

INVENTERPRISE 2008

ILLUSTRATION by J. LACHAPPELLE

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!

ABOARD THE USS. INVENTERPRISE BUDGET CUTS ARE AFFECTING THE UPKEEP OF CERTAIN KEY SYSTEMS...

EGAD! THE PUN AVOIDANCE MECHANISM IS ON THE FAIRLY AGAIN, CAPTAIN!

WE'LL HAVE TO BEAM DOWN TO THE NEAREST PLANET AND GET SPARE PARTS.

MOMENTS LATER THE CREW BEAMS DOWN TO A LESS-THAN-DRY LOCATION...

FOUR MORE STUDENTS? MY SCHOOL IS ALREADY FULL!

THAT'S (GURGLE) EXACTLY THE KIND OF AWFUL FISH PUN I WAS WORRIED ABOUT.

ON THE OTHER HAND I'VE BEEN THINKING OF GOING BACK TO SCHOOL. I WONDER IF I SHOULD TAKE DEBATE?

WE'RE IMMERSSED IN A COLD LIQUID FLOWING DOWNHILL. WHAT IS IT?!

READINGS SHOW SUBOPTIMAL SURFACE TENSION FOR OUR LANDING, AND LOWER-THAN-DESIRED BUBBLE BATH CONTENT, SIR.

MY SENSORS INDICATE IT'S WET.

CHILL, BI-PEDS. YOU'RE IN A RIVER!

WELL, THERE GOES THE WARRANTY ON MY COMMUNICATOR.

A RIVER - OF COURSE! CIVILIZATIONS DEPEND ON RIVERS FOR FOOD, DRINKING WATER, IRRIGATION, TRANSPORTATION, RECREATION AND AS ARBITRARY BORDERS TO SQUABBLE OVER.

THE DOMINANT SPECIES HERE HAS NOT APPRECIATED THEIR RIVERS' IMPORTANCE, AS YOU CAN CLEARLY SEE.

WELL, LET'S GET OUT OF HERE - THIS ONE IS YUCKY.

YIKES! THAT WAS HORRIBLE!

I KNOW, I KNOW! A FELLA CAN'T DEVELOP LEGS FAST ENOUGH!

I UNDERSTAND THAT THERE ARE STILL SOME RIVERS THAT ARE CLEAR, CLEAN AND TOTALLY FISHABLE. OF COURSE, CATCH AND RELEASE STILL IRKS US.

WELL, WHY AREN'T ALL RIVERS CLEAN? WHAT CAN BE DONE?!

EFFORTS ARE UNDERWAY. WE'RE ASKING THE STUDENTS OF CENTRAL OREGON FOR THEIR INVENTIONS AND IDEAS TO BETTER COEXIST WITH RIVERS.

IF THEY COME UP WITH GOOD ENOUGH IDEAS THEN MAYBE MY KIDS WILL HAVE A BETTER CHANCE - AN EASIER ROW FOR THE ROE TO HOE.

EXCELLENT! THE STUDENTS OF CENTRAL OREGON ARE A CREATIVE LOT. WHAT WILL THEY COME UP WITH?

WHO CAN TELL? AS LONG AS IT DOESN'T HINGE ON A TERRIBLE PUN WE'LL ALL BE HAPPY.

UH OH. THE COMIC IS ALMOST OVER AND WE DON'T HAVE OUR SPARE PARTS FOR THE SHIP.

CAPTAIN, WE NEED YOU ON THE BRIDGE. WE'RE GETTING SOME FISHY READINGS ON THE UNRESOLVED PLOT-STRING INDICATOR.

OOF.

READ ON! →

Welcome to Invention Enterprise 2008

Here's the challenge:

Rivers are important to civilization, but historically we have not looked after them very well. Invent or design something that will allow people to better use, preserve, and coexist with this vital natural resource.

The next 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 12, through Friday, November 14. **Entries must be received by 5 p.m. Friday, November 14, 2008.** 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, an iPod[®], a mountain bike, or a season pass to Mt. Bachelor.**
- 9) **Teachers in grades K- 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, 2008. **Have fun!**

For more information, go to our website at <http://www.cocc.edu/inventionenterprise> or call Heidi at 382-0212, ext. 242, or Chris at 382-0212, ext. 113.

