

It's a Wild Ride



Goals

- Learn about a multidisciplinary problem-based curriculum project that integrates technology
- Visit classrooms and observe teachers and students in action
- Explore the details online and borrow effective strategies from the teachers

It's a Wild Ride



Agenda

Welcome, introductions,
review the goals

10 minutes

Describe the resource
It's a Wild Ride

5 minutes

Introduce and view the
Wild Ride video

20 minutes

Discuss video and view
Web site samples

10 minutes

Wild Ride Home Page

The screenshot shows a Microsoft Internet Explorer browser window displaying the Intel Education website. The browser's address bar shows the URL "Intel Education - Microsoft Internet Explorer". The website's navigation bar includes links for "intel.com home", "contents", "contact us", and "about us". The Intel logo is prominently displayed in the top right corner.

The main content area features the heading "It's a Wild Ride" in a large, orange font, followed by the subtitle "A Roller Coaster Design Project". Below this, a photograph shows two women, likely teachers, working on a project. The text reads: "Follow three successful teachers as they plan, implement, and assess an effective, technology-rich project."

A vertical sidebar on the left side of the page is titled "It's a wild ride project" and contains a list of links: "Setting the Stage", "Learning that Works", "Working Together", "Using Workspaces", "Assessing Learning", "Supporting Success", and "Order Free Video". Below this list are buttons for "inservice with wild ride" and "Intel in education".

The main content area is divided into six numbered sections, each with a small image and a brief description:

- 1: Setting the Stage**: Teacher backgrounds, classroom demographics, and team philosophy.
- 2: Learning that Works**: Detailed project description, sequence of activities—planning the project.
- 3: Working Together**: Schedule, student organizers, and team tasks—organizing groupwork.
- 4: Using Workspaces**: Technology tools, classroom layouts - using technology effectively.
- 5: Assessing Learning**: Scoring guides, performance assessments, student samples—see the results.
- 6: Supporting Success**: Leadership, flexible schedules, teaming—important ingredients for success.

At the bottom of the page, there is a section titled "Use Wild Ride for Professional Development" with a small image of a woman and the text: "From brief presentations to hands-on workshops, use It's a Wild Ride as a model of technology."

Setting The Stage

It's a Wild Ride - Setting the Stage (Orientation) - Microsoft Internet Explorer

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 Setting the Stage

It's a Wild Ride is an interdisciplinary project that engages students in the design of roller coasters. A team of three Idaho 8th grade teachers developed the project to apply laws of motion in science, linear and non-linear equations in math and technical research and reporting in language arts. The project achieves a balance between student directed exploration of the high interest topic and academic rigor of each discipline. This requires significant planning and coordination by the teaching team.

Introducing the Teaching Team...

"One of the biggest advantages to working on a team is just the support you get from the other team teachers. . . in terms of ideas about how to make your curriculum more meaningful."
—Meile Harris

Theresa Maves, Meile Harris , and Jill Whitesell all began their careers in schools that implemented the teaching team concept. Their evolution into a high functioning instructional team at O'Leary Junior High is a story of professional development and dedication to learning.

- [The Growth of a Team](#)

Each teacher brings a unique teaching background and style to the team. They all acknowledge the advantage of having each other's interest and

Internet

- Teacher Backgrounds
- Classroom Information
- Team Philosophy

Learning That Works

It's a Wild Ride - Learning That Works - Microsoft Internet Explorer

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Learning That Works

It's a Wild Ride takes a high interest topic, roller coasters, and builds content-specific knowledge before moving to an open-ended group design task.

"We like hands-on activities but we do not always find them 'minds-on' or applicable. We wanted something that was fun and rewarding for students that contained rigorous, applicable skills—a high-interest unit that required students to apply math concepts in a science context."
—Theresa Maves

Request for Proposals

The owners of the Canyon Amusement Park are seeking proposals for a new roller coaster ride. This coaster must thrill riders young and old with unique design features that incorporate the best in safety and engineering while providing an unforgettable experience.

It's no secret that the Canyon Amusement Park is in desperate need of a new high-interest ride that will increase attendance. Our goal is to attract roller coaster fans from near and far. The future of our local theme park rides on your ingenuity.

