

Sec II IB Math

BUSINESS PROJECT 101 - Why are we doing this??

- Education is a powerful tool that can not only benefit the individual receiving the education, but can be used to improve the lives others.
- Education is not available to many people in the world. (58 million primary school-aged children are not in school. 774 million adults, 15 years and older, cannot read or write.)
- The Business School 101 project is a strong example of IB philosophy in action which has been running for over ten years at St. Thomas High School. This project counts towards your Term 3 situational problem mark as well as your IB report card.
- It ties in strongly with skills needed for the Personal Project that is part of the IB requirements for students in Sec IV and V.

Global Context: Fairness and Development - How are we connected with other communities?

Statement of Inquiry: Students will understand how their relationships and connections can effect change within communities through the inquiry into Fairness & Development.

Inquiry Questions:

- Factual: How can I use math skills in real life situations?
- Conceptual:
 - How can I become a social entrepreneur?
 - Can my knowledge and skills improve the lives of people in developing countries?
- Debatable: Is it possible to create equality for all people?

Background Information:

St. Thomas High School has a direct connection to Haiti. A former St. Thomas teacher, Madame Michaëlle de Verteuil, created a network of twelve mountain schools in Les Abricots, Haiti. Over three thousand Haitian children are able to attend school each year as a result. Madame de Verteuil is an Order of Canada recipient as a result of her tremendous accomplishment over a forty year period.

Five years after the Business Project began, a motion was passed through the Faculty Council and Governing Board of St. Thomas High School in 2010 adopting one of Madame de Verteuil's schools – Ecole Levasyon Eustache. Because of our long term commitment to this school, a second school was built on the site, so that students can receive an education for an extra three years.

The money we raise is sent to Haiti Partage (a registered charity in Montreal) which works directly with Madame de Verteuil. (More information is available at cbrownell.weebly.com.)

Community Service Hours: A donation of profits to Haiti Partage for our adopted school in les Abricots. Since your profits will be going to a charity, **eight** community service hours will be awarded based on the time you took to plan and run the business.

Sec II Business Project - BASIC STEPS

(Please note that different businesses may require additional steps)

***Always refer to the “**Guidelines for Journal Entries**” for a list of deadlines!!

1. **Decide whether you want to work alone or with a partner.** If you choose to work with a partner, make sure to pick someone who is interested in the same type of business, who will be a hard worker, and who will be AVAILABLE when you are. Some students are involved in a number of after school activities and this makes getting together difficult. A maximum of TWO students per business project is allowed. Your partner should NOT see your journal entries. It is possible for partners to have totally different experiences during the business project. Your income/expense sheet may be the same IF you created it together.
2. **Choose your business. (Journal entry #1)** Refer to “Ideas for Sec II Business Project”.
3. **Research.** Do comparison shopping to find best prices. Determine how much you will have to pay. How much do you want to charge?
4. **Initial Survey.** Are people interested in your business? Setting an appropriate price is a crucial decision that can make or break your business. DO NOT ask people what they want to pay. You should be able to provide information to people when conducting the survey. (i.e. I am selling locker organizers for \$8. and show a photo of what it looks like.) Otherwise, people may say that they are interested in your product but not want it once they discover the price or see the item. Do you have enough positive responses to move forward? **(Journal entry #2)**
5. **Final Survey.** Do enough people want your product at the price you want to sell it for? Show a picture of your product and indicate how much you are selling it for. How many people are willing to pay this price? If enough people aren't interested, then it's time to decide if it is the product they don't like or if your price is too high OR maybe both! It is ESSENTIAL that if you do not have strong positive results from your final survey that you pick a new business. There is no point in wasting your time and money on a business that is not going to be successful. **(Journal entry #3)**
6. **Establish a timeline.** Set deadlines for purchasing, selling, etc... **(Journal entry #4)**
7. **Decide on an initial investment and buy your product.** If you are ordering online, you have to allow for the time needed for shipping. (Ebay, Everbuying, Aliexpress, cndirect, ...) Check the estimated shipping time for the site you are using. If you are making your product, you will need to start early for some products (i.e. making bracelets) or just a day or two ahead (cupcakes). How much money will you need to get your business started? Typically students invest \$10 - \$15 each. Some students invest more due to the initial cost of setting up the business. Make sure to discuss this amount with your parents. Some students run their business more than once by reinvesting their money to make a greater total profit. **It is important to understand that you get back the money you invested.** The profit is what goes to our adopted school in Haiti. You may reinvest your money to make a greater profit. For example, you invested \$20 buying socks and sold out. You could reinvest the original \$20 to buy more socks to sell.