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

- Food** We use rivers for irrigation, freshwater fisheries, and fish farms. Each has its own problems that need your innovation to solve.
- Drink** Many use rivers for fresh drinking water. What inventions would help?
- Energy** Dams displace people and ecosystems and disrupt fish migrations. Design a river energy generator that overcomes these problems.
- Waste** What are your ideas for minimizing river pollution and soil erosion? Design a better waste treatment or recycling system for rivers.
- Technology** What far-out new gizmos are waiting to be invented that are based on rivers? Consider transportation, recreation, pollution abatement, etc.
- City Planning** Design an entire city that embraces its river. Start from scratch or redesign a Central Oregon city on a river. What are your original ideas for a small river community?
- River Deltas** River deltas are diverse ecosystems. Share ideas for enhancing deltas.
- Recycle** How can we recover and recycle the amazing amount of junk that often ends up floating downstream to the sea?
- Aquifers** Aquifers are underground rivers and lakes. How would you prevent their contamination and ensure their replenishment?
- Transportation** Got any ideas for improving transportation of cargo and people without negatively affecting the river?

**We hope these topics give you ideas to get you started in inventing your own means of improving the world's rivers.
If you wish, you can create your own river topic!**

Inventerprise 2008 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.)

River Facts

- Human civilizations have risen and fallen on the banks of the world's rivers.
- The oldest known civilizations on Earth arose on the banks of major rivers including the Nile in Africa, the Yangtze and Yellow Rivers in Eastern Asia, and the Tigris and Euphrates Rivers in the Middle East.
- Soils from uplands wash down and are deposited in the river valleys; these fertile valleys seeded the development of agriculture.
- Rivers provide fresh water for human consumption, hygiene, and irrigation. They provide a means of transportation, have helped define paths of conquest and migration, and have been a major determinant in where populations have chosen to live.
- A river or stream is an important feature of most of the world's cities and towns.
- Other major rivers of the world include the Volga (3700 km) in Europe, the Amazon (6300 km) in South America, the Murray-Darling (3720 km) in Australia, and the Mississippi (3770 km) in North America.
- Here in the US, there are 3.5 million miles of rivers. More details follow:
 - More than 235,000 river miles in the United States have been channelized
 - More than 600,000 river miles are impounded behind dams (17% of total US river miles)
 - More than 25,000 river miles have been dredged for navigation
 - More than 50% of US wetlands have been lost or destroyed since 1900
 - Nearly 40% of the rivers and streams in the U.S. are too polluted for fishing or swimming
 - Of the native freshwater fish species in North America, 30% are threatened, endangered, or of special concern
 - On average, we have built one dam a day every day since the signing of the Declaration of Independence.
- Rivers lead to the ocean, so trash in rivers ends up in the ocean! In 1997, a sailor found an area of the Pacific Ocean twice the size of Texas inundated with pieces of plastic. This area is called the North Pacific Subtropical Gyre. More plastic collects there every year, from rubber ducks to soda can rings to tiny little pieces of plastic that make animals sick. The plastic will not biodegrade in our lifetimes and since not all plastics are recyclable these aren't going away easily.
- Rivers are a key component of fish migration and spawning (egg laying). Some travel from saltwater to freshwater, including salmon and smelt, and some travel from freshwater to saltwater, including the American eel.
- Fish are vital to the diets of millions of people worldwide. Fish are also critical to river health through their consumption of other river plants and animals and in providing nutrients for other plants and animals.
- Oregon has 111,619 stream miles and is bordered by the fourth-largest U.S. river (based on volume), the Columbia, with an average flow of 265,000 ft³/sec.
- About 80% of the river water withdrawals in Oregon are for irrigation.
- Dams provide recreation, irrigation, energy, and flood control. However, they also cause loss of wetlands and river valley habitats, sedimentation, and they disrupt fish migration.

Sources: [World Book Encyclopedia, Vol. F](#), www.enchantedlearning.com, www.opb.org/programs/oregonstory/water/resources/page_2.html, www.americanrivers.org, http://www.bestlifeonline.com/cms/publish/health-fitness/Our_oceans_are_turning_into_plastic_are_we_2.shtml, www.en.wikipedia.com, <http://drake.marin.k12.ca.us/stuwork/rockwater/Upload%20this%20doc--dams%20and%20hydropower%20report/pros%20and%20cons.html>