more than participating in our competition. Currently, the KSC has online tools for taking next steps with a student's KSC project by turning it into a science fair project. But more must be done. Our intent is to expand KSC resources to include a Careers In Science Initiative. In brief, the initiative will further help kids prepare for careers in science and engineering by leading them to books they should read, courses they can take, museums to visit, websites, games and ideas for afterschool activities they could participate in. We are in the process of creating a pipeline together with other competitions, so that as they "graduate" from the KSC age range, they can continue to engage with other contests and websites. With the help of a "career aptitude test", we'll open students to career options, planting seeds that enable them to imagine a life for themselves as a scientist or engineer.

Additionally, the KSC is planning to launch regional KSC competitions that will not only connect students with scientists in their community but will specifically target underserved populations, bringing hands-on, age-appropriate science to kids that are not getting the exposure they deserve.

KCS OUTREACH PROGRAM IN LOS ANGELES

JAMES EMLEY

"My experience presenting the KSC workshops at the Pacoima School site was nothing but positive and engaging. Everyday the science program was conducted in the classroom, it was filled with young minds who were thirsty for the newest science activity we would put in their hands. I feel that the program had a significant impact on their interest in science, and it is something that they would participate in the future." The KSC received funding from the American Honda Foundation to implement our competition and curriculum at after-school workshops in LA run by Woodcraft Rangers. One of the largest and longest-running after-school programs in Los Angeles County, Woodcraft Rangers currently works with over 18,000 at-risk young people annually. During this pilot program, an on-site KSC club met twice weekly, learning about each of the three KSC topics on our website, then doing the hands-on activities, and by the end of the program, submitting thoughtful entries into the national KSC competition.

The KSC's objective is to provide underserved populations with the same opportunities given to students at well-equipped schools. The KSC wants to provide these students with a chance to "get their hands dirty" doing science and to have fun learning, with adult support. It was discovered that many of these students know little about the world outside of their community. Providing them an opportunity to compete in a national competition proved to be an amazing confidence booster, demonstrating to the kids that their skills are worthy of something bigger than their classroom.

The KSC is developing other partnerships with well-established afterschool programs to bring its curricula into other underserved communities around the country.



LOS ANGELES UNIFIED SCHOOL DISTRICT ELEMENTARY SCHOOLS

Students at 5 different locations throughout the Los Angeles area have fun doing KSC activities.







WHAT IS BEING SAID ABOUT THE KIDS' SCIENCE CHALLENGE?

TOM PRICE

Engineer and KSC Board Member Tom Price and Friends at the KSC Maker Faire table, Queens, NY 2010

BLAIR BENJAMIN

"When I first learned about the contest. I thought it would be an excellent way to help enrich Merrie's science learning outside the classroom and give her a sense (through the videos on the website, and other links) of the kind of work that real scientists do. My wife and I don't have much of a science background. so we've never quite known how to bring science alive at home. The Kids' Science Challenge was just the thing. Merrie had never shown a particularly strong interest in science, but the Kids' Science **Challenge really grabbed her** imagination."

Blair Benjamin

Parent of Merrie Bejamin, Sensational Sounds Grand-Prize Winner



"The KSC is helping to develop the science and technical minds we will need in our future. This was so evident in the faces of the youngsters that came to The Kids' Science Challenge booth at Maker Faire held in New York City last year. They were clearly hungry for the real "magic" of science exploration, and they soaked up our activities and experiments like sponges."

Tom Price, Former Director of the American Association of Engineering Societies, KSC Board Member

"It was an amazing experience - humbling and fun - working with such a talented young "scientist" reminded me that there is promise for a better future of this planet if we just harness this talent. The KSC program is doing just that."

Dr. Adina Paytan, Research Professor at the Institute of Marine Science, UCSC

"The KSC is a masterpiece. It gets right to the core of engaging children in both pure and applied science; while providing them a delightful, soul satisfying experience. I have been fortunate to be a judge for the KSC. The depth and emotional energy with which the entrants describe their work, tells me their minds and hearts have been captured for a moment when working on their KSC projects. It is indeed rare to see children captivated so intently in a scientific exercise. Jim Metzner and his team have crafted the archetypical children's science competition. I give it my highest endorsement."

