



# Money Math - Who Needs It?

EPISODE #202

ACTIVITIES & LESSONS

## LESSON LEVEL

Grades 4-6

## KEY TOPICS

- Entrepreneurship
- Math skills for finance

## LEARNING OBJECTIVES

1. Recognize the value of math skills.
2. Observe how math is used in daily living.
3. Learn financial terms.

## EPISODE SYNOPSIS

Math is a true building block in the business of your life. From calculating the tip on a restaurant bill to making change and figuring out how to make your savings grow the fastest, it's all about the math in money.

## NATIONAL STANDARDS CORRELATIONS

Aligned to *National Financial Literacy Standards* from the **JumpStart Coalition for Personal Financial Literacy**.

Financial Responsibility and Decision Making

*Standard 1:* Take responsibility for personal financial decisions.

*Standard 4:* Make financial decisions by systematically considering alternatives and consequences.

Aligned to *Voluntary National Content Standards in Economics* from the **Council for Economic Education**.

*Standard 2:* Decision Making

*Standard 14:* Entrepreneurship

Aligned to **Common Core State Standards Initiative's** standards for *Literacy in History/Social Studies, Science and Technical Subjects*.

*Standard 1:* Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

*Standard 4:* Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

*Standard 7:* Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words.

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# LESSON PREP & SCREENING

## Getting Started

Familiarize yourself with the episode ahead of time. It will serve as a springboard for student learning, discussions, vocabulary exploration, and hands-on activities. Determine what equipment is required to show the episode in your classroom and request it if needed. Choose an activity (each one takes between 45-60 minutes), and gather supplies. Students will need a pen or pencil and copies of the activity worksheets. Have fun!

## Screening

Introduce the series and the episode. Explain that Biz Kid\$ is a public television series that teaches kids about money and business. Mention that the bizkids.com website has lots of video clips, games, a blog, and other resources to help kids start businesses and learn about money. Prior to playing the episode, lead your students in a discussion with the preview questions on this page.

## About the Episode

Math is a true building block in the business of your life. From calculating the tip on a restaurant bill to making change and figuring out how to make your savings grow the fastest, it's all about the math in money.

## Episode Preview Questions

Before you show this Biz Kid\$ episode, lead your students in a brief discussion of the following questions:

- When you purchase an item with cash, how do you know you receive the correct change?
- What math skills do you think are needed to handle basic financial transactions?
- What math skills do you think are required to operate a business?

## Next Steps

Show this episode. After the episode, read the Summary and Conclusion to the class.

## Summary and Conclusion

This episode clearly demonstrates the need for everyone to acquire as many math skills as possible. You will use them for calculating tips, the value of a stock, and doubling a recipe. Many careers require math skills. Learn to increase your savings by using the "Rule of 72." Knowing math will contribute to your financial success!

## Family Connection

Distribute a copy of the Family Activity Sheet to each student to share what they've learned with their families.



# FAMILY ACTIVITY SHEET

## Episode Synopsis

Join the Biz Kid\$ and you'll meet social visionaries who use the same tools as for-profit companies to create thriving non-profit organizations and powerful movements for social change.

## Activity Suggestions

It gives meaning to the study of math when you show your children how you use math in your everyday life. If you eat out at a restaurant, let your child calculate the tip. Explain about sales tax if you are making a purchase, and have your child figure out the tax on a single item. Have your child help you calculate the miles per gallon your car gets the next time you fill the tank with gasoline.

When you shop for groceries, ask your child to estimate how much the total will be by rounding up each item as it is placed in the basket, then keeping a running total as you shop. They can also compare the price of store brands against advertised brands of the same item. If you use coupons, have them figure out the new price for the item after the coupon is used.

Tell your child how you use math at your workplace. Gather information on careers that interest your child, and find out which math skills they require.

Look at the business section of the newspaper or the internet together. Show your child information about businesses that is measured in numbers, such as the price for one share of stock in a company. Help them track the price of one share of stock for one week, and graph the closing price each day.

Edutopia.com was created by the George Lucas Educational Foundation, and their website has financial literacy information for all grade levels. Explore the website and its resources with your child.



Activity #1:

# BIZ TERM\$

## WORKSHEET FOR STUDENTS

### Biz Term\$

- Calculate
- Cost per unit
- Decimal
- Estimation
- Operating costs
- Percentage
- Profit
- Ratio
- Rule of 72
- Tax deferred

### Directions

With students, read aloud the Biz Term\$ and each question. Call on volunteers for answers, and have them explain why they chose the term they believe to be correct.

### Biz Term\$ Episode Review

1. \_\_\_\_\_ is money left over after expenses have been paid.
2. A mathematical method used to show how long it will take to double your money in an investment is the \_\_\_\_\_.
3. Another word for \_\_\_\_\_ is approximation.
4. To determine or compute in math is to \_\_\_\_\_.
5. The \_\_\_\_\_ system is based on the number ten.
6. An investment or benefit in which taxes are paid at a future date is \_\_\_\_\_.
7. Costs to keep a business running are \_\_\_\_\_.
8. A \_\_\_\_\_ is a rate or proportion per hundred.