8. **Decide WHEN and WHERE you are going to sell your product.** Sometimes the type of product relates to when you would sell it. For example, you could sell Christmas wrapping paper in November and December. Thinking of a wide variety of places to sell your products is important.
9. **Advertising.** Advertising is incredibly important and can directly impact your sales. Advertising could be posters you have by your sales table or up in the classroom, flyers you put up in the hallways (not for food) or in your neighbourhood (i.e. mailboxes), business cards, a t-shirt identifying your business, or social media. (See Business 101 item 10 for more info.). It is important to advertise **AHEAD** of your planned sales date to encourage people to bring money. **Make sure to provide information about our Haiti project on any advertising as this will help to increase sales.** Customers are often willing to spend more if they know the profits are going to a good cause and may even donate money without buying something if you have done an effective job of telling them about Madame de Verteuil and explaining how we are helping educate children in Haiti.
10. **Set up a cash float.** You need to be able to make change when people buy your item. Always have more change than you think you will need. Make sure to write down the amount of change you started with so you know how much money you made! Make sure that your float is appropriate for the price of your product.
11. **Record all expenses.** You must include an itemized list of your expenses.
12. **Record all income.** You must include an itemized list of your income
13. **Make your financial statement.** Refer to “**Required Elements for the Financial Statement**” for a list of what is required in the financial statement.
14. **All projects are due APRIL 30TH, 2018.** Students who have completed the project are encouraged to hand it in before this date. Please have your FINANCIAL STATEMENT AND PROFIT ready to hand in by this date as well. Due to the number of students involved, students are encouraged to hand in a **cheque for the amount of their profit made out to St. Thomas High School** which will be put into our Haiti account and forwarded to Haiti Partage.

For students working with a partner, only one student will hand in the cheque to their teacher. The other student will indicate the name of their partner and the name of their partner’s teacher so this can be verified.

If you are unable to hand in a cheque, please hand in the cash in as many BILLS as possible. Given the number of students involved, we cannot accept bags of coins.

Ex: If you are handing in \$92.50...

FOUR x \$20	= \$80
ONE x \$10	= \$10
ONE x toonie	= \$2
TWO x quarters.	= \$0.50

Ideas for Sec II Business Project

Here are suggestions from previous successful businesses that may inspire you. **Make sure to do your research first.** Can you make a profit of what you want to sell/do? Do you have enough customers who want your product/service?

Home Made Items

- Jewelry – bracelets, necklaces
- Tie-Dyed t-shirts or socks
- Emoji pillows **One of the top 5 business from 2015/2016
- Flavoured popcorn
- Fluffy short socks
- Baking (cupcakes, cookies, brownies, Rice Krispie squares)
- Custom designed t-shirts (see Phantomprints on Facebook – currently over \$1,500 profit)
- Holiday baking - taking orders ahead of time by the dozen You could sell to staff, neighbours, parent’s work...
- Decorated picture frames
- Greeting cards (birthday, holiday)
- Sushi
- Hot chocolate (made at home with giant thermos brought to school, sold in class)

Make sure to keep track of the ingredient costs compared to how many you made. You have to be able to determine the value of ONE item so that you are able to calculate the profit per item when you sell it.

Decorated cookies (i.e: snowman design) and fancy cupcakes (cookie monster) sell for much more than regular items. For example, a normal cookie might sell for \$.50 but a fancy decorated one could sell for \$1.00.

