



Biz Venture

Lesson 4: Price It Right

Grade level: 6-8

Learning objectives:

Participants will learn to calculate the unit cost of a product to figure price per unit.

Codes for TEKS:

Mathematics
Economics
Business Education

Codes for 40

Developmental Assets:

Interpersonal Competence
Responsibility
Planning and Decision Making

National Education

Standards:

Mathematics

Life Skills Model:

Marketable skills
Problem solving
Decision making
Learning to learn

Time required:

45 minutes

Activities 1 through 3 are required to introduce the topic and support skill development.

The activities can be spread out over several days to fit the program schedule.

Equipment/materials:

Pencils and calculators
Two large plastic mixing bowls
Two sets of plastic measuring cups (dry measure)
Two sets of plastic measuring spoons
Two large spoons
Small Zip-Loc® bags
Paper towels
Plastic gloves
Samples of several brands of trail mix

Optional food supplies:

See ingredients on Biz Venture Trail Mix Skill Builder handout. Each group of four or five participants will need enough ingredients to make one recipe.

Handouts/support materials:

Biz Venture Trail Mix Skill Builder and Answer Key
Market Survey
Price It Right Skill Builder

Today we're going to learn how to choose the right price for a product in order to make a profit. The money that comes into your business when you sell something is called revenue. But just bringing in revenue does not mean your business will make a profit. Your revenue has to cover all your expenses. Only what is left over after expenses will be profit.

Deciding what price to charge is one of the most important decisions a business owner makes. Charging too much or too little can cause a business to fail. What can happen if the price of a product or service is too low?

Allow participants to answer. *You lose money with each sale and will go out of business.*

What can happen if the price is too high?

Allow participants to answer. *The competition will beat your price and you'll lose customers. You will go out of business.*

The price charged for any product or service must be carefully calculated. The price needs to cover the cost of producing the product or providing the service and yield some profit for the business. The cost of production can include overhead such as rent, utilities and labor, as well as the cost of the raw materials used to make a product.

Divide the group into several smaller groups and give one sample of trail mix to each group. If the prices are not on the packages, put price stickers on them.

One way to compare the value of different products is to compare their unit prices. With a food product, the unit price is the price of one serving. Let's look at these different brands of trail mix. On each package you'll see a label that tells how many servings are in the package and the size of one serving. Each package also shows the price of the package. To get the unit price—or the price of one serving—you divide the number of servings in the bag into the price of the bag. Do that now with each of the samples you have.

Do an example calculation on a chalkboard or flip chart. Then allow time for the participants to complete the calculation. Ask each group to report the unit price of its product and write those unit prices on the board or flip chart.

This exercise gives us an idea of the different prices we might pay for a serving of trail mix. If you were an entrepreneur selling a similar product, you would

want to know what your competitors were charging so you could make sure your product has a competitive price. If different products have different size servings, that affects the price per serving. To get comparable prices for all products, regardless of the serving sizes listed on the packages, you can divide the number of ounces in a package into the price of the package. As a consumer, you should do that to be sure you're choosing the product with the best price. Then the unit price would be the price per ounce.

Remember, the unit price is the price charged for one unit of the product.

Before a business can decide what the unit price of its product will be, it has to determine what it costs to make the product. We do that by calculating the unit cost. The unit cost is the cost of making one unit of the product. A unit can be one serving, one ounce, or some other measure.

We're going to do an activity to help us learn about calculating unit cost.

Activity 1: Biz Venture Trail Mix Skill Builder

Preparation:

Set out the trail mix ingredients in large bowls or 1-gallon plastic bags, marked with the names of the ingredients and the amount of each ingredient needed to make one recipe. Also set out the measuring utensils, paper towels and plastic gloves. Set up a work area where participants will place 1-cup measures of trail mix into plastic bags.

We're going to pretend that we're in the business of making trail mix. Our product is called Biz Venture Trail Mix. We have competition from a product called Tom's Trail Mix. First we will figure out what it costs us to make our Biz Venture Trail Mix—the unit cost—and how much we need to charge for it—the unit price—in order to make a profit. Later on we'll compare our price with the price of Tom's Trail Mix to see if we are competitive.

Divide participants into groups of four or five. Give each group a copy of the handout Biz Venture Trail Mix Skill Builder, along with pencils and a calculator. Explain that each group will make one recipe of trail mix and do the calculations on the handout as you lead them through the exercise. If it's not possible to provide ingredients for making the trail mix, do the activity using the information on the handout. Remind participants that entrepreneurs who make or serve food must follow food safety regulations such as washing their hands and wearing plastic gloves to prevent the spread of foodborne illnesses.

