

# Project-Based Learning: The BUX Market Project Grade 9

*Katherine Weber*



This project's aim was to join Grade 9 social studies, language arts and math in an authentic and engaging all-encompassing project. Students created a business to market and sell the same product in an open market to the rest of the school. The rest of the school population—teachers, students and support staff—had BUX (the Share Index of the Budapest Stock Exchange) to spend in the market. (This is the only currency allowed in the market.) Groups only had one hour in the market to sell their product, but from here they gathered statistics and totalled their profit, and two weeks later they would have to present their business or company to a board of potential investors. Students did premarket surveys, analyzed data and investigated the behaviours of teenage consumers. The potential investors on the final panel were all community members from various areas: business experts and owners, marketers, professional entrepreneurs and so on. We utilized as many community experts as possible in this project, many who would come back and join us on the expert investment panel at the end of the project. The panel of experts

would question the students on the viability of their company and how their investments would be used to improve or expand their current operations.

## **Rationale and Math Objectives**

When looking to integrate a cross-curricular project or to transition a classroom into a project-based focus, teachers have reservations, believing it will be more work than traditional learning. However one needs to keep in mind based on what we know about the changing 21st-century learner that this traditional approach may only work for a small portion of the class. Authentic engagement in a meaningful and real-world task allows students to do math without really being aware that they are doing math. Also, bringing professional mentors from the community to show how they use math in their everyday lives can be less work for teachers and extremely beneficial for students. Students who succeed in math and know how math and the other subjects interrelate take this knowledge with them to their professional careers,

**Social Studies 9.2**

Students will demonstrate an understanding and appreciation of how economic decision making in Canada and the United States affects quality of life, citizenship and identity.

**Scarcity Simulation and Reflection**

Popcorn simulation—What is scarcity? What problems does it create? Is it necessary for our market to function? How can we diminish the cost of scarcity?

**Experts and Mentors**

- Small business owners (various)
- Marketing (Cathi Hobbins 780-518-3067)
- Community Futures Grande Prairie and Region (Leah Holler 780-814-5340)

**Blog Response (Online)**

Consumerism and Teens—Mindless Spenders or Voting Power?

**Case Studies of Market Effects on Oil**

How has the recent oil crash affected our society in Alberta?  
Understand why oil crashed and what repercussions this has on our area.

**BUX Market Project**

Students will create a business to sell the same product as their peers in an open market to other students in the school. Students will have varying amounts of money to spend. Businesses will have to keep track of the product they sell, how much profit they make and analyze their demographics for analysis. This market will last one hour, but marketing will take place the weeks beforehand.

**Math 9**

- Describe the effect of bias, use of language, ethics, cost, time and timing, privacy, cultural sensitivity on the collection of data.
- Demonstrate an understanding of the role of probability in society.
- Select and defend the choice of using either a population or a sample of a population to answer a question.
- Develop and implement a project plan for the collection, display an analysis of data by (1) formulating a question for investigation, (2) choosing a data collection method that includes social considerations, (3) selecting a population or sample, (4) collecting the data, (5) displaying the collected data in an appropriate manner and (6) drawing conclusions to answer the questions.

**Social Studies 9**

- What is a market economy?
- How do the economies of the USA and Canada differ? How are they similar?
- What is scarcity?
- What is consumerism?
- Why do people buy certain products?
- What role should governments play in regulating business in our society?
- Taxation: How does this affect businesses? People? Why is it important and what does it provide?

**Language Arts 9**

Analyze creative uses of language and visuals in popular culture, such as advertisements, electronic magazines and the Internet; recognize how imagery and figurative language, such as metaphors, create a dominant impression, mood and tone.  
Express the themes of oral, print or other media texts in different forms or genres.  
Evaluate the effectiveness of different types of media texts for presenting ideas and information.  
Assess adequacy, accuracy, detail and appropriateness of oral, print and other media texts to support or further develop arguments, opinions or points of view.  
Develop coherence by relating all key ideas to the overall purpose of the oral, print or other media text.  
Communicate ideas and information in a variety of oral, print and other media texts, such as media scripts, multimedia presentations, panel discussions and articles.  
Communicate ideas and information in a variety of oral, print and other media texts, such as media scripts, multimedia presentations, panel discussions and articles.  
Identify and experiment with some principles of design that enhance the presentation of texts.  
Select, organize and present information to appeal to the interests and background knowledge of various readers or audiences.

