

# OREGON COAST TECHNOLOGY SCHOOL

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*“Successful completion of the class will prepare the students for the Certified Internet Webmaster (CIW) Foundations Exam as well as providing them with skills for on-the-job success.”*

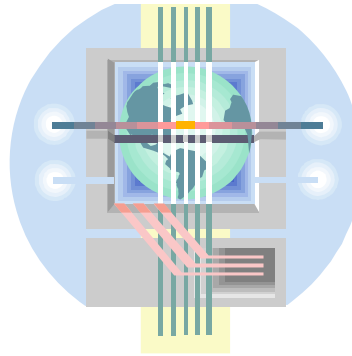
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## HIGH SCHOOL ORCO TECH

### Three North Bend High School

students are currently enrolled in a SOCC distance learning class taught by Diana Schab. Alex Langenstein, Mikael Stadden, and Ally Romanko are enrolled in CS178i, “Internet Technologies”, through the partnership established between ORCO Tech and SOCC within the CCTI grant. The students will use their Tech period to work on the class, which is being taught online. A combination of online discussions, project assignments, step-by-step



tutorials, and required readings will be used to meet the objectives of the course. For example, the first project assigned asked the student to design a two-hour informational seminar for senior citizens who wanted to learn about the World Wide Web. Success-

ful completion of the class will prepare the students for the Certified Internet Webmaster (CIW) Foundations Exam as well as providing them with skills for on-the-job success. When asked about the course, Mikael commented, “It is a challenging course, but in the long run it will be worth my extra time because it gives me a head start on my career in Web Design.” The next class for these students will be CS125H, “HTML”, which will be taught during the winter quarter.

## ORCO TECH TO PRESENT AT NORTHWEST COUNCIL FOR COMPUTER EDUCATION

**Congratulations** go to this both this year's and last year's ORCO Tech Teams. They have been chosen to present at the Northwest Council For Computer Education, taking place this February, in Portland. Team members will present their program to educators, administrators, technology specialists, and technology coordinators from the Northwestern states.

In addition, Mrs. Moyer, Mrs. Hutcherson, and Mrs. Becker have also been selected to do a presentation entitled: “Demonstrating Digital Age Literacy Across the Curriculum: Energize Learning Through Student-Led Conferences Using e-Portfolios. This recognition demonstrates the innovative ideas that have developed as a result of the creation of the Oregon Coast Technology School.



**ORCO Tech Team: 2005-2006**

# Principles of Flight, Transportation and Technology

*“This is a great activity that incorporates science and math principles...”*

## We have had a great

**start** to the 2005-2006 school year with many challenging and fun activities and projects. Currently in the 8<sup>th</sup> grade ORCO core and Technology Education classes (Principles of Flight, Transportation Technology, Lego Robotics, and Manufacturing Technology), we are working on many exciting projects. Students in the flight class are learning about the forces of flight. Then students apply their knowledge to design and build various gliders that

will stay aloft for as long as possible.



Chris Banks: known as the classroom expert on Lego Robotics

They are having a great time, especially with the beautiful weather we have had, test flying their paper, wood, and Styrofoam airplanes. Some of our top planes in the “Whitewings” category flew for almost a minute, including planes built by Zach Reichenberger, Jeremy Dubisar, and Matt Johnson. This was a vast improvement over the five to ten seconds the paper and Styrofoam airplanes stayed in the air. Students will also create rubber band-powered airplanes as well as H<sub>2</sub>O bottle rockets, and are looking forward to flying a remote controlled aircraft as well.

## The Manufacturing Technology

**class** has been using computer software called Rhino, which is a 3D modeling pro-

gram, to design a cardboard downhill racing sled. The students then gathered up large cardboard boxes to build their racers. The object of the project is to do the design work on the computer and then build a cardboard replica of their computer design. The racer needs to be constructed so that it will survive a trip down the hill behind NBMS, hopefully without rolling. Race day is always an exciting day and one of the highlights of the class. Students will also be taking broken VCR’s apart and using the pieces to build battle bots. This involves carefully de-soldering motors, lights, circuit boards, and other parts and then creating a machine out of the usable parts. 9-volt batteries power these vehicles, and when they are complete, students have a “battle” to see who has the toughest creation.

# Lego Robotics, and Manufacturing Technology

## The Lego Robotics class

is having a blast using Lego kits to design and construct robots that can perform a given task.