Tell participants that the amount of each ingredient they will need is shown on the handout and marked on the ingredient containers. Each team will measure the proper amount of each ingredient into a bowl, mix the ingredients with a large spoon, and then divide the trail mix recipe into 1-cup portions and place them in plastic bags. When all have finished, lead them in the following calculations.

Businesses usually buy the materials they need to make their products in bulk. If you were in the food business you would buy your ingredients in bulk, or large quantities, and sell them to consumers in smaller quantities. Look at your handout and you will see the ingredients for our trail mix, the cost of one package of the ingredient, and the number of ounces and servings in that package.

Our first task is to figure out the unit cost of our trail mix. To do that we could divide the cost of a package by the number of servings or the number of ounces in the package. We want to know the unit cost per serving, so we'll divide the cost by the number of servings.

The first ingredient is peanuts, which cost \$3.80 for a package that contains 30 servings. Divide \$3.80 by 30, and the unit cost of the peanuts for our trail mix is \$0.12.

Now calculate the unit cost of the other ingredients.

Allow time for groups to finish. Then ask the participants to call out the unit costs of the ingredients. Refer to the answer key for correct answers.

The next step is to add up all the individual unit costs to get the total unit cost for one recipe of our trail mix. What would that be?

Allow time for groups to respond. Refer to the answer key for the correct answer.

One recipe costs \$0.80.

How many cups did our recipe make?

Allow participants to answer. If all groups measured ingredients accurately there should be little variation.

Our recipe should have made about 5 cups of trail mix. If we consider 1 cup to be the size of one serving, how many servings did we make with one recipe?

Allow participants to answer.

We should have five servings (5 cups) of trail mix. Now let's calculate the unit cost per serving. If one recipe cost \$.80 and we got five servings from it, what did one serving cost?

Allow participants to answer.

Our unit cost per serving is \$0.16.

Besides the cost of the ingredients, a business has other expenses such as rent, utilities, equipment, insurance and labor. To cover those expenses, too, one rule of thumb is to double the cost of the ingredients (or other materials). If we do that, what will be our unit cost per serving?

Allow participants to answer.

The unit cost will be \$0.32. We know that if we charge \$0.32 for a 1-cup bag of Biz Venture Trail Mix we should break even. That means we'll get back exactly the amount of money we spent but we won't make any profit. To make a profit, we'll have to charge more than \$0.32 per bag—but how much more?

Here's where we need to do some market research. We need to know what our competitors are charging for similar products. Remember I said that our competitor is Tom's Trail Mix. While we don't know what Tom's unit cost per serving is (because we don't know the cost of the ingredients used and the other overhead costs), we do know what they are charging customers. The price for a bag of Tom's Trail Mix is \$5.00 and there are seven 1-cup servings in the bag. What is the unit price per 1-cup serving?

Allow participants to answer. Refer to the answer key.

Tom's Trail Mix costs the consumer \$0.71 per 1-cup serving.

We've already figured out that we need to charge at least \$0.32 per 1-cup serving for our trail mix in order to break even. Now we know that we can charge somewhere between \$0.33 and \$0.70 per serving and make a profit while beating Tom's price.

At this point it's important to know as much as possible about the customers you're trying to reach and what they are willing to pay for your product. If we wanted to sell our trail mix in high-end specialty food stores we could probably charge a higher price than if we wanted to sell it in convenience stores.

If our target customers are teenagers, what price would you suggest we charge per serving? Per five-serving package?

Allow participants to discuss.

Activity 2: Market Survey

Give each person a copy of the Market Survey handout.

Doing a market survey is a way to gather information from consumers about a specific product. A market survey tells what consumers like and don't like about the product. We'll practice doing a market survey. Each of you will interview someone else in the group and then be interviewed. When you are the interviewer, use the handout to write down the responses.

Participants could also use the Market Survey handout to interview members of the public about a product or service they are interested in developing.

Activity 3: Price It Right Skill Builder

Give each DBA team a copy of the Price It Right Skill Builder handout to complete for their product or service. This will be an important part of their business plans. Or, you can assign each person a product or service to use.

Activity 4: Trail Mix Commercials

Have the group make commercials or other advertisements for the Biz Venture Trail Mix they have created. Suggest that they come up with a new name and slogan to introduce the product to consumers.

Biz Venture Trail Mix Skill Builder

You are starting a company to make and market a product called Biz Venture Trail Mix. Use the recipe below to make the trail mix. Then calculate the unit cost (cost per serving) of each ingredient and the total unit cost of all ingredients.

To find the cost to make one recipe, divide the cost of the package by the number of servings in the package.