**Driving Questions**

**Math 9:** How do we as small business owners create a business plan for a public audience to gain financial backing of our products?  
**Language Arts:** How can we as small business owners develop marketing materials that are organized, planned out and purposefully written to sell products for a formal company?  
**Social Studies:** How do market and mixed economies affect businesses who operate in them? How are we all part of the consumer cycle?

**Formative Assessment**

Business proposal feedback from experts  
Discussion (online and in class)  
Group choices—reflection  
Self-assessment. Midpoint check-in. Self-assessment final.  
Feedback from experts.

**Cross-Curricular Competencies**

- Working in groups
- Creative thinking
- Collaboration
- Entrepreneurial spirit
- Critical thinking
- Ethical citizenship

**Summative Assessment**

Presentation of business plans to “Dragons” to get backing and funding for company.  
• Rubric for all classes based on content of materials—letter graded A, B, C



not just to get into college or university. During this project we covered a multitude of anticipated and unanticipated objectives. Next year, we would like to formally incorporate those unintentionally met objectives. This project covered the following objectives:

1. Graph a linear relation, analyze the graph and interpolate or extrapolate to solve problems.
2. Describe the effect of the following on the collection of data:
  - Bias
  - Use of language
  - Ethics
  - Cost
  - Time and timing
  - Privacy
  - Cultural sensitivity
3. Select and defend the choice of using either a population or a sample of a population to answer a question.
4. Develop and implement a project plan for the collection, display and analysis of data by
  - formulating a question for investigation,
  - choosing a data collection method that includes social considerations,
  - selecting a population or a sample,
  - collecting the data,
  - displaying the collected data in an appropriate manner and
  - drawing conclusions to answer the question.
5. Cover most or all Information and Communication Technology (ICT) outcomes for this division.

## Timeline

This project began on March 11, 2015, and culminated with the expert panel on April 18, 2015. We utilized social studies, language arts and math blocks to become general project blocks, which gave us about 770 minutes a week. Each subject area had its own checklist of formative and summative items with dates attached, which allowed students and teachers to know the progress of each group.

## Teacher Collaboration

Teachers met during lunch hours to discuss group progress, mini lessons, expert visits and so on. These meetings were essential to ensure success for students in the long run. We met for 30 minutes one to two times a week for seven weeks. We also utilized Google Drive to share a common folder and create rubrics and assignments together, which allowed us to meet and collaborate without actually getting together.

## Results

The amount of student growth during this project was very tangible in our project groups. Not all students were as deeply engaged as others were, but all students found success. For example, two students who were on Knowledge and Employability math programming fully integrated into their project groups and provided meaningful work in their area of expertise, such as graphing or analyzing the statistics of a student survey. This was true success for us as a teacher cohort because all students invested in the project, not just those who enjoyed math or were normal high achievers. Also, quite a few students who were normally average academic achievers shone through and developed a deep-seeded interest in the mathematical and business-oriented side of this project. They seemed very motivated by the fact that math would be helpful to them as entrepreneurs or business professionals. We really understood how deeply the students grasped the mathematical concepts in this project when they began to describe the results of their business at the Dragons' Den panel review (our finale). For example, students provided graphs of projected profits based off of their earnings from the first market, used data collected to justify projected growth of their businesses, used and applied language like bias, ethics and cultural sensitivity in their presentations to the professional panel. It was truly amazing to see how deeply they grasped these concepts and not only understood but applied them in a meaningful way. In the end, this project did take some work on the part of the teachers. However, the traditional approach to teaching these topics may work to have some students understand, but rarely would you see the level of engagement we did during our project-based approach.

*Katherine Weber grew up on a farm in northern Alberta and returned to her hometown after university to teach and coach. In her spare time she enjoys the outdoors, rock climbing, fishing and gardening with her family. Katherine also has a huge passion for social justice initiatives and doing volunteer work in her community. She is in her fifth year of teaching and her current teaching assignment is in junior high at St Mary's School in Sexsmith, Alberta. Katherine is an educational technology enthusiast and loves to learn about new educational initiatives. She has a blog where she writes on topics of technology and project-based learning: <http://houseofweber.weebly.com/blog>.*