Steven L. Jacobs, Chief Scientist, Faraday Studios, Science Consultant, Myth Busters

"The Kids' Science Challenge offers an innovative model that lets children pose research questions and suggest experiments to be conducted by real scientists and engineers...Integrating traditional and new media -- including science radio broadcasts, podcasts, and blogs -- to engage kids in science challenges that will help guide other educational efforts in the future."

Sandra Welch, Program Director, Informal Science Education, National Science Foundation

"Having spent a year working with you and your team as one of your Kids' Science Challenge skateboard engineers, I'm writing in support of what you've been able to accomplish and where you're going.

There is a real need to show kids that science engineering affects every aspect of their lives, from skateboards to snacks. The KSC is doing just that, proving that science is for all kids. When Lindsay and I participated with your team at the Cambridge Science Fair and the Museum of Science in Boston, we all witnessed the small miracle of seeing this shy girl coming out of her shell. By the end of the day, she was holding forth at the KSC skateboard design table, talking to hundreds of kids and parents about the density of woods and the physics of skateboards. Her parents were astonished!

"Professor" Paul Schmitt, founder CreateAskate

LINDSAY CARNES, GRAND-PRIZE WINNER, SKATEBOARD ENGINEERING, 2008

Lindsay wondered what would happen if you used a ball instead of wheel for the front of a skateboard? She went to California and worked with professional skateboard engineers Paul Schmitt and Michael Bream to build a working prototype of her idea and learn how to ride it from members of the X-Team! Lindsay was featured on **NBC's Today Show. Note** the ball from a Dyson vacuum cleaner. Inventor James Dyson appeared with Lindsay on NBC's **Today Show and gave her** invention a big thumbs up!



FINANCIAL SUMMARY

Income	Amount
National Science Foundation 10/26/2007 – 10/28/2011	\$2,156,950
Individual Donations 01/01/2011 – 10/28/2011	\$142,500
American Honda Foundation 12/11/09 – 12/31/2010	\$60,000
Other Income	\$9,436
Total Income 10/26/2007 through 10/28/2011	\$2,368,886

Expenses	Amount
KSC & Related Projects	\$1,849,170
Production and Management	\$316,024
Fundraising & Research	\$83,692
Total Expenses 10/26/2007 through 10/28/2011	\$2,248,886

Assets	Amount
Total Assets	\$146,199
Liabilities and Equity	Amount
Total Liabilities	\$5,767
Total Equity	¢170750

Total Liabilities and Equity	\$146,199
Total Equity	\$140,432

PRIZES

KSC FINALISTS

Each KSC Finalist receives a certificate



CAPE HENRY SCHOOL

activity kits.

Students at Cape Henry School, Virginia Beach, VA, receive their The Kids' Science Challenge gives prizes to as many students as possible. While prizes help get the kids involved, the true intention of the prizes is to continue to expand the student's interest in science and encourage further exploration.

Each year, the first 1,000 entrants are mailed a free hands-on science activity kit. In each kit the students find a variety of items, some of which are typically not found at home, along with a manual. By following the manual and using a few household items, thousands of kids have been given the chance to continue their science explorations with hands-on activities.

One grand-prize winner is selected for each topic. This student is given a once-of-a-lifetime opportunity to work with a specific scientist to see his/her idea come alive. This experience propels the winner - and all kids via our website videos - to imagine a future career in science. The KSC showcases a variety of charismatic people who have chosen science as a career. They exemplify that science is everywhere in our lives and it can be fun. KSC's role model scientists include men and women of diverse racial and cultural backgrounds.



Each year of the KSC, the first 1000 entrants receive a free hands-on science activity kit.



There are also 5 finalists for each topic. These finalists are awarded a variety of science tools and toys, all geared to encourage them to continue their scientific explorations.

The KSC also recognizes the efforts put forth by educators and community facilitators and awards a plaque to the teachers of the grand-prize winners and their school. In the 4th year of the KSC, we are awarding educators who engage the most contest applicants with a raised-bed garden for their school or community center. Again, it's a prize that keeps on giving as students will learn more in a hands-on manner for many years to come.