Unit cost:	Ingredient:	Cost of package:	# Ounces (Oz):	# Servings:	Amount needed for one recipe:
_____	Peanuts	\$3.80	38 oz	30	½ cup
_____	Raisins	\$1.40	15 oz	11	½ cup
_____	Seeds	\$.88	9 oz	8	3 Tbls
_____	Coconut	\$1.44	14 oz	26	3 Tbls
_____	Pretzels	\$1.50	32 oz	30	1 cup
_____	Honey Grams® cereal	\$3.97	32 oz	30	1 cup
_____	Chex® cereal	\$4.25	32 oz	30	1 cup
_____	Granola oat cereal	\$4.95	32 oz	16	1 cup
_____	Total cost for one recipe (Add all the unit costs)				

How many 1-cup servings did the recipe make? _____

What is the unit cost per serving? _____

Unit cost per serving x 2 = _____ break-even price



What is the unit price (price per 1-cup serving) of Tom's Trail Mix \$ _____

What price do you think we should charge per 1-cup serving of our trail mix? \$ _____

If Tom's Trail Mix costs \$5.00 for a package that contains seven servings, and if our package contains five servings, what should we charge per package? \$ _____

Biz Venture Trail Mix Skill Builder

– Answer Key

To find the cost to make one recipe divide the cost of the package by the number of servings in the package.

Unit cost:	Ingredient:	Cost of package:	# Ounces (Oz):	# Servings:	Amount needed for one recipe:
<u>.12</u>	Peanuts	\$3.80	38 oz	30	½ cup
<u>.13</u>	Raisins	\$1.40	15 oz	11	½ cup
<u>.11</u>	Seeds	\$.88	9 oz	8	3 Tbls
<u>.05</u>	Coconut	\$1.44	14 oz	26	3 Tbls
<u>.05</u>	Pretzels	\$1.50	32 oz	30	1 cup
<u>.03</u>	Honey Grams® cereal	\$3.97	32 oz	30	1 cup
<u>.14</u>	Chex® cereal	\$4.25	32 oz	30	1 cup
<u>.17</u>	Granola oat cereal	\$4.95	32 oz	16	1 cup
<u>.80</u>	Total cost for one recipe (Add all the unit costs)				

How many 1-cup servings did the recipe make? 5

What is the unit cost per serving? \$0.16

Unit cost per serving x 2 = \$0.32 break-even price

What is the unit price (price per 1-cup serving) of Tom's Trail Mix \$0.71

What price do you think we should charge per 1-cup serving of our trail mix? \$ _____

If Tom's Trail Mix costs \$5.00 for a package that contains seven servings, and if our package contains five servings, what should we charge per package? \$ _____



Market Survey

What to say:

I am conducting a survey for _____ (name of business) with people who might purchase this product or service. Would you have time to answer a few questions? (You should have a prototype or sample to show the person who will be completing your survey.)

Product or service: _____

Describe the product or service: For example, customized t-shirts made with photographic transfers

Price: _____ Special features: _____

Please give me your honest opinion as I ask these questions:

1. Is this a product or service you would use? Yes No
2. Explain why or why not? _____

3. How much would you use this product or service? Daily Weekly Monthly
Explain answer _____
4. What do you like best about this product or service? _____

5. What changes would make it a better product or service? _____

6. What do you think about the price? Too expensive A bargain I'd pay more
7. What other products or services like this one do you use? _____

8. What do you pay for those other products or services? More Same Less
9. Do you think your friends would buy this product or service? Yes No

Thank you for taking the time to visit with me and for your honest answers.

Price It Right Skill Builder

Unit Cost to Unit Price

Name of business: _____ Date: _____

The goal of each business is to make a profit. Entrepreneurs must be able to calculate the cost of making a product before they can decide how much to charge for it. List all the supplies you will need to make your product or deliver your service. Enter the quantity and the cost.

Supplies	Quantity	Cost per item	Total cost of supply
Example: duct tape	3 rolls	\$2.87	\$8.61
Name of product: _____			

Calculate unit cost by dividing the total cost of all supplies by the number of products you expect the supplies will make.

Formula:
 Cost of supplies = Unit cost for one product
 Total number of products _____
 Your unit cost: \$ _____

Price It Right:
 Multiply the unit cost by 2 to get a break-even price:
 \$ _____ x 2 = \$ _____
 Your break-even price is: \$ _____



Biz Venture

Lesson 5: Bottom Line

Grade level: 6-8

Learning objectives:

Participants will learn how to manage the costs and expenses of their businesses.

