

# What Is Money? What Do We Need to Know to Be Money Wise?

by Emiko Furuya, 2016 CTI Fellow E.E. Waddell Language Academy

This curriculum unit is recommended for: Japanese Immersion Grade 5

**Keywords:** capitalism, money, math, fractions, decimal numbers, percentages, banking

**Teaching Standards:** See Appendix 1 for teaching standards addressed in this unit.

**Synopsis:** Elementary school students tend to have less difficulty handling money when numbers have dollar signs in in front of them. However, when the numbers lose their dollar signs, they suddenly change into decimal numbers that are more difficult to handle. One of the goals for this unit is to use money to help students understand that numbers are numbers with or without dollar signs. Another goal for this unit is to help students to understand the concepts of money and capitalism. By supporting students in deepening their understanding of math concepts and strengthening their math skills, the students will be able to explore how to run their classroom with a self-created currency and what kinds of math they would need to balance that currency successfully. This unit is designed to be taught at the beginning of the school year for the students to foresee that what they are going to learn in math is relevant to what they will need to be self sufficient.

*I plan to teach this unit during the coming year to* 20 students in Japanese Immersion Grade 5 Class.

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## Emiko Furuya

#### Introduction

When I heard that "Teaching capitalism in elementary school is teaching money," at the Charlotte Teachers Institute (CTI) Open House, I thought this might help my students to like mathematics more and make them more willing to dive deeper into mathematics. They know money and use money; therefore, money could serve as a hook for my students. If my students realize that they need to have enough mathematical knowledge and skills to be able to balance their checking account, they might be more eager to have sufficient knowledge and skills in mathematics. The ability to tackle and solve mathematics will motivate students to dig deeper into mathematics and ignite their desire to be better at mathematics. Balanton (2008) suggests that teachers need to help students to build their foundation for algebraic thinking in elementary school. Using money provides many situations for students to practice their algebraic skills. I would like this unit to act as the starting point for my students no matter where they are in terms of mathematical performance level for them to advance to the next level through higher level thinking (Ball 1991, The Common Core State Standards Writing Team 2012, Smith et. al 2006).

The 5<sup>th</sup> grade students learn about the European explorers social studies; capitalism is tied into how the European explorers started their expeditions. This unit includes how capitalism worked for the European expeditions and how the capitalism involves us in our daily lives. Through introductory lessons on the capitalism, I hope that my students gain an understanding what money is and they start thinking what they need to know about money and capitalisms.

## **Demographics**

I teach at E.E. Waddell Language Academy, a countywide K-8 language magnet school. We have a population of 1,387 with 940 students at the elementary level and 447 students in middle school. E.E. Waddell offers five target languages: Chinese, French, German, Japanese, and Spanish. Our school is very diverse. The majority of the staff is bilingual and 30 percent of the teachers and teacher assistants do not have U.S. citizenship. The student body is very diverse as well: 46 percent White, 24 percent African American, 20 percent Hispanic, 5 percent Asian and 6 percent multiracial. 34 percent of the K-8 students qualify for free or reduced lunch. The Parent Teacher Student Organization (PTSO) is extremely active and supportive. Our school was a North Carolina Honor School of Excellence for several years. It was awarded the national 2012 American Council on the Teaching of Foreign Languages (ACTFL) Melba D. Woodruff Prize for

Exemplary Foreign Language Program. This prize recognizes schools that align their curricula with the World Readiness Standards for Language Learning and integrate languages with content areas. The Magnet Schools of America recognized E.E. Waddell as a Magnet School of Distinction in 2016.

I teach the 5<sup>th</sup> Grade Japanese Immersion class at E.E. Waddell Language Academy. I teach mathematics, science, and Japanese Language Arts in Japanese. My students started the Japanese Program in Kindergarten through a lottery process; the student body in my class is diverse ethnically, developmentally, as well as special education wise with students in the talent development program and students with learning disabilities.