The tasks start out very simple and proceed toward very complex challenges

The students must use their creativity to build a robot out of Lego blocks that will solve a specific problem.

Then they write a program on the computer using software called "Robolab" that is downloaded to the "brain" of their robot.

Next, they test their ideas to see if they will actually work. Some challenges take several weeks to solve, but these future engineers are doing a great job so far. The students that are part of the Lego team will be competing at the state tournament in Roseburg on December 3<sup>rd</sup>. This team will be going up against many other teams from

around Oregon to successfully solve a series of challenges. State winners are eligible to advance to national tournaments if they choose to. This is a great way to teach computer programming, engineering, Science, Math, English, and teamwork concepts. We have a really exceptional group of students this year who are setting very high standards for the other classes that will follow.

## The Transportation Technology

**class** has just completed building the models that they designed of an alternative energy vehicle. The students used Styrofoam, wood, metal, and plastic to create a vehicle that was powered by electricity, solar, hydrogen, bio-diesel, ethanol, or any other alternative

power source. They then gave a Power-Point presentation about their topic using information that they had researched on the Internet and explained how their car worked. Soon they will be hard at work trying to make a car go as far as possible using only a mouse trap as it's sole mean of propulsion. This is a great activity that incorporates science and math principles as students learn about kinetic energy, how the size of the wheels and the length of the throw arm are related, and how weight and friction affect their car. We have had cars with skateboard bearings, computer hard drive parts, and CD's. Other projects will include magnetic levitation vehicles and rain-gutter boats using wind, rubber band, and electric motors for power. We will finish off the trimester with our CO<sub>2</sub> dragsters and funny cars.

*"The tasks start out very simple and proceed toward very complex challenges."*



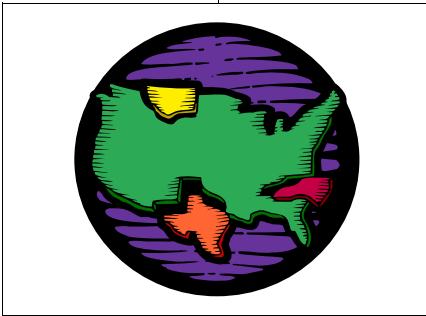
## AMERICAN HISTORY AND EFFECTIVE USE OF REAL WORLD TOOLS

Mr. Steve Greif and Mr. Jake Smith from NBHS recently used Microsoft Excel's graphing feature in a project with their U.S. History

classes. Students used data from various census and government records from 1800 - 1860:

things like birth rate, wages, cost of freight, immigration, population, cotton production, etc. Each student interpreted different data, and produced an Excel graph visually displaying the information. Students saved their graphs to a teacher folder on line and then projected the graph, later in the week, to a screen

back in the classroom. As they showed their graphs to the class, students explained in a brief oral report what the X and Y axis information meant and why the graph trend may have occurred. These graphs covered an extensive amount of American life during the early 1800's, in a very brief period of time.



Visit Mrs. Wick's classroom website at:

[www.orco-tech.nbend.k12.or.us](http://www.orco-tech.nbend.k12.or.us)

## STUDENT AUTOBIOGRAPHIES: A DIGITAL APPROACH

**Sixth grade ORCO TECH reading students** started this year's reading selections in the literature textbook, beginning with the theme: "Where I belong". These selections are autobiographical in genre. As a culminating project, students are writing their own autobiography. Students make use of the software program, Power Point, to write their book, each entry beginning with a letter of the alphabet, resulting in a completed ABC Book. After printing the books, each student will use Power Point to do a classroom presentation of their ABC book. Students will also be able to save their presentations to a disc to demonstrate to parents.

The grading of the ABC book will be influenced by the skills demonstrated in the creation of the book, as well as by the variety of locations students used to obtain pictures for each page. Students were free to use clipart, download pictures from the Internet, utilize digital pictures taken at school or home, or scan existing pictures from home. After November 1st, the finished products will be available for viewing in Ms. Wicks' room as well as on her website:

[www.orco-tech.nbend.k12.or.us](http://www.orco-tech.nbend.k12.or.us)



6th graders writing their autobiographies

## OREGON'S LANDSCAPE AS A SETTING: A MULTIDISCIPLINARY WRITING PROJECT

**In addition to rigorous academics**, and technology integration, ORCO Tech seeks to focus on cross-curriculum project-based learning. This allows students to connect what they are learning in Science, with subject matter taught in their other core classes: English, History, and ORCO Core. Because real-life does not segment our skills into 45-minute periods, blending a project across subjects makes learning more relevant for students, as it is easier for them to link learning from core subject to another. In addition, students have more time than just one class period per day to process and develop their ideas, often providing students to take the project to a deeper level.