Remember that food/drink items can ONLY be sold in class with prior arrangement with your teacher. Your project will receive a zero if you sell food in the cafeteria or hallways. Please also be aware that you are not allowed to sell candy at school. Think about where else you could sell food items (or any product) outside of school to increase your sales. (i.e. sporting events, parent’s work, team practises, community bazaars, ...)

Purchased Items Resold

- Small bags of nuts (purchased in bulk from Costco) **Top business from 2015/1016
- Jewellery (many different types of bracelets and necklaces)
- Cordless mouse for computer
- Gift wrap
- Small holiday gift baskets with tea, cookies, candy, candle, and/or lotion
- Key chains/Backpack decorations
- Magnets (theme)
- Cell Phone Covers
- Flavoured vinegar (sounds odd, but this was a huge hit with parents)
- Products for lockers (magnets, mirrors, shelving units)
- Coloured/Designed “Duck” tape
- St. Thomas Supports Haiti pens
- Picture Frames
- Candles
- Plants (growing flowers from seed/bulbs)
- Hand-Painted Christmas ornaments

Services

- Walking dogs (VERY successful business, \$5 per half hour, easy to make hundreds of dollars over six months)
- Face Painting (VERY successful business that the students kept running after Sec II)
- Scanning – old photos, student art (very successful business)
- Raking leaves
- Shoveling snow
- Tutoring (musical instrument, academic)
- Locker cleaning/organizing
- Birthday party planning for young children

**You MUST have some kind of expense for your business (i.e. making business cards, buying bags for leaves, buying “poop” bags for dog walking, renting a shovel)

NOTE: Collecting pop cans is not a business. There is no money invested.

NOTE: Since many students already babysit on a regular basis, this does not count as a business.

NOTE: If you are ordering items online, be sure to check the seller’s ratings, cost of shipping, and time needed to ship items.

NOTE: Don’t just use Ebay. You should check out sites like Aliexpress, Everbuying, cndirect, ...

******Some students will have opportunities to showcase their businesses at Open House as well as Parent-Teacher interviews in November and February (first-come first-served basis).*****

Guidelines for Journal Entries

NOTE: All journal entries should be done in ManageBac

- Your first entry should discuss your idea for a Business Project and why you are interested in it and discuss how this project is related to the **Global Context of Fairness & Development**.(by October 13th)
- Your second entry should include a rough draught of the Survey you created and reasoning for the questions that you included (by October 20th)
- Your third entry should discuss the results of your survey and any modifications to your Business Project that were driven by these results (by October 27th)
- Your fourth entry should be a plan/timeline (by November 10th)
- **Students who wish to participate in Open House (October 18th) should have the first four entries done and the timeline approved early (by October 13th).**

Your 5th through 9th entries should include thoughts on how you are keeping to your timeline, how well the project is progressing, any problems you have encountered and how you overcame them, any decisions you had to make and your reasons for those decisions. If you are working with a partner, your journal entries may include comments about how the partnership is going. Partners must have totally separate journals. You may also include sample calculations based on what you learned in class. Refer to the **learner profile** terms as well as the **Approaches to Learning** while making your entries.

- 5th entry by November 30th
- 6th entry by December 15th
- 7th entry by January 19th
- 8th entry by February 23rd
- 9th entry by March 23rd

If you wish to include more entries, feel free to do so. The above are MINIMUM requirements. **If you do more than 10 journal entries, please put a *** next to the ones you want your teacher to evaluate. These entries must include the first four and the final entry.**

OVER (final entry) ---->

The **final entry** (DUE April 30th) should be a reflection summarizing how the project went, the impact the project has had upon you, the strengths and weaknesses of your project, include thoughts about what you would do differently if you could go back and start all over again and finally, **links to the Global Context and Inquiry Question**.