#### Rationale

I believe that providing opportunities for students to understand mathematics is everywhere and is not something students do only at school. Providing various opportunities for mathematical learning will help students to be motivated to learn math and to engage themselves more with math related activities. Students tend to retain and apply learned knowledge and skills when students acquire knowledge and practice skills through activities that make sense to them. Mathematics knowledge and skills are no exception to this; students need to make sense of math concepts in order for them to be able to internalize the concepts and apply them in real life situations (Bay-Williams and Martinie 2015, Bell 1998, Carpenter et. al 2015). Quite often even when students are able to tell there are 4 quarters in a dollar and each quarter is worth 25 cents, the same students have to stop and think how many sets of 25s are in 100. Students have tendency to understand dollars and they do not deal with the same numbers if the numbers do not have a dollar or cent sign attached to them. Money makes more sense to students; therefore, using money as a starter of math study should make sense to students. I would like to start this unit with a discussion of what money means and continue the unit by exploring how people in the past developed money, how money works within our daily life, and how money and mathematics involved each other. My goal is that students increase their interest and motivation for mathematical study through these activates.

## **Content Objectives**

This unit covers concepts of place value, number and operations, and fractions and decimals for mathematics. Students need to know about place value with money, especially with dollars since decimal numbers are used with dollars. On the other hand, the Japanese yen does not use decimal numbers in everyday use, except for exchange rates and stock markets.

This unit also covers developments of money and capitalism. Students study how Pre-Columbian Americans used bartering and developed their systems of money.

Students study the European Explorers how the European countries used capitalism to start sending expedition ships westward.

This unit includes practice how to balance a bank account using class made money system and how to understand pricing to make a best or better purchase. These activities require students to develop their algebraic thinking and make sense of data. Again, students need practices that they can relate to in order for them to develop deeper understanding of mathematical concepts and to acquire the necessary skills to have mathematical success (Jonson 2014, National Council of Teachers of Mathematics, (NCTM), 2014, Ontario Ministry of Education 2013, Smith and Stein 2011). Students need to develop mathematical literacy and to be able to interpret data, which surrounds their everyday life, to make better choices of commercial products for them (NCTM 2007, Villalva 2004, Within 2006). Students need practice to solve story problem to avid isolating mathematical practices that happen only at school (Beckmann 2004, Friel et. al 2008, Griffiths, 2007, Joram et. al 2004). This unit provides opportunities for students to view mathematics as a part of their daily life.

#### **Classroom Activates**

Lesson 1: What Is Money?

Goal for the lesson: Have students understand the money is something people believe in. Without their belief, money does not carry any meaning.

## Objectives:

## CCSS.ELA-LITERACY.RL.5.2

Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.

- CCSS.ELA-LITERACY.RL.5.3
  - Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).
- CCSS.ELA-LITERACY.RI.5.3
  - Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
- NC World Languages NH.CLL.2.4
   Compare simple fiction texts with non-fiction about familiar topics.
- NC World Languages NH.COD.2.1
   Understand spoken and written commands about other disciplines in the target language.

Materials needed: A copy of "Hina-tsuba" (doll's sword guard) to read to students or a copy of the story per student.

Use a story called "*Hina-tsuba*" (doll's sword guard) from "*Rakugo*" (Japanese traditional lone storytelling) to pose a question to students – what is money? The Japanese version and English version of the story are in appendix. They can be orally read or students can read the story to discuss what they think money is. The outline of the story is shown as below.

In this comical story, a father who is a gardener complains to his wife about their son being so greedy about money and asking for some coins all the time. The father tells his wife a story about a son of noble family where he tends their garden. The noble son, who is the same age as their own son, 8 years old, does not know anything about money; therefore, he claims a coin with a hole in its middle is a sword guard of a doll and tosses a coin without any hesitations when he is told to do so. The son of the gardener, who is clever in a cunning way, listens to his father and mimics the noble son in front of a guest to impress the guest by stating that he finds something that he thinks it is a doll's sword guard because it is small, round, and it has a hole in its middle. The guest is very surprised as the son plans and offers to buy study materials. At the end, when the father prompts his son to throw a coin away, the boy replies with, "Of course NOT! I will buy some baked sweet potatoes with this coin!" This is a punch line of the story.