One such project currently in motion at

the 8<sup>th</sup> grade level, is Oregon's Landscape as a Setting, a multidisciplinary writing project. Students began learning the geology of Oregon in their Science class, by mapping out the Oregon Trail from beginning to end.

A video followed, which took students visually across the Oregon Trail, providing some background information. In English, each student was given information on one section of the Oregon Trail, including landscape, water, native plants, native animals, and weather. To augment this research, many students went online to find more information on their section of the trail. Next, students began writing a narrative, journaling the travels of Luke and Lucy Ferris, 13-year-old twin siblings, crossing the Oregon trail with their father and mother. The

story represents the twins' entries in a shared diary, so the story of each segment of the journey will be told in the voice of either Lucy or Luke. Students then post a revised draft on WriteSite, a new on-line technology tool that encourages students to edit. Next, students read one another's papers, then respond to the writing, offering peers constructive ways to improve their writing.

This project will culminate with an interactive map of Oregon posted on Mrs. Becker's website, with links to student work.

*“This allows students to connect what they are learning in Science, with subject matter taught in their other core classes...”*



**Yara Ruiz posts her work to WriteSite**

North Bend School District



*“With WriteSite,  
students may  
participate in the  
writing process from  
any Internet  
connection...”*

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## WriteSite: Supporting Student Writing On-line

**NBHS and NBMS recently purchased** a subscription to WriteSite, an on-line writing tool and discussion format that encourages editing, responding, and reflecting on student writing. The site itself says it best:

“While computers have supported student writing for many years, data storage has traditionally been on floppy disks or school servers. In addition, peer-review activities have remained relatively unaffected by technology. With 95% of public schools (and 72% of classrooms) connected to the Internet, strategies for teaching writing are changing.

The web-based WriteSite, a writing management system, provides authors easy access to their writing from anywhere—via the Internet. Student drafts, revisions, and portfolios are conveniently stored on and accessed from a database located on the web server.

From a teacher's perspective, student access to writing terminals is a major concern when faced with the current student-to-computer ratio in most schools (around 10:1 nationally with multimedia features; 5:1 for conventional machines). With WriteSite, students may participate in the writing process from any Internet connection: on a classroom computer, on any machine in a school's computer lab or school library, at the public library, at home or a friend's house, or from a partnered classroom or school, regardless of geographical location. Student authors have marveled at the opportunity for grandparents to read (and respond to) their writing from out of state—thanks to the Internet!”

Taken from:

<http://ws.oetc.org/cgi-bin/orcotech>

## 21ST CENTURY LEARNING

**As 7th and 8th graders begin creating e-Portfolios** and preparing for student led conferences, our hope is that they will be challenged to think about the learning process in a whole new way. The approach taken as 7th graders looks closely at the importance of learning digital literacy skills, and how those skills directly relate to their education, now, and in the future. This year, 8th graders will showcase their work around the theme of 21st century skills, as well as learning to identify and rank good learning behaviors. The new categories for 8th grade e-Portfolios include the following:

**Teaming and Collaboration:** Cooperative interaction between two or more individuals working together to solve problems, accomplish tasks, or learn and master content.

**Personal Responsibility:** Demonstrating current knowledge about ethical issues related to technology, combined with the ability to apply this knowledge in the classroom.

**Interactive Communication:** Communication exchanges using a range of contemporary tools, transmissions, and processes.

**Adaptability and Managing complexity:** The ability to handle multiple goals, tasks, and inputs, while understanding and adhering time constraints, and limited resources.

(examples: multimedia projects, research papers, long-term projects, etc.)

**Creativity:** Bringing something into existence that reflects something new and original. (examples: Poetry, creative writing, digital photography, creative history project, etc.)

**Higher-Order Thinking and Sound Reasoning:** Analysis, comparison, inference and interpretation, evaluation and synthesis applied across the curriculum.

**Prioritizing, Planning, and Managing for results:** The ability to efficiently organize and achieve the goals of a project or problem.

**Effective Use of Real-World Tools:** The ability to use real-world tools including: hardware, software, and networking---to communicate, collaborate, solve problems and accomplish tasks.