We will accept proposals in eight weeks. Complete proposal criteria available upon request — serious inquiries only.

The Management, Canyon Amusement Park
T. Maves, M. Harris, J. Whitesell

Done Internet

- Scheduling
- Student Organizers
- Team Tasks
- Organization Tips

Job Specific Roles

It's a Wild Ride - Learning About Careers - Microsoft Internet Explorer

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Teacher Materials

Learning About Careers

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Theresa uses a cooperative-group jigsaw activity to give students an idea of careers in the amusement park industry. She used articles from the Thrill Ride curriculum.

On the Job

This activity provides an opportunity for career exploration while it introduces students to the idea of jobs on the design team: architect, engineer, researcher, and public relations director.

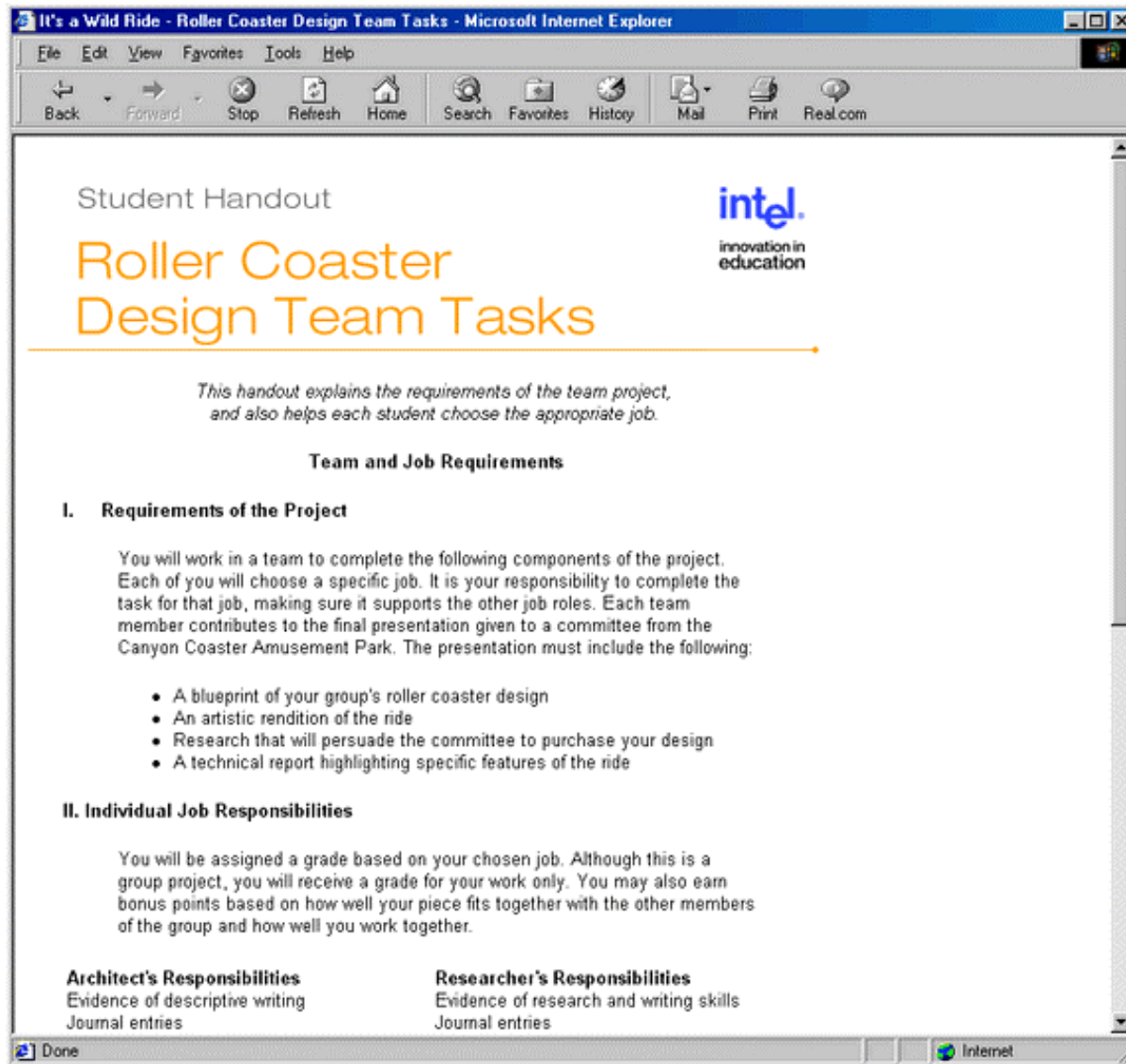
1. Students are assigned to the heterogeneous groups they work in for Roller Coaster Design task.
2. Each person on the team chooses an "On the Job" article written by someone who works in the amusement park industry:
Manager of an Amusement Park, Walt Davis
Roller Coaster **Engineer and Project Manager**, Cynthia Emerick
Ride Designer, Ron Toomer
Physicist, Robert Speers
3. Each student reads the article, notes highlights, and meets in a small expert group (with those who read the same article). They discuss the important aspects of the job and what skills are required for that job.
4. Students meet in their home groups of four and teach each other what they learned about the career.

