

INVENTERPRISE 2009

ILLUSTRATION by J. LaChapelle

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IDEAS... THE FINAL FRONTIER. THESE ARE THE VOYAGES OF THE STARSHIP INVENTERPRISE. OUR CONTINUING MISSION: TO EXPLORE STRANGE NEW PLACES, TO SEEK OUT NEW IMPROVEMENTS AND NEW USES, TO BOLDLY GO WHERE NO ONE HAS GONE BEFORE!

FREE AIR FRESHENER WITH SHIP WASH

AFTER WEEKS OF EXPLORING THE DESERT PLANET BARONWASTUS THIS SHIP IS FILTHY! PLOT A COURSE FOR THAT SHIP WASH FACILITY, SCOTTY.

ACTIVATE TURN SIGNAL... NOW!

AY AY CAP'N. BUT I THINK THE BLINKER'S BEEN ON SINCE THE LAST BATHROOM STOP...

THAT WOULD EXPLAIN WHY THE KLINGONS KEPT HONKING ALL THE WAY HERE

OH NO!! WHAT'S A WORMHOLE DOING WHERE THE SHIPWASH SHOULD BE?! AAAA AAAAA

POP!

SEVERAL WINDOWS WERE LEFT DOWN, BUT STABILIZERS ARE OPERATIONAL, CAPTAIN. ALL SYSTEMS... URP! WHAAA?!

WHAT IS THE MEANING OF THIS??

HELLO OLD SPOCK. I AM YOU, 50 YEARS YOUNGER.

DO YOU STILL TWEET?

HEY OLD KIRK! I'M YOUNG KIRK, AND WE PUT THAT SIGN THERE TO BRING YOU FOGIES BACK IN TIME THROUGH THAT WORMHOLE.

WE WANTED TO PICK YOUR BRAINS ABOUT A COUPLE THINGS...

NUMBER ONE: HOW MANY SEQUELS MUST WE ENDURE OVER THE YEARS?

OF GREATEST IMPORTANCE IS THIS: WHEN VAST AREAS OF EARTH BECOME MORE ARID DUE TO CLIMATE CHANGE, THE STUDENTS OF CENTRAL OREGON WILL DEVISE INNOVATIONS THAT ALLOW THE WORLD'S PEOPLE TO BETTER LIVE IN OR NEAR THE DESERT.

WHAT WILL THOSE INNOVATIONS BE? WE JUST HAVE TO KNOW!

NO CLUE...

ALSO, COULD YOU GIVE ME THE LOTTO NUMBERS FOR THE NEXT 50 YEARS?

YOUNG SPOCK - YOU SHOULD BE ASHAMED OF YOURSELF. WORMHOLES ARE, AT BEST, HYPOTHETICAL TOPOLOGICAL FEATURES OF SPACE-TIME.

MOSTLY THEY'RE A CRUTCH FOR LAZY SCI-FI WRITERS.

BUT... YOUNG KIRK DARED ME.

OLD - SPOCK - IS - RIGHT. PLUS, EVEN - IF - TIME - TRAVEL IS - POSSIBLE, - IT'S - SUCH - A - DARN - HASSLE. - LET'S - JUST - ASK - THE - STUDENTS.

WOW! STEPHEN HAWKING!

WHATUP STEPHEN. A LOGICAL SUGGESTION.

YES - Y'KNOW - I - GET - MOST - OF - MY - GOOD - IDEAS - FROM - THE - STUDENTS - OF - CENTRAL - OREGON.

WANNA GO DOWN TO THE SALT FLATS AND RACE, STEPHEN?

I - WILL - CRUSH - YOU, - PUNK.

STUDENTS - OF - CENTRAL - OREGON - SHOW - US - YOUR - INNOVATIONS - TO - HELP - MANKIND - THRIVE - ON - A - DRIER - PLANET.

GET - HYDRATED - AND - START - BRAINSTORMING!

