



BIZ KID\$

Episode 202: Money Math –Who Needs It?

Episode 202 Synopsis:

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

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Biz Kid\$ Curriculum Package #202



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Biz Terms

- | | |
|-----------------------|---------------------|
| 1. Calculate | 9. Operations costs |
| 2. Cost of Production | 10. Percentages |
| 3. Cost per unit | 11. Profit |
| 4. Decimals | 12. Profit Margin |
| 5. Depreciate | 13. Ratios |
| 6. Earnings per Share | 14. Rule of 72 |
| 7. Estimation | 15. Tax deferred |
| 8. Investments | 16. Tips/Gratuities |

Suggestions for using Biz Terms include:

- Have students research and write dictionary definitions.
- Discuss the use of these terms in the episode of "Biz Kid\$".
- Have students construct sentences, write personal financial goals, create a financial journal entry, or a math word problem.
- Have students write paragraphs, stories, dialogs, "raps", or lyrics.



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Equipment/Materials/Prep needed:

Day One and Day Two:

- TV or projection system
- DVD player
- DVD of Episode 202

Day Two only:

- Student copies of the "Family Activity Sheet".
- Student copies of the "Biz Terms" Sheet.
- Paper, pens, pencils, color markers, and highlighters for students making ads and posters.
- Computers for students to explore web sites listed.
- Guest speaker to be greeted and directed to the correct location for the session.

Preparation:

- Check to be sure needed equipment is available and operational prior to the sessions.
- Gather listed materials.
- Make an appropriate number of copies of the "Biz Terms" Sheet and the "Family Activity Sheet".
- Invite guest speaker from the local community regarding fraud and how to prevent being scammed.



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Day One

Previewing Questions:

Day One Introduction

Welcome students/youth to “Biz Kid\$” and introduce yourself, giving your name and job title.

Explain that “Biz Kid\$” is a program to help people become financially educated, learn work-readiness skills, and to even become entrepreneurs...Biz Kids!!!

They can view the program “Biz Kid\$” with their families on Public Television stations all over the country, and also participate by using the “Biz Kids” web site. Today, they get to see an episode with you.

Today’s pre-viewing question:

When you pay for a purchase using cash, how do you know if you receive the correct amount of change?

(Students may respond that they count their money using addition or subtraction.)

What math skills do you think you need to handle basic financial transactions?

(Allow students to respond, and record their responses on a blank OHP transparency or paper chart for future reference.)



Do you think that math skills needed to operate a business are different from the ones we've just listed?

(Add to the list if students suggest additional skills are needed.)

As we watch today's episode of **Biz Kid\$, "Money Math – Who Needs It?"** think about the math skills you have already acquired, and see if you spot other math skills that would be helpful to learn.

Show Episode 202: "Money Math – Who Needs It?"

Activity to follow viewing the program together:

Let's review the list of math skills we created prior to viewing the program.

(Display the list using the OHP or paper chart.)

Did you notice other math skills used by the young entrepreneurs in this episode? *(If so, record student responses and add to the list.)*

Now I'd like you to get your math text books and locate the Table of Contents. *(Allow students a few minutes to retrieve their math text books.)*

Is the word "Money" used in any of the titles or subtitles in your text?

If so, turn to those pages and see what kinds of problems are included. If you don't spot the word "Money" in the Table of Contents, try checking the Index at the back of your book.

Raise your hand when you are ready to share information with us.

(Allow students time to share and discuss their findings.)



Next, ask students if they saw anyone in the program using the particular skills they are learning. How will it help them to have this knowledge?
(Again, if time permits, allow them to share their "discovery" that the math skills they are learning now will work for them the rest of their lives!)

Thank students for their attention and participation in today's session.

SMART

By Shel Silverstein

My dad gave me one dollar bill
'Cause I'm his smartest son,
And I swapped it for two shiny quarters
'Cause two is more than one!

And then I took the quarters
And traded them to Lou
For three dimes---I guess he don't know
That three is more than two!

Just then, along came old blind Bates
And just 'cause he can't see
He gave me four nickels for my three dimes,
And four is more than three!

And I took the nickels to Hiram Coombs
Down at the seed-feed store,
And the fool gave me five pennies for them,
And five is more than four!

And then I went and showed my dad,
And he got red in the cheeks
And closed his eyes and shook his head---
Too proud of me to speak!



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Day Two

Review and Connect with the Previous Session

Play part of the theme music for “Biz Kid\$” from the episode intro to motivate and engage the students. Then stop the music, welcome the students/youth to today’s session, and introduce yourself. If needed, ask students to please use their nametags.

Review and Connect with the Previous Session

The main message in **Episode 202** is that math is fundamental to financial education.

