Title: T-Shirt Business Expansion: Lesson 1 of 3 - The Hoodie Challenge

Series: T-Shirt Business Expansion Project

Focus: Applying core business math to product line expansion and comparative analysis.

Materials Needed

- Pencil and paper
- Calculator
- Completed "Future Growth Plan" worksheet (from the previous lesson)
- New "Product Analysis" worksheet (details provided below)

Learning Objectives

Building on your CEO experience of calculating final profit and making investments, by the end of this lesson, you will be able to:

- Apply established formulas to calculate the unit cost and profit margin for a new product.
- Compare the profitability and break-even points of two different products.
- Analyze the trade-offs between high-cost, high-profit items and low-cost, low-profit items.
- Make a data-driven decision about which product to prioritize for business growth.

Lesson Structure

I. Introduction (5-10 minutes)

Review of Previous Lesson

"Welcome back, CEO! In our last meeting, you analyzed your business's monthly performance and made a crucial decision to invest your profits. Pull out your 'Future Growth Plan' worksheet. What investment did you choose: the 'Marketing Blitz' or the 'Better Supplier Deal'?"

(Allow learner to share their choice.)

"Excellent. And how did that investment change your business for the better? Did it lower your break-even point or did you decide it would bring in more customers? You successfully used your profits to strengthen your company."

Hook & Engagement

"Your t-shirt business is running more efficiently thanks to your smart investment. Business is steady. But a great CEO never stands still. You've been getting requests from customers: 'We love your designs, but what about something for colder weather?' An opportunity has appeared: it's time to consider expanding your product line!"

Setting the Stage

"Today, we're going to analyze a brand-new product: a hoodie. It's more expensive to make, but you can also sell it for a much higher price. Your challenge is to use the exact same math skills you've already mastered—calculating costs, profit, and break-even points—to decide if this new product is a golden opportunity or a risky distraction. Let's see if you can spot the best path to profit."

II. Body: Product Line Expansion (25-30 minutes)

Part 1: The "I Do" - Analyzing a New Opportunity (10 mins)

The educator explains and models how to calculate the profit potential of the new hoodie.

"Let's look at the numbers for this potential new product. A quality blank hoodie costs more, and the printing is more complex."

(Educator writes out the calculation on a board or paper.)

- **New Product: Premium Hoodie**
- Selling Price: $40.00
- Cost of blank hoodie: $18.00
- Cost of printing: $4.50

Step 1: Calculate the Unit Cost (Variable Cost). This is the total cost to make one hoodie.

$18.00 (hoodie) + $4.50 (printing) = $22.50 per hoodie.

Step 2: Calculate the Profit per Shirt (Unit Profit). This is what you make on each sale.

$40.00 (selling price) - $22.50 (unit cost) = $17.50 profit per hoodie.

"Wow, $17.50 profit on one item! That's a lot more than our t-shirts. But remember, a bigger profit doesn't automatically mean it's a better business. We still have to cover our fixed costs. Let's see how many we'd need to sell just to break even, using my old fixed costs of $20."

Step 3: Calculate the Break-Even Point.

Formula: Fixed Costs ÷ Profit per Unit = Break-Even Point

$20.00 ÷ $17.50 = 1.14. Since we can't sell 0.14 of a hoodie, we have to sell 2 hoodies to be profitable.

Formative Assessment (Quick Check): "If the cost of the blank hoodie went up to $20, what would happen to our profit per hoodie? Would we need to sell more or fewer hoodies to break even?" (Answer: The profit would go down, so we'd have to sell more to break even.)

Part 2: The "We Do" - Your Side-by-Side Comparison (5 mins)

The learner and educator compare the learner's improved t-shirt with the new hoodie.

"Now, let's use your numbers. Find your 'Future Growth Plan' worksheet. What are your final numbers for your t-shirt after your investment? Let's write them down."

- Your T-Shirt Profit per Shirt: $_____
- Your Total Monthly Fixed Costs: $_____

"Great. Now let's put the hoodie numbers right next to them. The hoodie's profit is $17.50. Which product makes you more money on a single sale? (The hoodie). Now, let's figure out which one is easier to break even with. Together, let's calculate the break-even point for your t-shirt using your numbers."

