

## Teacher Overview

**D**uring Back of the Napkin, students learn to use quick math, based on their knowledge of costs and prices, to assess an opportunity and decide if it is “worth it” to pursue. There are legends of businesses and big ideas that got their start on the back of a napkin. Bad ideas and unfruitful ventures have also been avoided thanks to the back of a simple napkin. When an entrepreneur wants to capture an idea in the moment, she can grab the nearest piece of paper and begin to sketch it out.

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**THERE ARE LEGENDS OF BUSINESSES AND BIG IDEAS THAT GOT THEIR START ON THE BACK OF A NAPKIN.**

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This can be done in groups or as individuals in a stand-alone module or as part of a sequence on business finance. The “Back of the Napkin” is a powerful tool to help students engage with self-interest and subjective value, motivating them to action throughout their life.

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## When to Use This Lesson

Back of the Napkin follows Dirt & Worms as part of our YE Core roadmap. This activity can be used as an introduction to COGS. If you are using it as an introduction to COGS leading up to Market Day, it is okay to use assumptions about cost and price. Students do not need to know their Cost of Goods Sold (COGS) to be successful in this activity.

This activity can be repeated after exploring COGS and Price and Profit, as well. Instruct your students to verify their assumptions and re-do their Back of the Napkin to make adjustments as they gain more accurate knowledge for the cost of goods sold.

**Time: 50 minutes**



## BEFORE CLASS PREPARATION

- > Review entire activity guide.
- > Collect necessary materials.
- > Set up classroom to accommodate working in Market Day groups.
- > **Protip:** It is helpful to identify a couple groups that already have an idea of what they want to sell.

## LEARNING OBJECTIVES

- > Business Finance 1b, 1d, 1e, 1h

## KEY TERMS

- > Pricing & Profit, Goal Setting, Break-Even

## FOUNDATIONAL VALUES

- > Sound Judgment
- > Opportunity
- > Win-Win Focus

## MATERIALS

- > Smartboard/Whiteboard/Chart paper
- > Dry erase marker/marker
- > Calculator
- > Blank notebook paper
- > Writing utensil

## ACTIVITY INTRODUCTION

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- > For any opportunity they encounter, students should stop and consider if they are making a sound judgment by calculating whether the opportunity is worth the effort in terms of their scarce resources.
- > Tell students that their YE class offers a rare opportunity for them to make real profit that they get to keep for themselves. As such, they should think about how much profit they want to make. Once they have a number in mind, they then ask themselves what service or goods they want to sell as they attempt to reach that profit goal. As a final check, they consider the cost in terms of time and effort, and challenge whether this opportunity is "worth it"; that is, whether they can realistically achieve their profit goals.

## ACTIVITY DIRECTIONS

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- > Have students sit with their Market Day groups (understanding that some students are in a group of one).
- > Choose a Market Day group or ask for a volunteer.
- > Ask group/volunteer how much profit they want to make at Market Day.
- > If the Market Day group is comprised of more than one student, make sure they understand they need to determine the group's profit. If their answer was profit per person, calculate the total amount of profit for the group and write it at the top of the board.
- > If they say they only want to make enough to pay back their loan, remind them that this class is their opportunity to make actual profit. Encourage them to set a higher goal.
  - Breaking-even is working for free, essentially. Ask your students if they would be willing to work for free in any other situation.
- > While pointing at the profit goal you just wrote on the board, emphasize to students that you will hold them to this. Their goal should remain THE goal, even as things change in the market (and this will change in the market). Their goal should remain the same.
- > Now that you have recorded their profit goal, ask what it is they will be selling and write that at the top of the board next to the profit goal. For this explanation, we will refer to it as a "widget."
- > Some groups will be just one kind of widget (i.e, hamburgers). Some groups will be selling different kinds of widgets (hamburgers, drinks, and a dessert). For this example, ask them which item they think will be the most profitable for their group.
  - For groups selling multiple items, this exercise is valuable in helping them to realize the best way to reach their goal is perhaps to specialize in one or two items and maximize their efforts around those.
- > Ask the group for how much they think they can sell each "widget". Once they settle on an assumption for this number, identify it as the "price of one unit". Write this number on the board and label it "Price of One Unit".
- > Ask the group how much they think it will cost them to buy one "widget". This is the Cost of Goods Sold (COGS) for One Unit. Write this number on the board and label it "Cost of Goods Sold per Unit" or "COGS per Unit".
- > Tell the group we need to isolate the gross profit of one unit of sale. To do that, we subtract the COGS of the "widget" from the price of the "widget". Write the result on the board below all of the other numbers.

