IISME Education Transfer Plan

Dollars and Sense: "It's All About the Benjamins"

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Connection to Fellowship:

While working with the Center for Nursing Excellence, I was charged with developing a method for collecting extensive data using Excel. Though working in a medical environment, I found that my skills in mathematics, particularly data collection and analysis were of utmost importance. Through this project, I hope my students will develop proficiency in both data analysis and technology. In addition, I hope that they will make a real life connection with what they learn in the classroom.

Project Overview:

During our Open Court Literacy Unit "Dollars and Sense," students in the class will create their own business complete with product development and production, advertising, and sales. Using Excel, students will input data from their business to create graphs and tables. Students are then expected to analyze their data. Profits from this business will be donated to the charity of the students' choice.

Project Objectives:

1. Integrate technology, math, and language arts
2. Give students' learning a meaningful context
3. Develop critical thinking skills

State Standards Addressed:

This project will address the following California 4th Grade Standards:

Mathematics

SDAP 1.0 Students organize, represent, and interpret numerical and categorical data and clearly communicate their findings:

> 1.1 Formulate survey questions; systematically collect and represent data on a number line; and coordinate graphs, tables, and charts.

1.2 Identify the mode(s) for sets of categorical data and the mode(s), median, and any apparent outliers for numerical data sets.

English and Language Arts

Research and Technology

1.9 Demonstrate basic keyboarding skills and familiarity with computer terminology (e.g., cursor, software, memory, disk drive, hard drive).

Resources:

Product materials (varies by students' choice of product)
Paper
Chart papers
Overhead
LCP projector
Computer with Excel program
Worksheets: Interest survey, Product Form, and Financial Planning form

Implementation Plan:

- **Lesson I: Project Introduction and Elements of a Successful Business**
- **Lesson II: Concept Development and Business Teams**
- **Lesson III: Financial Planning**
- **Lesson IV: Marketing Plan**
- **Production and Sales**
- **Lesson V: Data Collection and Using Excel**
- **Lesson VI: Project Closure and Data Analysis**

Lesson I: Project Introduction and Elements of a Successful Business

Objective: Students will be able to…

- Identify elements of a successful business
- Name key components of the business project
- Complete product interest survey

Introduction: Students have just read "Starting a Business" from the Open Court Literacy Program. Brainstorm with students businesses in their community or businesses that they know. Record answers on the board. Ask students to then generate businesses that their family members are involved in. Using a KWL chart, generate ideas about what makes a business successful. What are the elements of a strong business / company?

Instruction: Explain to students that during this Open Court Unit, the class will become a company. The class will create our own product, advertise, and sell. Explicitly outline the objectives for the project:

1. Create graphs using the computer program, Excel
2. Become more proficient with computers
3. Develop mathematics skills: basic computation and data analysis
4. Contribute positively to our community

With the class, introduce the steps that the class will need to complete in order to execute this project. Reference the KWL chart that the class generated.

1. Develop a product
2. Make a budget
3. Create the product
4. Develop advertising / marketing plan
5. Sell the product
6. Collect sales data
7. Analyze data using the computer

Guided Practice: Before the company can begin, we must examine our own strengths to see what we can bring to the company. Introduce the interest survey. Using an overhead or LCD projector, model how to complete the interest survey.

Independent Practice: Students will complete the interest survey as homework.

Closure: Quick wrap up of project. Ask volunteers to review project components as a class. Ask students to think of company names as part of homework.

Lesson II: Concept Development and Business Teams

Objective: Students will be able to…

- Develop product ideas as a group
- Determine the class product by voting
- Choose a focus area for the product such as finance or marketing

Introduction: Ask students to share some of their responses from the interest survey. Tell students that today they will develop their product and pick which business team they would like to be on.

Instruction: With the class, introduce how to brainstorm business ideas and how to complete a Product Form. Determine, as a class, the criteria for the company's product. Explain that in table groups, students will come up with product ideas and then investigate the product. Groups will be responsible from coming up with at least two viable product ideas.