By comparing two 8-year old boys with and without any knowledge of money, students can share their ideas about money. To help students to understand that money relies on people believing in it and it is a belief system, have students examine examples below and discuss. Students can also list their examples for classmates to examine and discuss.

- Example 1: I have no idea about Pokémon cards. I found a card and threw it away
  in a trashcan. When I described the card to my friend who loved Pokémon cards,
  he told me that card was a rare one and would have been traded with lots of
  money.
- Example 2: A farmer found a 17-pound yellow stone. He did not know what it was, so he used it as a doorstopper. It turned out that the nugget was gold.

Lesson 2: How Did Money Get Started?

Goal for this lesson: Help students to understand history of money.

Materials needed: Computers with the Internet access, books about money, sentence strips for timeline of development of money.

Questions to ask prior to starting the activity:

- 1. Why would you swap your belongings with your friend when you have something your friend wants and your friend has something you want?
- 2. What do you think you would do to have something you need if you did not have money to pay for it?

Students go to the website below and create a timeline of development of money. <a href="http://www.iyobank.co.jp/kids/history/index.htm">http://www.iyobank.co.jp/kids/history/index.htm</a>. Students read books about money and make a time line of money development. See examples of student books below.

Everything Money
The Story if Money

Students share their timeline and understanding of money development with class. Ask students to bring advertisements with fractions, decimals, and percent for the next lesson.

Lesson 3: What Do You Mean by 1/2 Off"?

Goal for the lesson: Help students to understand how fractions, decimals, and percentages are used in advertisements.

## Objectives:

- CCSS.MATH.CONTENT.5.NBT.A.3
   Read, write, and compare decimals to thousandths.
- CCSS.MATH.CONTENT.5.NBT.A.3.A Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g.,  $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$ .

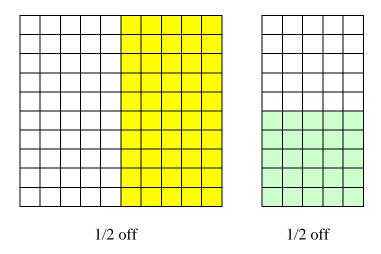
Materials needed: Advertisements/sale circulars that students bring from home, copies of 10 x 10 grid paper, colored pencils, chart paper, markers.

Ask students to make a list or bring in information with numbers from home that they can fond in advertisements. Discuss with the class what mathematical concepts they need to understand the information on the advertisements. See examples below.

- 20% off, 30% off, 50% off, etc. (percentage)
- 1/3 off, 1/2 off, etc. (fractions)
- Buy one, get one free (fractions/decimals)
- Buy two, get one free (fractions/decimals)

• 0.01 % interest, 0.1 % interest, etc. (decimals/percentage)

Discuss with students what they think about each example. After the discussion, use the  $10 \times 10$  grid paper to visualize the discounts. Pose the example below to the students to start another discussion about "1/2 off" of different items and why both can claim half with different shapes.



After the discussions, students write their understanding of the example(s) that they used on chart papers to post in the classroom. Ask students to bring money related problems to share and solve during the next lesson.

Lesson 4: Let's Be a Mathematician!

Goal for the lesson: Review activities involving money, fractions, decimals, and percent.

## Objectives:

## CCSS.MATH.CONTENT.5.NBT.B.7

Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

• CCSS.MATH.CONTENT.5.NBT.A.3.B Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons

Materials needed: Money related problems that students bring, place value chart, play money (1¢ coins, 10¢ coins, \$1 bills, \$10 bills, and \$100 bill), decimal grids (ones,

tenths, hundredths, thousandths, and ten thousandths), copies of 10 x 10 grid paper, chart paper, markers.