The topic of determining the amount of a tip or gratuity, based on the quality of goods or services, was explored. Math skills involved included moving the **decimal** point, **simple percentages**, and using **estimation** skills.

Andy, the Biz Kid with a passion for golf, uses his knowledge of the game to explain similarities with the stock market. He told us that the stock market is founded on the basis of math; and that everyone should know **ratios** and percentages in order to calculate the value of a stock. Make your money work for you!

Math skills such as **geometry, physics, estimation, and calculation** are used in many careers, such as mechanical engineering, drafting, operating a crane, in sports, and being an astronaut. There are many more careers that involve math skills.



The character known as “**The Calculator**” is on a mission to save the world from faulty money math. He said that if you practice the skill of “rounding up to ten”, you can decide if a sale item is actually a good deal. (She bought the blouse on sale!)

We learned that the “**Sellers’ Cost of Production**” has a huge impact on whether or not a business will make a profit. That includes all costs required to make one unit of a product, including transportation, supplies, employee wages and benefits, shipping and daily operational costs. These calculations require fundamental math skills.

Biz Kids Laura, the sewing whiz, and her partner Alex, the math whiz, own and operate the business “**Lava Bags**”, also referred to by the owners as “Money Bags!” They recycle used clothes and accessories, and make some purchases in bulk, to create Lava Bags. They make 55% profit on each bag, and plan to expand the business to increase volume and total profits. They emphasize that “**time is money**”!!!

The jump-roping Biz Kids wrote a rhyme about the “**Rule of 72**”, an investment method of saving money and doubling the amount, in a tax-deferred account.

Peter, the Chocolate Confectioner, found a way to increase his volume of business by selling to wholesalers, which increased his profits. He uses basic math skills every day, though he also took AP Calculus.

Finally, the Biz Kids Zack, Jamie, Joseph, Laura, and Emily created the “**Cool Schools Challenge**”. By using math skills, they helped the 20 participating schools save over half a million dollars and reduce carbon usage with simple behavioral changes.

This episode has a lot of information, but it clearly demonstrates the need for everyone to acquire as many math skills as possible. You will use them



every day, and knowing math will contribute to your financial success. Biz Kids use math...so keep studying!!!

ACTIVITY

You are going to create a one page menu for an imaginary new school restaurant that will serve breakfast, snack, and lunch items.

You must include a minimum of three items per category:

- Entrees
- Drinks
- Desserts
- Sides

No single item may exceed five dollars in cost.

You must set prices for each item in every category, but you may also create "specials" where multiple items are offered for a bargain price.

No items that are inappropriate for school consumption may be included.

You will have 20 minutes to complete this assignment.

If you have enough time, illustrate menu items, and provide a detailed description of the entrée choices.

Be sure that your name is on your menu!

Once menus are completed, you will be exchanging them with other classmates.



On a separate half sheet of paper, a classmate, the **"buyer"**, will write their order from your menu, **as well as their name.**

Both the menu and order will be returned to you, the "seller", for totaling the cost of their purchase.

Next, return the order form and cost of purchase to the **"buyer"**, who then will determine the amount of the tip or gratuity. (We'll assume that all service is at least "good" and that everyone will receive a tip.)

Finally, the menu and order form are returned to the **"seller"**, who created the menu.

Summary and Review

In the few minutes we have left, what are some reasons you can now state for studying math? *(Call on as many volunteers as possible.)*

Another purpose of the Activity of creating menus and being buyers and sellers is to get you thinking about the cost of production per unit for items you order or use almost daily.

Sometimes, students and parents express frustration with the food choices available for purchase at school. If they truly want to create change, they need to gather facts regarding all costs associated with getting what they want. A factual presentation that is cost-effective for the school district will have a better chance of success!

Distribute the **Family Activity Sheet** for Episode 202.
Encourage students to share their knowledge with families and friends.

Thank them for their attention and participation!



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Family Activity Sheet

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

When you are eating out with your children, let them practice calculating the tip or gratuity for the bill. It gives meaning to their study of math for them to see you using math in your everyday activities.

Gather information on careers that depend on using math skills that your child might be interested in pursuing. Share with them how you use math skills in the course of your business day.

Use local newspaper ads and mailers to create a shopping list of items you need. Have your child estimate the cost of the groceries and supplies; then review the actual costs. Brainstorm ways to reduce the total by making such changes as trying store brands.

Look at the business section of a newspaper together. Show your child where information about stocks is located. Learn more together using resources on the Internet.

The web site www.edutopia, created by The George Lucas Educational Foundation, has a guide to financial literacy resources. They have resources for students in elementary school, middle school, and high school, with links to other web sites.