[Return to Learning That Works](#)

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Team and Job Requirements



The screenshot shows a Microsoft Internet Explorer browser window with the title bar "It's a Wild Ride - Roller Coaster Design Team Tasks - Microsoft Internet Explorer". The address bar is empty. The menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The toolbar contains icons for "Back", "Forward", "Stop", "Refresh", "Home", "Search", "Favorites", "History", "Mail", "Print", and "Real.com".

The main content area displays the following text:

Student Handout

**Roller Coaster
Design Team Tasks**

*This handout explains the requirements of the team project,
and also helps each student choose the appropriate job.*

Team and Job Requirements

I. Requirements of the Project

You will work in a team to complete the following components of the project. Each of you will choose a specific job. It is your responsibility to complete the task for that job, making sure it supports the other job roles. Each team member contributes to the final presentation given to a committee from the Canyon Coaster Amusement Park. The presentation must include the following:

- A blueprint of your group's roller coaster design
- An artistic rendition of the ride
- Research that will persuade the committee to purchase your design
- A technical report highlighting specific features of the ride

II. Individual Job Responsibilities

You will be assigned a grade based on your chosen job. Although this is a group project, you will receive a grade for your work only. You may also earn bonus points based on how well your piece fits together with the other members of the group and how well you work together.

Architect's Responsibilities Evidence of descriptive writing Journal entries	Researcher's Responsibilities Evidence of research and writing skills Journal entries
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The status bar at the bottom shows "Done" and "Internet".

Working Together

It's a Wild Ride - Working Together - Microsoft Internet Explorer

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Working Together

Planning, scheduling, and monitoring work in three classrooms requires coordinated teamwork among teachers and students.

"Planning for student group work is something that needs to be carefully thought out. We wanted a unit that reinvented the group process, where the students recognize the difference between groups that have created synergy and regular group work. Students need to experience this distinct difference."
—Theresa Maves

It's a Wild Ride grew out of a roller coaster unit that Theresa had done in her science classes for two years. It was originally a two-week culminating activity to a unit on Newton's Laws of Motion. During a summer institute in 1999, the team decided to expand it as an interdisciplinary unit and incorporate it under a year-long theme of Community. They scheduled the unit for the end of the year, presenting it as an aspect of community they called "Beyond the Basics"—a study of what society has developed for pleasure and recreation once basic needs are met.

Leading the Way
The team feels that it is necessary for one subject area to lead any interdisciplinary unit they develop. They try to arrange for a different subject to lead each interdisciplinary unit. This helps to divide the workload and leadership responsibilities among the teaching team throughout the year. It also helps when forming student groups.

"Science led this unit which means that groups were formed out of my class, therefore group work was done in my class. I also led the unit among the teacher group coordinating curriculum and schedules." —Theresa Maves

Internet

- Assessments
- Scoring Guides
- Student Work Samples

Daily Calendar

Teacher Materials

Daily Calendar

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It's a Wild Ride Daily Calendar

A 19-day project calendar outlines the main activities for each 85-minute period. The project began April 3, 2000 with final group presentations on May 23, 2000.