Guided Practice: Pick an example product and model how to fill out a product from. Explain that groups must think critically about the products they pick. Remind them that the main objective is to think of a product that they can make and sell with a profit. Refer students to the norms of group discussion.

Independent Practice: Students brainstorm and discuss in their table groups. Groups fill out Product Form.

Closure: Share group product ideas. Ask students to review the criteria for a good product. Vote on the product that the class would like to sell. Then, tell students to record in preferential order the company team they would like to be on: finance, production, and marketing.

Lesson III: Financial Planning

Objective: Students will be able to…

- Define and calculate "profit"
- Use critical thinking and mathematics skills to determine total cost, unit cost, profit
- Recommend a reasonable sale price for the product

Introduction: Remind students that businesses want to earn a profit. Review definition of "profit." Refer back to the steps of the project. We now must create our budget and determine the price of the product.

Instruction: Teacher must develop a list of costs. For example, if the class were making greeting cards, a 30-pack of paper = $3.00. For the project, the class might need a total of 5 sets of markers which are $2.50 ea. Using a Financial Planning worksheet to accompany the cost list, groups must determine the total cost of making the product, the unit cost, calculate profit based on certain price points (10 % mark up, 20% mark up, etc.) This worksheet will be used to develop our company budget as well as determine sales targets / goals.

Guided Practice: Model completion of Financial Planning worksheet using the greeting cards as an example. Remind students of group work expectations.

Independent Practice: In table groups, students must calculate the total cost, unit cost, and profits.

Closure: Share answers from worksheet as a class. Determine the appropriate price of the product. Class may have to vote. Then, determine a sales target / goal (ex. 50 units, 100 units, etc.)

Lesson IV: Marketing and Plan

Objective: Students will be able to…

- Identify ways companies market products
- Determine appropriate methods of advertising for class product

Introduction: Remind students of what they have read in "Starting a Business." Part of a successful company is advertising the product. In groups, ask students to generate a short list of how other companies advertise. Groups will share ideas with the class. Compile ideas on the board.

Instruction: Tell students that the company must develop a marketing plan to implement. The class must consider: who is the target market, how to advertise, and when to advertise.

Guided Practice: As a class, determine the target market. There may be more than one such as students and parents. Refer students to the list they created about how other companies advertise. Then, discuss how the school advertises events. Encourage students to think creatively and "outside of the box."

Independent Practice: In table groups, students will develop marketing proposals to give to the marketing team who has final say in the marketing plan. Groups must develop at least one method for advertising.

Closure: Groups share with the class advertising ideas that the group has developed.

Production and Sales

Day One: Students break up into two groups: Production (2/3 of class) and Sales (1/3 of class). Production team will create product while the Sales team determines a selling schedule.

Day Two and Onward: Students sell their product to the target market. Finance team tallies and reports sales for the day. Class keeps track of total sales ($ and unit) on a class chart.

Lesson V: Data Collection and Using Excel

Objective: Students will be able to…

- Calculate mean of a data set
- Graph data sets by hand
- Enter data into an Excel worksheet
- Use Excel Chart wizard to create a computer generated graph

Introduction: Explain to students that companies keep track of data to ensure that they are successful. The easiest way to do this is using a computer program. Brainstorm with students how computers are used in businesses: registers, for staff members, etc. Discuss why computers are used instead of other methods: faster, more convenient, has memory.

Instruction: Explain to students how we can present data: tables and graphs. Show some examples of graphs. Ask students to think of when they have seen or used graphs before. As part of this project, the class will be creating tables and graphs by hand and by computer. Explain the difference between bar graphs and line graphs.

Guided Practice: Using sample data, model how to create a graph by hand using pencil, graph paper, and crayons. Then show students

how to do the same procedure using Excel. Teacher must model on an LCD projector and create a template for students to input data. Teacher will then show students how to create a graph from the data. Remind students of how to calculate the mean of data sets.

Independent Practice: Groups will use the data that has been collected by the class to present: sales (daily and total sales) and # of units sold (daily and total). Groups will create graphs by hand as well as calculate the mean of the data sets. The next step is to take turns, as a group, inputting the data into Excel and create a graph to go along with it.