Students need to make connections between fractions, decimals, and percent in order for them to understand and solve problems related to these numbers. (Burns 2000, Van de Walle and Lovin 2006). To help students to make connections between percent and fractions/decimals, use 10 x 10 grid to show to 1% (one square out of 100 squares). Introduce or reintroduce these concepts to students before starting money related problems that students bring to class. See examples below.

- I have \$1.00 to buy school supplies at the school store. Pencils cost  $25\phi$  for 2 pencils and one eraser costs  $25\phi$ . What can I buy with a dollar?
- I saw some advertisements for school supply sales. One store has 48 pencils for \$5.99. Other store has 6 dozens of pencils for \$14.99. Another store has a dozen of pencils for \$1.79. Which one should I buy?

After students solve the money related problems, they share their solutions with class. Then, students write their problems and solutions on chart paper to post in the classroom.

Lesson 5: Let's Be Money Savvy & Money Wise!

Goal for the lesson: Introduce how the capitalism works and provide students with experience of the basic capitalism.

## Objectives:

- CCSS.MATH.CONTENT.5.NBT.B.7
  - Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
- NC Social Studies Essential Standards 5.E.1 Understand how a market economy impacts life in the United States.
- NC Social Studies Essential Standards 5.E.2 Understand that personal choices result in benefits or consequences.
- NC Social Studies Essential Standards 5.E.2.1
   Explain the importance of developing a basic budget for spending and saving.
- NC Social Studies Essential Standards 5.E.2.2
   Evaluate the costs and benefits of spending, borrowing and saving.

Materials needed: Discussion topic cards if choose to have group discussion, copies of balance sheet (See Appendix 4).

Begin the lesson with class discussions for the topics below.

Many European countries sent explorers to find products that would bring profits.
 Suppose you are one of the investors of a ship, which situation would you choose and why?

Situation 1: I choose to invest in one expedition by taking a risk of losing your entire investment if/when shipwrecks or gaining a huge profit from the goods upon return of the expedition.

Situation 2: I choose to invest in several expeditions to gain profit that will be divided evenly among investors for several expeditions and avoid a risk of losing entire investment with ship wreckage.

The Horse Problem<sup>1</sup>
 A man bought a horse for \$50.
 He sold it for \$60.
 Then he bought the horse for \$70.
 He sold it again for \$80.

What is the financial outcome of these transactions? (Ignore cost of feed for the horse, cost for boarding, etc.)

• You have \$100. Which way would you choose to keep your money? Think of situations that one option suites better than the other and reason(s) why.

Option 1: I will keep mine in my secret drawer, so I can use my money when I need.

Option 2: I deposit to my checking account at my bank with 0.01% interest. Option 3: I deposit to my CD (Certificate of Deposit) at my bank with 0.10% for 12 month.

After discussions, use a balance sheet for students to test out \$100 money options. Students can list items for items of their choice for expenses. After students understand how to use the balance sheets, add a usage of credit card with 10% APR (explain annual percentage rate to students) to purchase an item that costs \$200. Students calculate the total amount to pay back to a bank with different amount for borrowing, \$100, \$150, or \$200. Students share their choice and the reason(s) with the class.

End the lesson with reviews of an impact of market economy, benefits of developing basic budget for spending and borrowing, and benefits and consequences of personal choices.

## Notes

<sup>&</sup>lt;sup>1</sup> Burns, A Collection of Math Lessons: Grades 3 through 6, 130.

## **Appendix 1: Implementing Teaching Standards**

Common Core Mathematics Standards:

## • CCSS.MATH.CONTENT.5.NBT.B.7

Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

- CCSS.MATH.CONTENT.5.NBT.A.3 Read, write, and compare decimals to thousandths.
- CCSS.MATH.CONTENT.5.NBT.A.3.A Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g.,  $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times 100 \times 1$
- CCSS.MATH.CONTENT.5.NBT.A.3.B
   Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.</li>

## Common Core English Language Arts Standards:

#### CCSS.ELA-LITERACY.RL.5.2

 $(1/100) + 2 \times (1/1000)$ .

Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.

CCSS.ELA-LITERACY.RL.5.3

Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).

• CCSS.ELA-LITERACY.RI.5.3

Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

## North Carolina Social Studies Essential Standards:

- 5.E.1 Understand how a market economy impacts life in the United States.
- 5.E.2 Understand that personal choices result in benefits or consequences.
- 5.E.2.1 Explain the importance of developing a basic budget for spending and saving.
- 5.E.2.2 Evaluate the costs and benefits of spending, borrowing and saving.

North Carolina World Languages Essential Standards:

- NH.CLL.2.4 Compare simple fiction texts with non-fiction about familiar topics
- NH.COD.2.1 Understand spoken and written commands about other disciplines in the target language.

## Appendix 2: "Hina-tsuba" in Japanese

『ひなつば』

植木屋の熊さんが仕事から帰って、おかみさんに話しかけました。その内容は というと…。

お屋敷で熊さんが植木の枝を切っていると、そこへお屋敷の若様が通りかかりました。若様がトコトコ歩くと、おとものおさむらがその後をついて行くのを見て、熊さんは大変だなぁと思っていました。すると、若様が池のほとりで何か拾いました。それは、天保銭でした。若様がにっこり笑いました。熊さんは、

「若様も子ども、銭を拾って嬉しいんだな。」

と思って見ていました。ところが、若様は、おともの三大夫さんに、真顔で聞き ました。

「これ、何。」

聞かれた三大夫さんは、こう答ました。

「いっこうに存知ません。若様は、何と思われますか。」

そう言われた若様は、ちょっと考えました。

「丸くて、四角い穴が開いているから、おひなさまの刀のつばだ!」

「さようでございますか。きたないものなので、お捨てください。」

と三大夫さんに言われた若様は、ポーンとお金を投げてしまいました。

おどろいた熊さんが聞いてみると、若様は、今年お八歳になられるが、身分の 高いお方には、お金のことは教えなということでした。

そんな話をしていると、ここの家の子どもの金ぼうがやって来て、

「遊びに行くから、お金くれ!」

と言うのです。若様も八歳、金ぼうも八歳です。

「同じ八歳でも育て方でずい分違うものだ。うちも考えなければいけないねぇ。 金ぼうには、若様と同じことは言えないだろうな。」

「言えるよ。そこへお金を投げてよ。」

「ふざけるな!」

見かねたおかみさんが金ぼうにお金をやったので、金ぼうは出て行きました。 おまえが金ぼうにあまいから…とお説教をしていると、熊さんが出入りしている お店のだんなさんがやって来ました。だんなさんと話していると、

「こーんなもの、拾った!こーんなもの、拾った!」

と、言いながら金ぼうが帰って来ました。

「丸くて、四角い穴が開いているから、おひなさまのつばかなぁ。」

と、金ぼうは言い出しました。だんなさんは、金ぼうのことばに感動しました。「おや、この子はお金を知らないのかい。わたしにも同じくらいのまごがいるが、わたしの顔を見れば、お小使いくれ、お金くれってうるさいがねぇ。えらいねぇ。お金を知らないんじゃ、お小遣いではなく、手習いの道具でも買ってあげようかね。」