	Science	Math
Day 1	<ul style="list-style-type: none">• Video-<i>Thrill Ride</i> Journal entry on prior experiences and observations of force and motion-Share• <i>Stand a raw egg on its head</i> Newton's First Law from pg. 29,30 Action Labs and 13.18 from Science Inquiry	<p>Exploring Linear Equations</p> <ul style="list-style-type: none">• <i>The Wave</i> from Algebra Experiments: Exploring Linear Equations I
Day 2	<p>Newton's Second Law</p> <ul style="list-style-type: none">• Newton's Second Law pg.31-34 from Action Labs• <i>So nice of you to drop in</i> Newton's Second Law pg. 28 <i>Give it a whirl</i> and 38 from Thrill Ride	<p>Exploring Linear Equations</p> <ul style="list-style-type: none">• <i>Bouncing Balls</i> from Algebra Experiments: Exploring Linear Equations I
	Science	Math

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Red Book

The screenshot shows a Microsoft Internet Explorer browser window. The title bar reads "It's a Wild Ride - The Red Book: Preface - Microsoft Internet Explorer". The address bar is empty. The menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The toolbar contains icons for "Back", "Forward", "Stop", "Refresh", "Home", "Search", "Favorites", "History", "Mail", "Print", and "Real.com".

The main content area displays a "Student Handout" titled "The Red Book" in orange text. The Intel logo with the tagline "innovation in education" is in the top right. A large red rectangular area on the left side of the page contains the text "back to working together" at the bottom. To the right of this area, the section is titled "Preface" and contains the following text:

Preface

Get ready for a thrilling ride of adventure in your classes as we explore the underpinnings of roller coasters. This unit will provide a real-world application of how you use math, science, and language arts skills to deepen your understanding of how things operate in the real world.

You are given the task to design the ultimate ride for the Canyon Coaster Amusement Park. The park needs to increase their attendance or go bankrupt. They need a ride that will attract students like you, therefore, increasing their profits.

Continue reading for a complete description of your task.

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[Return to Setting the Stage](#)

The status bar at the bottom shows "Done" and "Internet".

Using Workspaces

It's a Wild Ride - Using Workspaces - Microsoft Internet Explorer

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Using Workspaces

Flexibility in technology access and an extended period schedule supports this multifaceted project that integrates several different technologies.

"With a block schedule we are afforded multiple ways to use our classrooms and workspaces." —Theresa Maves

Flexible Workspaces
Students meet in their scheduled classrooms, but depending on the activity, may move to one of the other classrooms. If the day's activities call for the use of computers, students may use a computer lab, the Media Center, or the six computers in the language arts classroom. The block schedule provides the time necessary to allow student movement, as well as access to the team's three classrooms, allowing for multiple workspaces.

Daily Block Schedule
Primetime - 8:20-8:37
Block 1/5 - 8:41-10:06
Block 2/6 - 10:10-11:35
Block 3/7 - 11:39-1:31 (Planning Time - Red Days)
Block 4/8 - 1:35-3:00 (Planning Time - White Days)

School Map and Classroom Panoramas

- [View Graphic Map of O'Leary School](#)
- [Explore Panorama of Theresa's Science Classroom](#)
- [Explore Panorama of Meile's Math Classroom](#)
- [Explore Panorama of Jill's Language Arts Classroom](#)

Internet

- Detailed Product Descriptions
- Sequence of Activities
- Planning the Project

Assessing Learning

It's a Wild Ride - Assessing Learning - Microsoft Internet Explorer

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Assessing Learning

A range of assessment strategies from embedded performance assessment to traditional paper tests, inform students and teachers about learning progress.

"Assessment is generally considered the last requirement in a unit to test students on what they learned. However, in our view assessment is an ongoing process and an integral part of the unit from the very beginning. Developing a rubric to guide our assessments creates a more authentic environment."
—Theresa Maves

Defining Quality Work

The teachers develop and use scoring rubrics that they share with students as performance tasks are introduced. The home roller coaster project includes five criteria for which students are scored as "Meets Mastery" or "Redesign Required." For full credit students are asked to write a description of how they would redesign their ride to meet the criteria.