Closure: After all groups have completed their graphs, review why companies collect data, why people use graphs, and the types of graphs. Discuss the pros and cons of graphing by hand or by computer. What is similar? What is different? Which method did you prefer?

Lesson VI: Project Closure and Data Analysis

Objective: Students will be able to…

- Analyze importance of data
- Evaluate effectiveness of the project

Introduction: Have students do a gallery walk of the graphs they created. Groups will post their graphs and tables on the wall. Students take time to look at how each group chose to present their data.

Discussion: As a class, discuss what students have learned from this project. What have they learned about business? What was difficult about the business? Would you ever want to start your own business? Then, examine the data as a class. What observations can

students make about the data? When did we sell the most? When did we sell the least? Why?

Project Evaluation: Students complete a survey about the project. What they liked or disliked. How they might change the project for next year's class.

Project Evaluation

Groups will be graded on their graphs using an evaluation tool.

Project Element	Possible Points	Points Earned
Was the project completed in a timely manner?	(5 pts)	
Did all group members participate?	(5 pts.)	
Did the group calculate the correct mean?	(5 pts.)	
Are tables accurate?	(15 pts.)	
Are tables presented in a neat and organized manner?	(15 pts.)	
Are graphs accurate?	(15 pts.)	
Are graphs presented in a neat and organized manner?	(15 pts.)	
Did the group use Excel template?	(10 pts.)	
Did the group use Excel to create appropriate graphs?	(10 pts.)	
Are Excel graphs and tables accurate?	(5 pts.)	

Product Brainstorm

Directions: Work with your groups and think of at least 2 possible products. Answer the questions for each possible product.

1. Product:_____

Why would this be a good product?

Why would others want to buy this product?

Who would you sell this to?

What materials do you need to make this product?

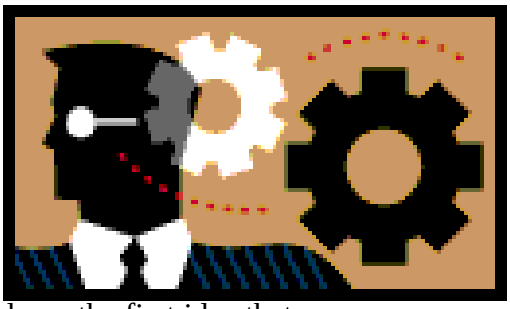
2. Product:_____

Why would this be a good product?

Why would others want to buy this product?

Who would you sell this to?

What materials do you need to make this product?



*Name:*_____

Product Interest Survey

Directions: Complete this survey on your own, try to write down the first idea that you think of. Answers need to be in complete sentences. If you need more space, use the back of this sheet.

What type of activities am I good at:

In my free time I like to:

Some products I like to buy are:

Something that I make, and other people enjoy is:

Other people are always saying they like my:

I suggest that they class sells:

Role Survey
Circle the appropriate number on the scale where 1= I really dislike this and 5= This is my passion!

I enjoy creating

1 2 3 4 5

I enjoy making

1 2 3 4 5

I enjoy drawing
1 2 3 4 5

I enjoy solving problems

1 2 3 4 5

I enjoy working with numbers?

1 2 3 4

Financial Planning

Total Cost of ALL Supplies:

1. _____= $_____
2. _____= $_____
3. _____= $_____
4. _____= $_____
5. _____= $_____
6. _____= $_____
7. _____= $_____

Total Cost = $_____

How many units can you make with all of these supplies? _____=total units

Find the cost per unit: Total Cost ÷ Total Units =_____

How much profit would the class make if we marked up the price by $.10? What is the new price of the product?

How much profit would the class make if we marked up the price by $.20? What is the new price of the product?

How much profit would the class make if we marked up the price by $.50? What is the new price of the product?

How much profit would the class make if we marked up the price by $1.00? What is the new price of the product?

What does your group think the price should be? Do you think other people would buy the product at this price? Is it a reasonable price?