Codes for TEKS:

Economics
Mathematics
Business Education

Codes for 40

Developmental Assets:

Planning and Decision Making
Responsibility
Honesty

National Education

Standards:

Mathematics
Social Studies

Life Skills Model:

Record keeping
Wise use of resources
Problem solving
Self-responsibility

Time required:

45 minutes

Activities 1 through 3 are required to introduce the topic and support skill development.

These activities can be used over several days to fit the program schedule.

Equipment/materials:

Calculators
Pencils
Easel
Flip chart
Markers

Handouts/support materials:

Pizza Biz Case Study
Pizza Biz Financial Plan Worksheet
Worksheets for case studies (Pizza Party, MaMa's Pizza and Cheezy Pizza)
Fixed Cost Cards
Variable Cost Cards
Revenue Cards
Pizza Biz Case Study Answer Matrix
Financial Plan Skill Builder
Pizza Party Monthly Balance Sheet
Pizza Party Income & Expense Statement
Pizza Party Monthly Balance Sheet Answer Key
Bottom Line word Search and Answer Key

Begin the lesson with a word scramble. On a chalkboard or flip chart, write the letters

TOMTBO NEIL.

See if you can unscramble these two words that are extremely important to entrepreneurs and businesses.

Give participants time to answer.

The *bottom line* shows if a business has made a profit. Profit is the amount of money a business makes after deducting all costs for producing the product or providing a service. If the business is "in the red," the expenses were more than the revenue and the business lost money. Entrepreneurs who start businesses learn how to estimate the profit their businesses will make. The business plan has a section called the Financial Plan to give information on the goals for sales, estimated costs and estimated profit.

Today, we will learn about two types of profit, gross profit and net profit. *Gross profit* is the difference between the sales revenue and the cost of goods sold. For example, if you sold a bicycle for \$100 that cost you \$60 to purchase, your gross profit would be \$40. The *net profit* is the same as the bottom line. It's the gross profit minus all operating expenses. So if your gross profit from selling the bicycle was \$40 but you paid \$20 for a newspaper advertisement, your net profit would be \$20.

The first step is to set financial goals for a business. Goals help measure the success of the business. The financial plan shows the goals for how much money will be made in sales over different periods of time. The sales goals are an estimate of how much the business will need to sell of a product or service to make a profit. The sales goals must cover the costs of operating the business. Setting sales goals is a way to estimate the revenue or income the business will make. The financial plan also shows how money will be spent. *Lenders* are people who loan money for a business. If a business needs to borrow money the lender will want to see the financial plan before making a loan.

The entrepreneur must know what it will cost to produce the product or provide the service and run the business. The sales goals must be high enough to cover all the costs of doing business. There are two types of costs the entrepreneur should estimate in the financial plan. *Fixed costs* are operating expenses that are paid every month and do not vary. *Variable costs* are the expenses of producing a product or providing a service. Variable costs may not always be the same. In the financial plan the fixed costs are added to the variable costs to get the total cost of doing business.

Let's pretend you own a pizza business. What are some of the fixed costs?

Allow participants to discuss.

Rent is fixed because a lease is made on the building. If you own the building, your mortgage payment is also fixed because it stays the same for a period of time. Utilities are fixed costs because the expenses will have to be paid every month. Other fixed costs include a payment on a delivery vehicle, insurance, payments on loans for purchasing equipment, furniture, computers, etc. Another fixed cost could be advertising if you budget for a specific amount each month.

Now, let's think about variable costs that change from month to month depending on how much you use. What are some variable costs for a business?

Allow participants to discuss.

Utilities is a variable cost. The cost of producing your product will change depending on how much of it you make each month, so the cost of materials would be a variable cost. And there are miscellaneous items you need that are unexpected or not planned for. Sales tax is another variable cost that depends on how much revenue you have.

Salaries or wages paid to employees could be fixed costs or variable costs, depending upon whether hourly employees work different numbers of hours each month.

Are you ready to own a pizza business? You will need math and problem-solving skills. We are going to use the Pizza Biz Case Study to estimate net profit or what entrepreneurs call the bottom line.

Activity 1: Pizza Biz Case Study & Skill Builder

Divide the participants into three groups. Give them pencils and calculators. Give each group a different Pizza Biz Case Study and the Pizza Biz Financial Plan Worksheet.

A financial plan shows the amount of money you will need to run your business and how the money will be used. The financial plan will help you estimate how much money your business will generate.

Each group owns a different pizza business with different fixed costs and variable costs. Each business has different sales goals and offers different services. Circle the name of your business on the work sheet. Let's share the information on the case study card.

Call on each group and ask one person to read the case study aloud. You may want to have a flip chart with the basic information about each business or use the board to record this information. Use the work sheet answer key as a guide to the correct answers as the groups complete their worksheets.