- [Home Roller Coaster Scoring Rubric and Performance Assessment \[Adobe PDF, Microsoft Word DOC\]](#)

Monitoring Progress

Theresa, Meile, and Jill each use regular journaling to track progress and identify problems before they grow. Depending on the journal entry, students may turn them in for review and receive credit for complete responses. During the final group project, design team members meet during their science period to report on their individual progress.

- [Team Progress Report Form](#)

Internet

- Technology Tools
- Classroom Layout Examples

Rubric

It's a Wild Ride - Rubric for the Home Roller Coaster Project - Microsoft Internet Explorer

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Teacher Materials

Rubric for the Home Roller Coaster Project

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This rubric helps students identify what the targets are for their roller coaster project. The project is used as a performance assessment in both math and science.

Roller Coaster Project Criteria and Scoring Rubric

Name: _____

Partner(s): _____
(Include parent or family members if they helped)

- Design a three-element marble roller coaster (may use other car type).
- Work in groups of up to three people.
- Deliver to school by May 10.
- Keep a journal of the process. Record in composition book.
- Get parent signature.
- *Fill out scoring rubric below before bringing the roller coaster to school. Explain why you chose the column by writing comments in that particular box. See example below.*

(Example)	Meets Mastery	Redesign Needed
Gravitational force		Marble only made it through the first two elements - too many elements
Three design elements	Spiral, loop, two camel backs, and an inversion	

Scoring Rubric for Home Roller Coaster

	Meets Mastery	Redesign Needed

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Progress Report

It's a Wild Ride - Group Progress Report - Microsoft Internet Explorer

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Student Handout

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Group Progress Report

Each design team member describes their own progress, then gives an update to the group. Students also note each other's progress on the form.

GROUP PROGRESS SHEET		
Everyone in the group fills one out		
JOB ROLE	PROGRESS <i>Comment on what has been accomplished</i>	EVALUATION COMMENTS
ARCHITECT Name:	Drawing design to scale Creating artistic rendition Journal Entry:	
ENGINEER Name:	Mini-model made Chart filled out Technical report Journal Entry:	
RESEARCHER Name:	Research completed Research shared in group Outline of report Rough draft Final draft Journal Entry:	
PUBLIC RELATIONS DIRECTOR Name:	List what you have done so far: Journal Entry:	

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Supporting Success

It's a Wild Ride - Supporting Success - Microsoft Internet Explorer

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Supporting Success

A committed teaching team and a strong instructional leader are only two of the several factors that support successful classrooms at work.

"We really rely on our administrative personnel in the building. They are supportive of the whole teaming process." —Jill Whitesell

In addition to effective leadership, the teachers recognize a team of like-minded colleagues, a block schedule, and district innovation for supporting their success.

Effective Leadership
Principal Wiley Dobbs has been a leader in middle school reform in his building and beyond. He has served as president of the Idaho Middle Level Association and has been recognized nationally as well. Soon after joining O'Leary as principal he began to look for strategies for school improvement at the middle level. One of those was teacher teaming.