# CURRICULUM CONNECTIONS

## Language Arts

- Have students construct sentences, write a paragraph, or create a story, skit, or dialog using Biz Term\$.
- Have students create a class Dictionary of Financial Terms using Biz Term\$.
- Have students start their own Journal of Personal Financial Education and continue to add to it.

## History/Social Studies

- While it is uncertain exactly when the Rule of 72 was discovered, research the earliest written reference to this rule. Who wrote about it? What year was it? What country was he from? What language did he write in?

## Mathematics

- Teach students how to calculate sales tax. If your state does not have sales tax, use an example from a state that does. For a list of states and taxes, see this website: [http://en.wikipedia.org/wiki/Sales\\_taxes\\_in\\_the\\_United\\_States](http://en.wikipedia.org/wiki/Sales_taxes_in_the_United_States)

## Economics

- Math is used in economics to describe business and government situations and make a good guess as to what will happen next based on the numbers. For example, one situation that is measured in math is the exchange rate between dollars and the Euro. Have students track the exchange rate for one week, then ask them to predict if the rate will go up or down in the next week. Track the rate a 2nd week and see which predictions come true.

## Optional Vocabulary Extensions

### Make Art!

Ask students to create personal illustrated glossaries using sketches or cartoons to visually represent the meaning of each Biz Term.

### Make It Personal!

Provide students with dictionaries and ask students to re-write formal definitions for each Biz Term in their own words to demonstrate comprehension.



Activity #2:

# MENU MATH

## WORKSHEET FOR STUDENTS

### Directions

In this episode, we learned how math is used in business. You are going to create a one page menu for an imaginary new school restaurant that will serve lunch. No items that are inappropriate for school may be included. Be sure to put your name on your menu, you will be sharing it with classmates.

### Create your menu

Create at least 3 choices for the entree, 3 choices for the drink, and three side items.

You must set prices at \$5 or less for each item, but you may also create “specials” where multiple items are offered for a bargain price.

Provide a detailed description of the entree choices. If you have enough time, illustrate the menu items.

### Place your order

Next, trade menus with a classmate.

On a separate sheet of paper, write your name and write down what you would order from the classmate’s menu.

Total up the amount of your purchase.

Figure out the tip or gratuity at a rate of 15%.

Finally, return the menu and your ‘order’ to your classmate.

### Compare menus

Post your menus on a wall or bulletin board in the classroom for everyone to see.

Give students time to read them over for the rest of the week. At the end of the week, have each student vote for their favorite entree.

Do the math to figure out what percentage of students preferred the favorite entree.



Activity #3:

# WHOLESALE AND PROFIT

## WORKSHEET FOR STUDENTS

### Directions

In this episode “Lava Bags” handbags were originally sold to individuals for \$20 each. Then the entrepreneurs found a store to buy a whole lot of bags at a wholesale price. The store is a middleman, also called a wholesaler or a distributor. Lava Bags were sold to the store for \$15 each, then the store sold them to customers for more money. The price that the customers pay at the store is called the retail price. Now it’s your turn.

1. It costs \$8 to produce one “Lava Bag” handbag. If the handbag is sold to the wholesaler for \$15, how much profit is made on one bag? \_\_\_\_\_
2. If the store orders 300 bags, and they write you a check for them at \$15 each, what should the amount on the check be? \_\_\_\_\_
3. If the store orders 300 bags, and it will cost you \$8 per bag to make them, how much will you need to make them? \_\_\_\_\_
4. If you subtract your expenses (the answer to #3) from your check (the answer to #2) then how much is left? (This is your profit.) \_\_\_\_\_
5. If you have to share your profit (the answer to #4) with a manager, and the manager gets 10% of the profit, then how much do you have to pay the manager? \_\_\_\_\_
6. After you pay the manager, how much do you get to keep? (The answer to #4 minus the answer to #5).  
\_\_\_\_\_
7. The store needs to make 40% above what they pay for the bags. If they buy the bag for \$15, what will they sell it for as the retail price? \_\_\_\_\_
8. Who would you rather be, the designer, the manager, or the distributor, and why? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Have students discuss these ideas and share their answers with the class.



# BIZ TERMS DEFINITIONS

- *Calculate:* To determine or compute mathematically.
- *Cost per unit:* The total expense to create one unit of a product, including materials or ingredients, plus labor cost to build or produce it.
- *Decimal:* A number system based on the number ten.
- *Estimation:* The process of finding an approximate calculation.
- *Operating costs:* Costs to keep a business running, such as utilities and rent.
- *Percentage:* A rate or proportion per hundred.
- *Profit:* Money that is left after expenses have been paid for from a business or an investment.
- *Ratio:* The relationship between two numbers.
- *Rule of 72:* A mathematical way to estimate how long it will take to double your money in an investment. For example, an investment that earns 10% interest will take 7.2 years to double in value. You find the answer by taking the number 72 and dividing it by the interest rate.
- *Tax deferred:* An investment or benefit in which some or all taxes are paid at a future date.





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