## ACTIVITY DIRECTIONS CON'T

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- > **Protip:** This number, gross profit, can be used to calculate everything from number of units required to reach profit goal to startup funding needs (Market Day loan request) to production timeline.
- > Now ask the group, at this gross profit per unit, how many units must you sell to reach your profit goal?
  - To calculate, you must divide the profit goal by the gross profit per unit. The result is the Units Sold goal of “widgets” they must to sell to reach their profit goal. Write this number on the board and label.
- > Ask the group, do you think you can sell that many “widgets”?
  - Generally, students will find they won’t be able to sell that many units in the amount of time available. In some cases, however, you may find the profit goal is too low and students can increase their goal.
- > If the group doesn’t think they can sell enough units to reach their goal, ask them to brainstorm solutions to the problem they are now facing. You want to help them realize they have options other than lowering their profit goal.
  - Can they get the “widget” at a lower cost? They may need to purchase more in bulk to get them at a lower per unit cost.
  - Can they charge their customer a higher price for the “widget”? Will the customer buy the “widget” if they charge them more?
  - If they answer yes to either or both questions, redo the calculations with their new numbers.
  - If they answer no or maybe to either or both questions, challenge them to do more research and find out. Then redo calculations.
- > Once the group has settled on numbers for price, cost of goods sold, and volume, ask how much money they would need in order purchase their Units Sold goal.
- > Multiply “COGS per Unit” by the “Units Sold goal” to determine the total Cost of Goods. This Cost of Goods sold represents their loan request amount (assuming they will borrow from YE to fund their market day)
- > This concludes one demonstration round of how to do back of the napkin. At this point you can do another group for demonstration or have them break into their groups to complete on their own.

## ACTIVITY DEBRIEF

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- > How did you feel when you saw how many units it was going to take to meet your goal?
- > How did we use economic calculations to make a better decision about our plan?
- > How does this approach to an opportunity make sure it is a win for you and your customers?
- > Did you or your group use sound judgment in terms of your form of ownership?
- > Why is using sound judgment important when selecting the form of ownership for your business?
- > Did you or your group use sound judgment in considering your comparative advantage?
- > Describe how you or your group used sound judgment in in setting your profit goal?
- > How does using sound judgment correlate to your decision-making process when pricing your products or services?
- > How important is being willing to pivot as you work your way through the Back of the Napkin activity?
- > Is the willingness to pivot a way the entrepreneur can demonstrate sound judgment?

## ACTIVITY DEBRIEF CON'T

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- > How does the use of sound judgment correlate to your decision making process when selecting goods for resale and costing those goods? Is buying cheap the key element to consider making those costing decisions?
- > When you think about the following, how do they relate to making your own opportunities?
  - deciding on a form of business ownership
  - selecting what to sell
  - setting sales goals
  - considering the amount of time it takes to sell the number of units needed to meet your profit goal
- > In this activity what opportunities exist for you to make better more informed decisions by gathering knowledge?
- > As you were deciding on what to sell at Market Day, what opportunities could you take advantage of to make the best decisions?
- > When doing this activity what opportunities do you have to create win-win?
- > Was creating win-win a part of your mindset as you worked through the Back of the Napkin activity?
- > Is having a win-win focus important to this activity? Discuss.

### NOTES

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