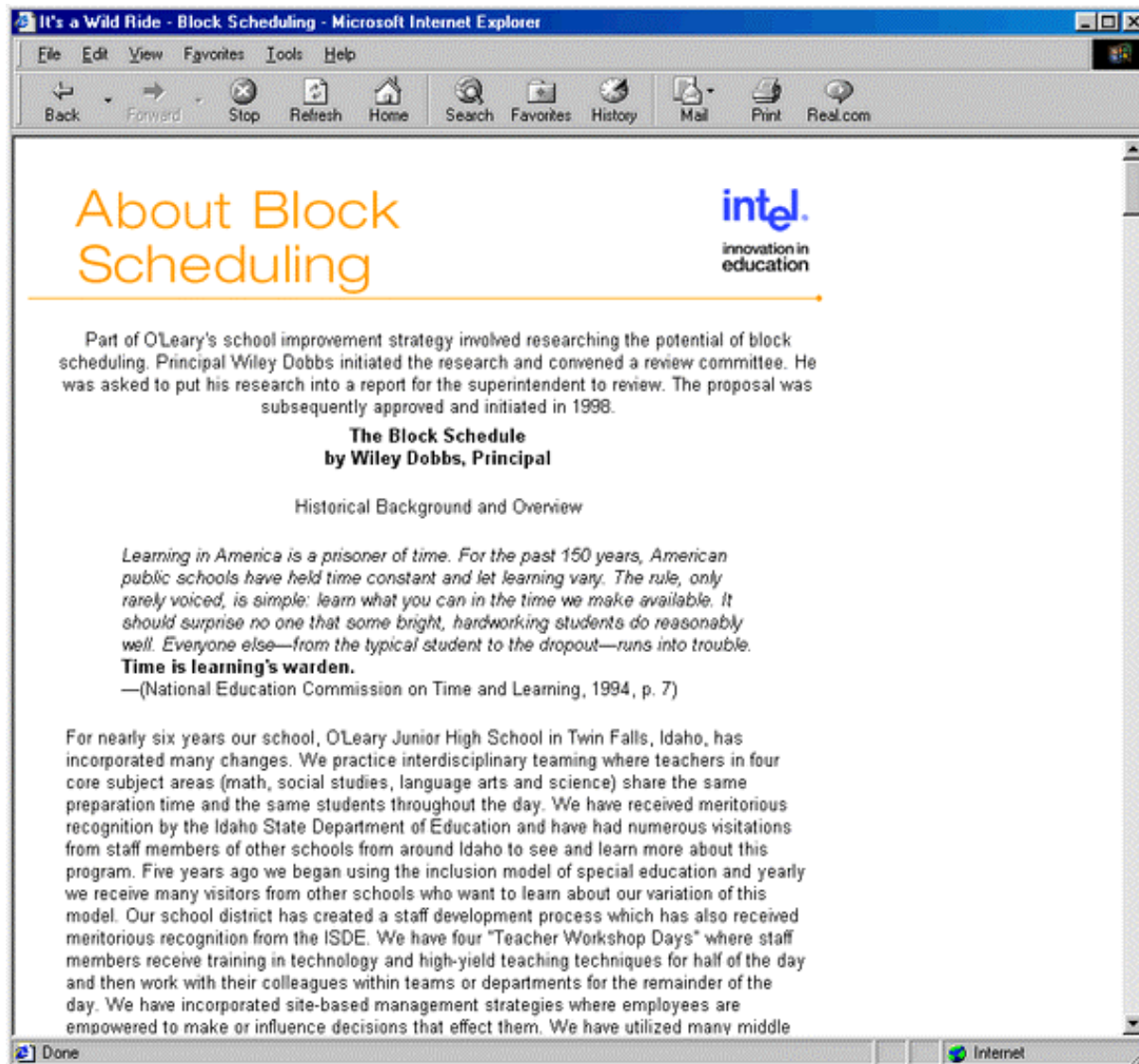
"I don't visit individually with 55 teachers. I go and talk with teams. That gives me much more time to be an instructional leader. I do much less managing, and I am able to really concentrate on creative ideas and ways in which I can remove barriers for teachers." —Wiley Dobbs

With a teaming structure in place, administrative tasks become streamlined, providing more time for in-depth conferences. Curriculum planning can be conducted with teams instead of individual teachers. Students and parents benefit from the coordinated communication and monitoring across the students' courses and activities.

Internet

- Leadership
- Scheduling
- Teaming

Block Scheduling



The screenshot shows a Microsoft Internet Explorer browser window. The title bar reads "It's a Wild Ride - Block Scheduling - Microsoft Internet Explorer". The address bar is empty. The menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The toolbar contains icons for "Back", "Forward", "Stop", "Refresh", "Home", "Search", "Favorites", "History", "Mail", "Print", and "Real.com".

The webpage content features the title "About Block Scheduling" in a large orange font on the left, and the Intel logo with the tagline "innovation in education" on the right. Below the title, a paragraph describes the research initiated by Principal Wiley Dobbs in 1998. This is followed by the section heading "The Block Schedule by Wiley Dobbs, Principal" and a sub-heading "Historical Background and Overview". A quote from the National Education Commission on Time and Learning (1994) is presented, along with a paragraph detailing the implementation of block scheduling at O'Leary Junior High School in Twin Falls, Idaho.