「それは、どうもありがとうございます。金ぼう、よかったな。さあ、それは捨てておしまい。」

「やだよ、これでやきいも買って、食べるんい!」

## **Appendix 3: "Hina-tsuba" in English**

## Pre-reading information

- Rakugo: Japanese traditional lone story telling told by a professional storyteller from a stage. Rakugo literally means "fallen words," which story ends with ochi (fall) or punch line. The story ranges from human nature, comical, and ghost stories.
- Hina-Tsuba: Hina means dolls and Tsuba is a guard on a sword; Hina-Tsuba is a sword guard of a Japanese traditional male doll.
- Setting of this story: Comical story of townspeople of the Edo Era. Townspeople in the Edo Era lived in tenement houses and so did this story's family.
- Craftsmen are one of the common main characters of Rakugo. In Hina-Tsuba, Kuma-san, used as common name of craftsman, is a gardener.
- Kin-bo, a gardener's son, is a common name of boys that time.
- Tenpo-sen: one of the coins in the Edo Era with a square hall in the middle, which shape looked like Tsuba, the Japanese sword guard.
- Sandayu: common name for lord's servant.
- Okami-san: missus, used calling for someone's wife.
- Danna-san: master of a shop.

## Hina-Tsuba

Kuma-san, the gardener, came home from working in the garden of a noble house and stated talking to his wife.

"I witnessed what I was not able to believe in the Lord's garden today. So surprised! Couldn't believe my eyes!"

"What are you talking about," replied Okami-san, Kuma-san's wife.

"When I was working on one of the pine trees, Young Master came out with several retinues. When Young Master went to the left, the retinues also went to the left. When Young Master moved to the right, his retinues also moved to the right. I watched them move thinking what a job... Then, Young Master found something by the pond and it was the Tenpo-sen. He smiled and looked at Sandayu-san. Young Master was a child as well, I thought. He also was happy to find a coin. He asked Sandayu-san what that was! I was so surprised! Young Master did not know about the coin! Then, Sandayu-san asked back, 'What would think that was, Young Master?' What do you think the answer was? After thinking for a while by bending his head slightly to one side, Young Master answered, 'I think this is a sward guard for a doll. This is round and has a square hall in it.' Sandayu-san told Young Master to throw it away since that was unclean. It was unbelievable, but Young Master threw it away without any hesitation and then went away with his retinues. Can you believe that? I was extremely surprised, so I asked Sandayu-san later how old Young Master was. He is 8 years old and he does not know

anything about money!! Sandayu-san told me that they would not teach noble Young Master anything about money so he would not be greedy about it! What a difference! 'I want some money,' Kin-bo says whenever he sees me. What a difference! He became so greedy. You spoil him so much all the time! Where is he, anyway?" Kuma-san exclaimed.

"Giggling behind you," the wife answered.

"Kin-bo, come here," Kuma-san told his son. "You cannot say what Young Master said, can you?"

"Of course I can, if you throw a coin there," Kin-bo replied.

"Hold your tongue! Now, go away and play," Kuma-san ordered.

"I need some money. Give me, give me," Kin-bo demand.

"No, no. Go away," kuma-san refused.

"Give me! Give me!" Kin-bo repeated.

"Here, go and play," Okami-san gave in.

"There! You did it again," Kuma-san argued.

Then, one of the shop masters where Kuma-san tendered their gardens came to visit.

"Danna-san, I would have come to you if you sent one of your boys," surprised and said Kuma-san. "Please come in. What could I do for you?"

"I wanted to make sure that you would continue to take care of my garden. It was my hasting," Danna-san started.

"Why don't you prepare some tea and sweet," said Kuma-san to Okami-san.

"Wait a second! Be careful. Kin-bo has a keen sense of smell. He always comes back whenever you take out some sweets for our guest."

"I found something! I found something! What is this, Dad? I think this is a doll's sward guard. This is round and has a square hall in the middle," Kin-bo came in.

"What a rascal! Go out and play," told Kuma-san.

"Oh! Is this your son? He does not know Tenpo-sen?" Surprised Danna-san and continued. "How old are you? Eight? I have a grandson who is eight years old as well. He tells me to give him some coins as soon as he sees me. What a difference!"

Kuma-san had a wry smile on his face and replied. "Yes, Sir. We try not to make our son greedy... Kin-bo. Why don't you throw that away? It is not clean."