(Guide the learner to calculate: Your Fixed Costs ÷ Your T-Shirt Profit = T-Shirt Break-Even Point.)

"Now we have the full picture: one product with lower profit that's easier to break even with, and one with higher profit that might be harder to sell. It's time for you to make the call."

Part 3: The "You Do" - The Product Priority Decision (15 mins)

The learner applies the concepts independently using the "Product Analysis" worksheet.

Worksheet: Product Analysis

Company Name: _____

Your business is considering adding a new premium hoodie to your store. You only have enough resources to heavily market ONE product next month. Use your data to decide which product is the smarter bet.

Part 1: Your Current Product Data (from last lesson)

- Product Name: T-Shirt
- My Improved Profit per Unit: $_____
- My Monthly Fixed Costs: $_____
- **My Break-Even Point (T-Shirt):** (Fixed Costs ÷ Profit per Unit) = _____ shirts

Part 2: New Product Data

- Product Name: Hoodie
- Selling Price: $40.00
- Unit Cost: $22.50
- **Profit per Unit:** (Price - Unit Cost) = $_____
- **Break-Even Point (Hoodie):** (My Fixed Costs ÷ Profit per Unit) = _____ hoodies

Part 3: Make Your CEO Decision

1. Which product has a higher profit margin per item? _____
2. Which product requires you to sell FEWER items to cover your monthly fixed costs and break even? _____
3. **My Decision:** For next month, I will focus on marketing the (T-Shirt / Hoodie).
4. **Justify Your Decision:** I chose this product because... (Use the data! Is it better to make more money per sale, or is it safer to have a lower break-even point? Think about which product might be easier to sell to customers.)
   _____
   _____

III. Conclusion (5 minutes)

Share and Recap

The learner shares their "Product Analysis" worksheet, explaining their calculations and, most importantly, their final decision and the business reasoning behind it.

"That is a fantastic analysis. You didn't just pick the product with the biggest profit number; you compared how each product would affect your entire business. Today, we built directly on your previous success by using the exact same financial tools to evaluate a brand new opportunity. You've now

learned how to compare different products to find the most profitable path forward."

Reinforce the Progression

"In the last series, you mastered running a single-product business. Now, you've taken the first and most critical step in expansion: analyzing if a new product is even worth it. You're thinking like a true strategist, weighing risk and reward. This is a skill used by every major company, from Apple deciding between a new iPhone model to a local bakery deciding whether to add cookies to their menu. In our next lesson, we'll tackle the next big challenge: how to manage inventory when you're selling BOTH products at the same time."

Assessment & Success Criteria

- **Formative:** The learner correctly answers the quick-check question and participates in the "We Do" comparison, identifying which product has the higher profit and calculating the t-shirt's break-even point.
- **Summative:** The completed "Product Analysis" worksheet is the primary assessment.
    - **Success looks like:** The learner correctly calculates the hoodie's profit and the break-even points for both products. They make a clear choice and provide a logical justification that references concepts like "higher profit," "easier to break even," or the potential difficulty of selling a more expensive item.

Differentiation & Adaptability

- **Scaffolding for Support:**
    - Pre-fill the "Profit per Unit" for the hoodie, so the learner only needs to calculate the break-even points.
    - Provide sentence starters for the justification, such as: "I chose the hoodie because making a profit of $____ per sale is more important than..." or "I chose the t-shirt because needing to sell only ____ items to break even feels safer."
- **Extension for Challenge:**
    - "Adding hoodies requires you to use a bigger, more expensive shipping box, which adds $1.50 to the variable cost of EVERY product you sell (both t-shirts and hoodies). Recalculate all of your profit margins and break-even points. Does this new information change your final decision? Why?"
- **Adaptability for Other Contexts:** This lesson can be used for any scenario involving product or service expansion. In a workplace, it could be "Analyzing a New Service Tier." Employees would compare the profitability of their current "Standard Package" against a proposed "Premium Package," calculating the staffing costs (variable costs) and required sales to justify the new offering.