

Risky Business

INTEGRATED
CURRICULUM UNIT
ON HEALTH INSURANCE

UNIT
OVERVIEW

Risky Business

CONTENTS

	Page
Unit Overview	1
Subunit 1 Overview	
Lesson 1.1 Health Science	
Lesson 1.2 U.S. History	
Lesson 1.3 Health Science	
Lesson 1.4 English Language Arts	
Subunit 2 Overview	
Lesson 2.1 Biology	
Lesson 2.2 Biology	
Lesson 2.3 Biology	
Lesson 2.4 Health Science	
Lesson 2.5 English Language Arts	
Lesson 2.6 Spanish I	
Subunit 3 Overview	
Lesson 3.1 Health Science	
Lesson 3.2 Algebra I	
Lesson 3.3 Algebra I	
Lesson 3.4 Physical Education	
Lesson 3.5 English Language Arts	
A Risky Business	3
<i>Insurance Is a Risky Business</i>	5
<i>An Unhealthy History</i>	19
<i>Alphabet Soup</i>	27
<i>Starting an Insurance Company Part 1: The Vision</i>	29
Knowing the Risks	33
<i>Investigating Inherited Traits</i>	35
<i>Predicting With Punnett Squares</i>	41
<i>Pedigree Charts</i>	53
<i>High-Risk Behaviors</i>	61
<i>High-Risk Behaviors Workplace Brochure</i>	65
<i>Impact of Environment and Society on Health and Wellness</i>	69
Making Decisions	73
<i>Starting an Insurance Company Part 2: The Policies</i>	75
<i>Dice With Death: Probability in Mortality Tables</i>	87
<i>Medical Coverage Choices</i>	91
<i>Designing a Wellness Program</i>	95
<i>Starting an Insurance Company Part 3: Choosing Clients</i>	99

ConnectEd: The California Center for College and Career
 2150 Shattuck Avenue, Suite 1200
 Berkeley, CA 94704
 510-849-4945
 FAX: 510-841-1076
www.ConnectEdCalifornia.org

National Consortium on Health Science and Technology Education
 2410 Woodlake Drive
 Okemos, MI 48864-3997
www.nchste.org

Contributing Teacher Team:
 Arthur A. Benjamin Health Professions
 High School, Sacramento, CA

Copyright © 2007 by ConnectEd:
 The California Center for College and Career. All rights reserved.

Risky Business

UNIT OVERVIEW

Essential Question for This Unit

How can we balance personal freedoms and society's need to provide accessible, affordable healthcare?

Unit Summary

Students will learn about lifestyle and genetic influences on health status and about the health insurance system in the United States. They will imagine a future healthcare environment in which technology has greatly advanced, treatment costs have escalated, and individual lifestyle and medical data are widely available to insurers. In this scenario, insurance companies routinely use this kind of information to create programs aimed at improving health outcomes, set insurance rates, approve or deny applications for health insurance, and reduce healthcare expenses.

In Subunit 1, students learn about the importance of having health insurance. They are introduced to the various types of medical insurance plans, learn how insurance covers the costs of medical treatment, and study how the industry has evolved in the United States. Working in small groups, students form their own insurance companies.

In Subunit 2, students research the influence of high-risk behaviors and inherited factors on health outcomes, focusing heavily on the heritability of various diseases and the effects of modifying high-risk behaviors on health outcomes.

In Subunit 3, acting as officers of their insurance companies, students evaluate hypothetical profiles of insurance applicants that include medical histories and data concerning high-risk behaviors. They use this information to decide whether to approve applicants for health insurance coverage and to determine the premiums they will be charged. Students also propose steps that their insurance companies and applicants can take to reduce rates of illness and injury and mortality from high-risk behaviors and inherited influences on health status.

Culminating Event

Student participation in the unit could culminate with a schoolwide health fair. As representatives of their fictitious insurance companies, groups of students will create and display a presentation detailing their decisions to approve or deny medical insurance and to set insurance rates. Presentations will include research findings about relevant medical conditions and lifestyle factors and a risk analysis for hypothetical insurance applicants. They will also include letters sent by the insurance company to each applicant—detailing the company's decision—and marketing materials designed to promote the company's efforts to improve the health outcomes of policyholders and members of health systems.