Then, Kin-bo quickly replied. "Of course not! I will buy some baked sweet potatoes with this coin!"

## **Appendix 4: Account Books**

## 記録帳

日付	理由	収入	支出	合計

## Account Book

Date	Reason	Income	Expense	Balance

## **Bibliography**

Ball, Deborah Loavenberg. "What Makes a Mathematical Task Worthwhile?" Arithmetic Teacher 39, no. 1 (September 1991): 18-22.

An article about teaching standards. Explains how teachers need to improve teaching by creating mathematical tasks meaningful to students.

Beckmann, Sybill. "Solving Algebra and Other Story Problems with Simple Diagrams: A Method Demonstrated in Grade 4–6 Texts Used in Singapore." The Mathematics Educator 14, no. 1 (2004): 42-46.

An article about Singapore's mathematics teaching. Explains how students in Singapore learn to use a diagram to solve story problems and excel in solving algebraic and other mathematical problems.

Blanton, Maria L. Algebra and the Elementary Classroom: Transforming Thinking, Transforming Practice. Portsmouth, NH: Heinemann, 2008.

Resource book for teachers to help their students with mathematical understanding in elementary grades. This book includes how to introduce algebraic thinking, how to nurture algebraic thinking, how to develop algebraic thinking, strengthen algebraic thinking, and reinforce algebraic thinking.

Burns, Marilyn. A Collection of Math Lessons: From Grades 3 through 6. Sausalito, CA: Math Solutions Publications, 1987.

A collection of ideas for teaching mathematics through problem solving. Classroom vignettes provide lesson details and samples of students work. Good resource book for mathematics teaching.

Burns, Marilyn. About Teaching Mathematics: A K-8 Resource. Sausalito, CA: Math Solutions Publications, 2000.

The resource book for teachers to make appropriate and effective instructional decisions. This book includes sections how children learn mathematics, problem-solving activities, teaching arithmetic, and Mathematical discussions.

Burrill, Gail, and Portia C. Elliott. Thinking and Reasoning with Data and Chance.

Reston, VA: National Council of Teachers of Mathematics, 2006.

Resource book of collections of activates that focuses on students and teachers' learning statistics. Topics include the relation between mathematics and statistics, the development and enrichment of mathematical concepts through the use of statistics, and a discussion of the research related to teaching and learning statistics.

Carpenter, Thomas P., Elizabeth Fennema, Megan Loef. Franke, Lina Levi, and Susan B. Empson. Children's Mathematics Cognitively Guides Instruction. Portsmouth, NH: Heinemann, 2015.

Provides teachers with understanding of children's intuitive mathematical thinking. This book helps teachers to use that knowledge to support children learn mathematics with understanding.

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Furgang, Kathy, and Fredrik T. Hiebert. Everything Money. Washington, D.C.: National Geographic, 2013.

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The Doll's Sward Guard is one of the stories from the series re-written by the Rakugo-ka (Japanese professional storyteller) for children. A standalone storyteller usually tells these stories orally; however, the series of stories are for children to enjoy reading Rakugo. The stories are written in Japanese.

Iyo Gin Kids いよぎんキッズ. [Iyo Bank Kids]. Accessed October 17, 2016. http://www.iyobank.co.jp/kids/index.htm.

Website for students to learn about money, banking, and using capital. This site is run by one of the Japanese banks. The website is in Japanese. Students can try virtually to own a store of their choice if they could make some profit.

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Picture book about money. Good resource for students to learn about money including a history of money. Pictures will help students to understand about how money was created and developed into current money.

Mooney, Carla, and Tom Casteel. Explorers of the New World: Discover the Golden Age of Exploration. White River Junction, VT: Nomad Press, 2011.

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An article from kids' magazine about bills around the world. The article is in Japanese. It is a good resource for students to read about the pictures that printed on bills and what they represent.