The following is a list of questions you may wish to address in your final entry (reflection):

- Why did you pick the activity you did?
- What were your expectations at the start?
- What did you learn about planning and carrying out a long term activity?
- Discuss **your use of time**.
- Talk about your use of **advertising**.
- Which Approaches to Learning Skills were most useful?
- Which ones do you have to work on?
- What did you learn about running a business?
- What did you learn about yourself?
- What worked well and what didn't work? Give examples of problems you faced and how you dealt with them.
- How did this project affect people around you?
- Discuss your thoughts about working alone or with a partner.
- How do you feel about the amount of profit you made?
- What would you change if you were running this business again?
- Could you see yourself running a business to make money for something you wanted?

STUDENT'S NAME: _____

**Criterion A: Knowledge and Understanding
(Planning & Running the Business)**

Level	Descriptor
0	The student did not reach a standard described by any of the descriptors below.
1-2	The student showed little attempt to break the large task into the mandated steps. Little problem-solving was evident when there were difficulties with the plan.
3	The student showed some attempt to use the steps. Little or no problem solving was evident when there were difficulties with the plan.
4-5	The student made a good attempt to document the progress of planning and running the business. Journal entries were dated. Most of the steps were used in running the business. Some problem-solving was evident when there were difficulties with the plan.
6-7	The student did a very good job of documenting the progress of planning and running the business. Journal entries were dated and the student identified almost all the steps to run his/her business. The student used good problem-solving skills when there were difficulties with the plan. An explanation was included about why the problem happened and how it was resolved.
8	The student clearly divided the large task into well-defined, manageable steps with dates. The student did an exemplary job of planning and running the business. It was obvious that the student understood all the requirements involved with this long term project and used the steps outlined. Problems were identified and resolved with an explanation. Adjustments were made, as required, to make the business more efficient and successful financially.

Criterion C: Communication (Financial Statement)

Students use appropriate mathematical language and different forms of representation when communicating mathematical ideas, reasoning and findings.

Level	Descriptor
0	The student did not reach a standard described by any of the descriptors below.
1-2	The student showed little attempt to calculate the total expenses, income and profit.
3	The student showed some attempt to calculate the total expenses, income, and profit.
4-5	The student showed a good attempt to calculate the total expenses, income, and profit. There was some attempt to calculate the unit price of each item.
6-7	The student did a very good job of calculating the total expenses, income, and profit. Expenses are itemized. The students calculated the unit price and profit per item. An attempt was made to calculate the percent profit. The student may have made an attempt to identify how much of the income was from donations and may have identified which items used in the business were free.
8	The student did an exemplary job of demonstrating a thorough understanding of the financial aspects of the business project. All expenses were itemized and if any items used were free, then their worth was identified. All income was itemized. The student was able to determine how much of the total profit was based on donations. The cost per item was clearly identified as well as the profit per item. The student calculated the percent profit per item as well as for the business. (These two values may be different if the business received donations as part of the income). All calculations were correct and equations provided.

**Criterion D: Applying Math in Real World Situation
(Reflection)**

Students transfer theoretical mathematical knowledge into real-world situations and apply appropriate problem-solving strategies, draw valid conclusions and reflect upon their results.

Note: **ATL Skills:** Self Management, Social, Communication, Research, Thinking. **Learner Profile:** Inquirers, Knowledgeable, Thinkers, Communicators, Principled, Open-minded, Caring, Risk-takers, Balanced, Reflective.

Level	Descriptor
0	The student did not reach a standard described by any of the descriptors below.
1-2	The student showed little evidence of understanding the results of the project. Little analysis of the strengths and weaknesses of the business was evident. The student showed little personal insight about what he/she learned throughout this project.
3	The student showed some evidence of understanding the results of the project. Some analysis of the strengths and weaknesses of the business was evident. The student showed some personal insight about what he/she learned throughout this project.
4-5	The student showed good evidence of understanding the results of the project. The strengths and weaknesses of the business were discussed, including whether or not the student made the average goal of \$50 per person. There was some attempt made to link the reflection to the Statement of Inquiry as well as the ATL and Learner Attributes. The student showed sufficient personal insight about what he/she learned throughout this project.
6-7	The student showed thorough personal insight about what he/she learned from the results of this project giving examples of strengths and weaknesses involved with planning and running the business. Problem solving strategies were discussed. Some reference was made to how the student could have improved the project and whether his/her goal was reached. Specific examples were given about some ATL and Learner Attributes. The reflection may have included reference to the Statement of Inquiry related to this project.
8	The student did an exemplary job of analyzing the results of the project. Strengths and weakness related to planning and running the business were clearly analyzed. Problems were identified and solutions proposed. Examples were given about how the student could improve the business if it were run again. There was an exemplary discussion about personal insights throughout this project. The reflection included three examples of ATL skills used and three examples of Learner Profiles used. There was reference to the Statement of Inquiry related to this project.