Setting goals is the first step. The goals are estimates of how much revenue the business will need to make a profit. The goals for sales will be different for each business based on the cost of operating the business. On your cards are your sales goals. Record the projected revenue from the sales goals on the worksheet. Then add the revenue from the different types of sales to get the estimated total revenue. How much has each business estimated as revenue?

Call on each group to report the figure calculated and check their answers.

Now read your cases studies to identify fixed costs. Discuss and record the fixed costs on the work sheet.

Call on each group to give their answers or come to the front and record their answers on the board or flip chart.

Next, identify the variable costs. Discuss and record them on the work sheet. What are some of the variable costs?

Use the answer key as a guide to the correct answers. At this point, give each group the partially completed worksheet that goes with its case study.

Now let's explore some factors that can affect the bottom line. Each business will draw one fixed cost card, one variable cost card, and one revenue card. Read the cards and make the calculations. Read the cards carefully and add this information in the correct place on your work sheet.

Allow time for groups to draw their cards and make the calculations. Use the board or flip chart to review the calculations with each group. Allow each group to make any necessary corrections.

The next step is calculating the gross profit. Remember that gross profit is the total revenue minus the variable costs of producing the product—in this case the pizza ingredients. Calculate the gross profit for your business.

Call on the groups to review the calculations. Use the answer matrix for correct answers.

Now it's time to calculate net profit. You do that by subtracting all other expenses (besides the cost of ingredients) from the gross profit. Then you calculate the amount you owe in taxes and subtract that. The result is the net profit.

Demonstrate the following on the flip chart: Let's assume that all our businesses owe 20 percent in taxes. If your net profit is \$3000 before taxes, you will multiply 3000 by .20.

$$3000 \times .20 = 600$$

You owe \$600 in taxes.

$$3000 - 600 = \$2400 \text{ net profit}$$

After taxes, how much did your businesses make? What was your bottom line?

Call on each group to share the results. This is a good opportunity to compare the businesses based on the information in the case studies. Participants should be able to apply what they learned about revenue, fixed costs and variable costs to explain differences in the amount of profit each business made.

What are the advantages of owning a business like Cheezy Pizza? *Lower overall operating costs, fewer employees, lower rent, lower utilities*

What are the disadvantages? *No delivery business. Must sell more cheap pizzas to make the same money as the other pizza places.*

What factors affect net profit? If a business needed to make more money what changes could be made? *Possible answers: Increase revenue by staying open more days a week or offering promotions to sell more.*

Reduce fixed costs by finding a place with lower rent or reducing the unit cost of pizzas by finding less expensive supplies.

Reduce variable costs by hiring fewer employees or reducing the hours they work. The owner could be the manager to save money on that salary. If delivery sales are low, stop offering that service.

Activity 2: Financial Plan Skill Builder

Give each team a copy of the Financial Plan Skill Builder handout.

Now that you all have an understanding of how to develop a financial plan, you will develop a financial plan for your DBA business. This activity is the final section of the business plan you began in our previous lessons.

Have each team complete the worksheet for the business they would like to start. They will use the same skills they learned in Activity 1. Cross reference Lesson #2, Biz Venture Game Plan.

Setting financial goals in the business plan is the first step to the bottom line. To have a healthy bottom line a business needs a careful bookkeeper. A bookkeeper is someone who records the financial transactions for a business. Entrepreneurs need to be able to track expenses and income so they can make adjustments when sales are not good. The financial plan is just a goal for making profits. Just like a dream, you have to work for it. You can dream of making lots of money, but sometimes the revenue generated by sales is lower than expected. Sometimes there are more workers than customers and the payroll is too high. What happens when variable costs are too high? The gross profit is less. Entrepreneurs keep monthly records to track the profit and loss. The tool used to track profit and loss is called a monthly balance sheet. It can save a business, because the balance sheet shows a business owner where money was lost so that changes can be made the next month. In this way the profitability of the business is carefully tracked from month to month. Let's take a closer look at managing the Pizza Party business.

Activity 3: Pizza Party Business

Distribute the Pizza Party Income & Expense Statement and the Pizza Party Monthly Balance Sheet handouts to each participant.

Look at this monthly balance sheet for a business called Pizza Party. This is where all transactions of money paid for expenses and money deposited are recorded. Let's review each item. Remember you are learning the language of business and these terms are all about managing the money.

The first figure recorded on the monthly balance sheet is revenue. What is revenue? It is all money that comes into your business, or the income. Every time income is earned and deposited in the bank the bookkeeper will record it and put the amount on the monthly balance sheet.