I WON'T LET THEM HURT YOU, SPIKE.

READ ON! →

Welcome to Invention Enterprise 2009

Here's the challenge:

Imagine that climate change has caused the world's deserts to greatly expand. You will be awarded the 2050 United Nations Science Prize for the innovative idea you devised in 2009 to help people better live in or near deserts. What did you invent?

The following pages contain ideas to help you get started.

Official Rules

- (1) Any Central Oregon student in Grades K-12 may enter. In Grades K-8, students may enter in groups of up to three students. Only individual entries are allowed in the high-school competition.
- (2) Use any format you like for your contest entry. Examples are pictures, models, tapes, descriptions, computer programs, dramas, or whatever medium best conveys your ideas.
- (3) Entry deliveries will be accepted Wednesday, November 11, through Friday, November 13. **Entries must be received by 5 p.m. Friday, November 13, 2009.** Please bring or mail your entries to Bend Research Inc., 64550 Research Road, Bend, OR 97701.
- (4) Include your first and last name, teacher's name, grade, and school name on the entry form provided. Cut it out and attach it to your entry. **Make sure your name is on each piece of your entry.** You'll get your entry back if you check the box on the entry form.
- (5) Parents and teachers may be consulted, but don't let grown-ups talk you out of your great ideas.
- (6) A panel will judge entries for creativity, originality, coolness, and how well ideas are developed. **Entries must not defy the laws of nature.**
- (7) Fabulous prizes (specially designed T-shirts) will be awarded to the top entrants. K-8 winners will also be invited to a special Science Night presentation in their honor. Less-fabulous prizes will be awarded for good efforts.
- (8) **A cash prize of \$1,000** will be awarded to the best high-school entry; second place will receive \$500. The student submitting the best middle-school entry will choose between a **digital camera, iPod[®], mountain bike, and season pass to Mount Bachelor.**
- (9) **Teachers in Grades K through 5** will share \$1800 in gift certificates for classroom supplies if more than half the students in their class participate. Visit our website for details.
- (10) Winners will be announced by December 1, 2009.

Have fun!

For more information, go to our website at <http://www.cocc.edu/inventionenterprise> or call Nate at 706-8211 or Annie at 706-8348.

Invention Enterprise is sponsored by Bend Research Inc. with help from the Bend-La Pine School District and Central Oregon Community College.

Topics To Consider

- Agriculture** Low moisture and lots of sunshine. What's your breakthrough idea?
- Geography** Topography and weather make deserts. Generate new ways to modify these influences.
- Energy** Solar and wind are obvious ways to generate energy here. Can you think of any new or improved energy sources from deserts?
- Polar Deserts** Surprisingly, the polar regions receive little precipitation and these icy regions are considered to be deserts. Opportunities abound.
- Technology** What far-out new gizmos are waiting to be invented that are based on desert resources or animals?
- City Planning** Your fantastic new idea may address new ways of living in desert cities.
- Resources** A desert is more than skin deep. What's under the surface may inspire you.
- Water** Water is scarce in the desert. What are your ideas to help desert dwellers collect/purify/store safe water?
- Aquifers** Aquifers are underground rivers and lakes. Your innovation takes advantage of these without causing problems elsewhere.
- Ecosystems** Deserts support diverse fragile ecosystems. Your idea may enhance and protect these ecosystems.
- Transportation** Find ideas for improving transportation of cargo and people in the desert.
- Health** Consider dehydration, exposure to sun, and other desert health issues.

Use these topics or create your own to get started in inventing your own means of dealing with increased desertification.

Inventerprise 2009 Entry Form

Please Print

Grade _____ School _____ Teacher _____

Entry Title _____

First Name	Last Name	Youth*			Adult*		
		Small	Medium	Large	Small	Medium	Large

*List your shirt size in case you win

Check this box if you want your entry returned

Make sure your name is on each piece of your entry. **Number of entry parts** _____

(Please print or cut out this form and firmly attach it to your contest entry.)