24/24 - 100%	23 - 98%	22 - 95%	21 - 90%
20 - 88%			
19 - 85%	18 - 80%	17 - 78%	16 - 75%
15 - 70%			
14 - 68%	13 - 65%	12 - 60%	11 - 55%
10 - 53%			
9 - 50%	8 - 48%	7 - 45%	6 - 40%
5 - 35%			

Required Elements for the Financial Statement:

You may organize your information in a spreadsheet, but this is not mandatory as long as you include all of these required elements in your financial statement. Don't forget to show all calculations involved with each required element. The financial statement is your chance to show you understand the math involved with your business.

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1. Expenses -- should be itemized with a total clearly stated

2. If you received anything for free that you needed to create your product you should mention this and calculate the approximate value, but it does not need to be included in your expenses. i.e. We needed curling ribbon to tie up our packages which we already had. We used about \$1.50 worth of curling ribbon.

3. Income - should be itemized (i.e. what sold on different dates) with a total clearly stated. Identify the amount of donations you received (i.e. You sold 8 bracelets for \$3 each (\$24), but ended up with \$30. That means you made \$6 in donations at that sale.)

4. Calculate the unit price calculated based on what YOU paid. Students doing baking will have to calculate total cost of ingredients divided by the number of items baked. Show your calculations.

i.e. It cost \$4.49 to make 24 brownies. ($\$4.49 \div 24 = \$.19$ per brownie unit price)

i.e. \$17.80 for 50 bracelets. ($\$17.80 \div 50 = \$.36$ unit price)

5. Sale price should be identified. How much did you SELL each item for?

i.e. Brownies were \$.75 each Bracelets were \$2.00 each

6. Calculate the profit per item. (sale price) - (unit price) = profit per item

i.e. Brownies \$.75 - \$.19 = \$.56 profit per brownie

i.e. Bracelets - \$2.00 - \$.36 = \$1.64 profit per bracelet

7. Identify the number of items sold. If you had items left over, identify how many and what you did with them.

8. Calculate the percent profit per item.

i.e. for the above bracelet example \$1.64 is the change in value \$.36 is the original cost. My percent profit would be 456% per bracelet. ($1.64 \text{ divided by } .36 \times 100 = 456$)

9. Calculate the TOTAL PROFIT for your business. Total sales - total expenses = total profit.

i.e. \$17.80 for bracelets + 3.00 advertising = \$20.80 total expenses \$2.00 X 50 = \$100 total sales
 $\$100 - \$20.80 = \$79.20$ total profit

10. Calculate the percent profit for the business using the total income and expenses.

This will be different than the percent profit per item if you had donations or had additional expenses (i.e. advertising, packaging, shipping). (Total REVENUE - Total EXPENSES) divided by EXPENSES * 100

Business Plan Proposal

Name: _____

Due: _____

1. Who are you working with? _____
(note: they must be in your Math class)

Why did you choose this partner? _____

Do you expect this partnership to go well? _____

2. What are you selling/what is your business?

Details! DESCRIBE your product/business

Why did you choose this? How does it interest you?

3. What is your estimated selling price? _____

WHY did you choose this price?

What research have you done before choosing this price?

Where will you get this product and for how much? Are you making it?

How much profit do you expect to make?

4. Where will you be selling your product?

Who is your target market? Why?

5. Advertising

When? _____

Where? _____

Why? _____

How? _____