About Block Scheduling

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Part of O'Leary's school improvement strategy involved researching the potential of block scheduling. Principal Wiley Dobbs initiated the research and convened a review committee. He was asked to put his research into a report for the superintendent to review. The proposal was subsequently approved and initiated in 1998.

The Block Schedule
by Wiley Dobbs, Principal

Historical Background and Overview

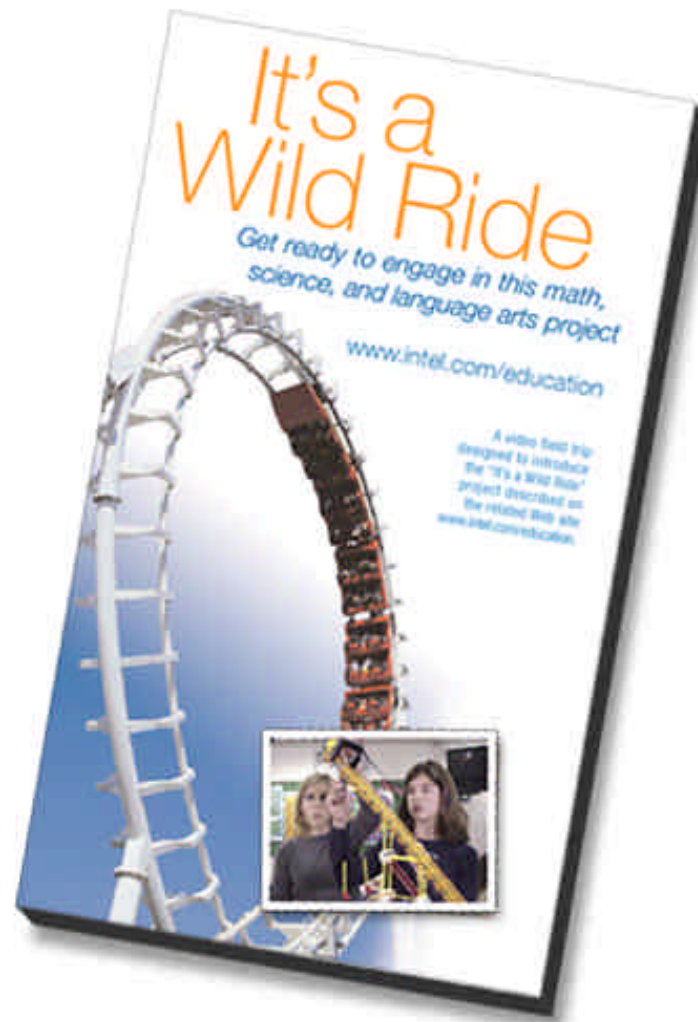
Learning in America is a prisoner of time. For the past 150 years, American public schools have held time constant and let learning vary. The rule, only rarely voiced, is simple: learn what you can in the time we make available. It should surprise no one that some bright, hardworking students do reasonably well. Everyone else—from the typical student to the dropout—runs into trouble.

Time is learning's warden.
—(National Education Commission on Time and Learning, 1994, p. 7)

For nearly six years our school, O'Leary Junior High School in Twin Falls, Idaho, has incorporated many changes. We practice interdisciplinary teaming where teachers in four core subject areas (math, social studies, language arts and science) share the same preparation time and the same students throughout the day. We have received meritorious recognition by the Idaho State Department of Education and have had numerous visitations from staff members of other schools from around Idaho to see and learn more about this program. Five years ago we began using the inclusion model of special education and yearly we receive many visitors from other schools who want to learn about our variation of this model. Our school district has created a staff development process which has also received meritorious recognition from the ISDE. We have four "Teacher Workshop Days" where staff members receive training in technology and high-yield teaching techniques for half of the day and then work with their colleagues within teams or departments for the remainder of the day. We have incorporated site-based management strategies where employees are empowered to make or influence decisions that effect them. We have utilized many middle

Done Internet

It's A Wild Ride: Video



More Information



Web Site

<http://www.intel.com/education/>

Videotape

<http://www.intel.com/education/education/projects/wildride/order.htm>