Key Questions/Issues

- Why is healthcare so expensive, and where does the money go? Why do some people travel to Canada or Mexico to buy prescription drugs? What are the risks and benefits associated with buying medication abroad? (U.S. History, Health Science, and Spanish I)
- What determines insurance rates? What makes insurance cost more for some individuals than for others? (Algebra I)
- How can individuals reduce their insurance and healthcare costs? (Health Science and English Language Arts)
- Who should be responsible for paying for healthcare: individuals, businesses, and/or the government? What role might each play in promoting national health? (U.S. History)
- What rights do employers have to limit employees' personal activities? (U.S. History and Physical Education)
- How do genetics account for individual differences in various characteristics? That is, why do I look like/different from my parents and siblings, and why do I have similar/different health-related characteristics? (Biology)

- Are you destined to follow in your parents' footsteps in terms of health? What factors are beyond individual control, and what factors can be manipulated? (Biology and Health Science)
- What accounts for differences in life expectancy and infant mortality in various parts of the world? (Spanish I)
- What can social, government, and philanthropic programs do—and what are they doing—to improve public health? (U.S. History and Spanish I)

Learning Scenario to Kick Off the Unit

The Ski Club's annual trip to Lake Tahoe is just around the corner. In a triumph of planning and lucky timing, the club has managed to schedule the trip on the very same weekend that Squaw Valley is offering a packaged workshop on extreme aerials by a member of the U.S. Olympic Ski Team. The members of the club are ecstatic. Enthusiasm had reached a fever pitch when, 2 days before the trip, the principal announced that participating in the aerials workshop was forbidden. Despite student protests, the principal explained that the district office had informed him that the school's field trip liability insurance could not cover such a high-risk activity. If anything happened, the district's insurance premiums would rise. He said that the district's budget is already stretched to the limit and they cannot afford additional insur-

ance. It might be possible to pass the insurance costs on to individual students, but the trip is already very expensive and not everyone can afford to pay more. The club has been fund raising for weeks to cover all the costs, and coming up with more money at this late date seems unrealistic. The club president thinks the district is exaggerating the risk. A district official has agreed to meet with representatives of the club to discuss the situation. What should be done? What arguments can the club present that will convince a skittish district? Why has the district adopted their position?

Biomedical/Healthcare and Education Partner Roles

- Representatives from local healthcare institutions and insurance companies will play key roles providing a real-world context.
- Speakers from various professions will participate. These include:
 - Actuaries
 - Benefits Managers
 - Health Information Technicians
 - Insurance Processors
- Professionals from local healthcare partners will play key assessment roles, serving as evaluators for the culminating event.

SUBUNITS AND MAJOR TOPICS (ACROSS ACADEMIC AND TECHNICAL SUBJECT AREAS)

Subunit 1 <i>A Risky Business</i>	Subunit 2 <i>Knowing the Risks</i>	Subunit 3 <i>Making Decisions</i>
HEALTH SCIENCE · U.S. HISTORY · ENGLISH LANGUAGE ARTS	BIOLOGY · ENGLISH LANGUAGE ARTS · SPANISH I · HEALTH SCIENCE	ALGEBRA I · ENGLISH LANGUAGE ARTS · HEALTH SCIENCE · PHYSICAL EDUCATION
<ul style="list-style-type: none"> • Health insurance options in the United States • Evolution of the health insurance industry • U.S. healthcare legislation and its impact on the healthcare and insurance systems • Determination of rates and fees in the healthcare system • Analysis of medical insurance payment options • Print and multimedia design 	<ul style="list-style-type: none"> • Inheritance and expression of physical traits, including such topics as dominant and recessive alleles, phenotype vs. genotype, genetic ratios and Punnett squares, autosomal vs. X-linked genetic disorders, and pedigree charting • Structural features of writing informational materials • Multimedia research and presentation skills • Healthcare systems and health status in Latin America, including comparisons and analyses of health status for various population groups in the United States 	<ul style="list-style-type: none"> • Human wellness and preventative measures • Qualitative cost vs. benefit lifestyle analysis • Quantitative insurance risk assessment analysis • Linear equations • Probability theory