REPLACEABLE SHOE BOTTOMS

"Our idea is to have a shoe that the bottoms are clip on's that you can take on and off. You'd mainly use it for sports."

Christian Kowalczyk and Liam Pietraszewski, 6th Grade

LESSON PLANS

FOR TEACHERS AND PARENTS Lesson Plans are available online for Grades K–12 in a text editable format for all KSC topics. Here's a sampling from 2011-2012.



ZERO WASTE

Introduction National Standards Lesson 1 – Grades: 3 – 6

Packaging 101

Students think outside of the box while they're introduced to the topic of sustainable packaging. They learn the benefits of packaging and the three rules of sustainable living – reduce, reuse and recycle. Lesson 2 – Grades: 3 – 6Lunch Weigh In Students will find out that lunch is not all sandwiches, apples and chocolate chip

cookies. Packaging makes up a large portion of students' lunches. Your students will discover exactly how much. Lesson 3 – Grades: 3 – 6

Trash Pie

Students will monitor classroom garbage to find out what makes up most of the waste in the class. They'll measure the data and create a classroom pie chart to share the trashy results. Lesson 4 – Grades: 3 – 6 Garbage Gone Wild Students learn about the harm that litter can do to the environment. Then they will thick of wave that they can below in the

think of ways that they can help win the battle against loose litter as they fight to save the planet from garbage gone wild.

ANIMAL SMARTS

Introduction National Standards Lesson 1 – Grades: 3 – 6 World Without Words Students learn about the challenges of communicating without using words and practice non-verbal communication skills while explaining to their partner how to put together a unique structure. Lesson 2 – Grades: 3 – 6

Watch It!

In this lesson, students watch animal life up close, by either observing classroom

pets or by watching animals in a natural environment outside. Students in rural, suburban or urban settings can find animals in their natural environments to observe. Students will find out what we can learn from watching closely. Lesson 3 – Grades: 3 - 6

Research and Role Play

Students select an animal to learn more about. After doing research on the Internet, in the school library, or through visits to local zoos or wildlife centers, students will prepare a presentation showcasing an aspect of animal cognition.

MEALS ON MARS

Introduction National Standards Lesson 1– Grades: 3 – 6 Appeal of the Meal

In this lesson, students interview each other about what makes certain food appealing to some people and not to others. Students use communication skills during interviews and math skills when they graph the data as bar graphs.

Lesson 2 – Grades: 3 – 6

Taste This!

This lesson focuses on a simple experiment in which volunteers have to hypothesize about the flavor of juice, which has been colored purple and red. They learn that many senses influence how food actually tastes.

Lesson 3 – Grades: 3 – 6

Menus for Mars

In this lesson, students play the role of an astronaut and are allowed to sample food in preparation for their upcoming missions. They follow this up by planning their own menus for space.

Lesson 4 – Grades: 3 – 6

Space Shake

In this lesson, adapted from NASA, students compare different ingredients for making the perfect space shake– one that is both nutritious and delicious.

ADVISORY BOARD MEMBERS

























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PARTNERS

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Jill Tarter Research Director the SETI Institute

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Laura Tufariello President and Owner, Design and Source Productions

David Shepherdson Deputy Conservation Manager and Conservation Scientist, Oregon Zoo

Nichole Nicassio-Hiskey Senior Keeper of Marine Life, Oregon Zoo

Amy Hash Animal Keeper, Oregon Zoo

Brian Hare Department of Evolutionary Anthropology, Duke University

Vickie L. Kloeris Advanced Food Technology Project Scientist, NASA Food Systems Laboratoty

Michele H. Perchonok Advnaced Food Technical Manager NASA Food Systems Laboratory

Jay Neal Conrad N. Hilton College University of Houston

CHLOE SALDEC

"My idea is to create a heater that is powered by microbes called Methanogens."

Chloe Saldec is a 5th Grader from NY.



KAYLA LOMBARD

"Look at the way the bullfrogs skin expands and use that for purses."

Kayla Lombard





D INSPIRED DES ORTS ON MARS IVE SCIENCE SU UFF FOR SPORT ATIONAL SOUN ICAL MICROBE



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