Desert Facts

No one can say for sure how the Earth's climate may change in the next few decades. One of the possibilities is that the world's deserts will expand. Here are some facts about deserts.

- Deserts take up about one-third (33 percent) of the Earth's land surface. There are deserts large and small on every continent.
- A desert is a region that receives less than 500 millimeters (mm) (20 inches) of precipitation per year. Some may lose more water by evaporation than falls as precipitation. Others define deserts even more stringently...receiving less than 250 mm (10 inches) precipitation annually.
- Many deserts, like the High Desert in Central Oregon, are formed by rain shadows as mountains block clouds from more humid regions.
- The Sahara Desert in Northern Africa is the world's largest desert outside the polar regions. At 3.5 million square miles, it is nearly as large as the United States or Europe. It is growing southward by as much as 30 miles per year. The average annual rainfall is 100 mm, with half of the Sahara Desert receiving only 25 mm. The periods between rains can be longer than a year. Dunes can reach as high as 200 meters (m).
- The annual precipitation in the Arctic is low. Because cold slows evaporation, in the polar deserts humidity is high and soils are moist during the short growth period. In the Arctic context, "desert" refers to extreme poverty of life. The Arctic is also characterized by the presence of continuous permafrost. The depth of the active (seasonally frozen) layer of the soil during the growing season depends on summer temperatures and varies from about 80 centimeters (cm) near the tree line to about 40 cm in polar deserts.
- Antarctica is all desert...cold and frozen, but a vast desert nonetheless.
- Desertification is the process by which arid and semi-arid lands are converted into deserts. Global climate change may affect wind and rainfall patterns in ways that promote desertification.
- Thick outer skin minimizes water loss from many desert insects and reptiles and their eggs
- Desert reptiles maintain a uniform body temperature by timing their daily activities to the movement of the sun.
- Desert animals tend to be active in the cooler night, avoiding the hottest hours by staying in burrows and caves. Their urine is usually concentrated and their feces are dry.
- Some desert toads survive by digging burrows as deep as 3 feet, where they live for 9 to 10 months at a time.
- Plants need water just as much as animals do! It's an important aspect of how they extract energy from sunlight. Many adaptations make it possible for plants to thrive in deserts.
- Some desert plants, like the creosote bush, minimize water loss by having waxy leaves. Others, like Coachman's whip, have small leaves to limit water loss.
- Cacti have no leaves. Their spongy flesh is used to store water. They have special cells that control evaporation rates and their photosynthesis process is very efficient.
- To obtain water, some desert plants grow deep roots. During dry spells, mesquite and creosote plants drop all leaves and go dormant.
- Plants harvested by humans from deserts include oranges, figs, olives, thyme, and magaria.

References:

- <http://pubs.usgs.gov/gip/deserts/what>
- http://www.outback-australia-travel-secrets.com/australian_deserts.html#australian_deserts_size
- <http://www.coolantarctica.com/Antarctica%20fact%20file/antarctica%20environment/whats%20it%20like%20in%20Antarctica.htm>
- <http://en.wikipedia.org/wiki/Sahara>
- G. Tyler Miller, Jr., *Living in the Environment*, 11th Edition, Thomas R. Van Devender, Ed., 2006-2009
- Arizona-Sonora Desert Museum, Tucson, AZ
- <http://www.botany.uwc.ac.za/Envfacts/facts/desertification.htm>
- http://www.eoearth.org/article/Arctic_tundra_and_polar_desert_ecosystems#Climate,
- <http://www.ucmp.berkeley.edu/exhibits/biomes/deserts.php>
- Campbell, N.A., J.B. Reece, and L.G. Mitchell, *Biology*, 5th edition. Benjamin-Cummings Publishing Co. (1999).
- <http://ezinearticles.com/?Sahara-Desert-Plants---Crops&id=1845605>