

ONCE UPON A DIME

High School Lesson Plan

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Standards

New York

- 12.E1a: In making economic decisions in any role, individuals should consider the set of opportunities that they have, their resources (e.g., income and wealth), their preferences, and their ethics.

New Jersey

- 9.1.12.A.8: Analyze different forms of currency and how currency is used to exchange goods and services.

Connecticut

- ECO 9-12.3: Describe the roles of institutions such as clearly defined property rights and the rule of law in a market economy.

NCSS

- Production, Distribution, and Consumption
 - Questions for Exploration
 - What are different types of economic systems, and how do they function?
 - Knowledge: Learners will understand...
 - Scarcity and the uneven distribution of resources result in economic decisions and foster consequences that may support cooperation or conflict.
 - Processes: Learners will be able to...
 - Compare various ways in which countries improve the output of goods and services and increase the level of income earned from producing goods and services.

C3 Framework

- D.Eco.6.9-12: Generate possible explanations for a government role in markets when market inefficiencies exist.
- D1.Eco.9.9-12: Describe the roles of institutions such as clearly defined property rights and the rule of law in a market economy.
- D4.6.9-12: Use disciplinary and interdisciplinary lenses to understand the characteristics and causes of local, regional, and global problems; instances of such problems in multiple contexts; and challenges and opportunities faced by those trying to address these problems over time and place.



FEDERAL RESERVE BANK of NEW YORK

1 of 19

Grade Level

9-12

Time Required

120 Minutes

Compelling Question

How do societies organize themselves to satisfy citizens' wants and needs?

Supporting Questions

1. What are the advantages and disadvantages of a barter system?
2. How does money facilitate transactions?
3. How does a banking system affect economic possibilities?

Objectives**Supporting Question 1**

- Define the **double coincidence of wants**.
- Explain how **barter** makes economic transactions difficult.

Supporting Question 2

- Identify the **functions of money**.
- Explain how a well-functioning currency helps an economy grow.

Supporting Question 3

- Identify the services banks provide.
- Compare and contrast an economy that has a banking system with one that does not.

Materials

- Website: https://www.youtube.com/watch?v=F1_OoICS2b8
 - News Article (for those who cannot access YouTube at school): "How to Turn a Paper Clip into a House" (ABC News)
<http://abcnews.go.com/Technology/story?id=2192233&page=1>
- News article A: <http://www.denverpost.com/2009/08/27/colorado-cities-selling-own-limited-currency/>
- News article B: <http://wamc.org/post/local-berkshire-currency-celebrates-decade-mark>
- News article C: <http://www.paulglover.org/hourintro.html>
- Handout 1: Orick's Journey
- Handout 2: President Tilli's Plan
- Handout 3: The Double Coincidence of Wants
- Handout 4: DIMES
- Handout 5: Is This Money?



- Handout 6: Characteristics of Money
- Handout 7: What to Do with DIMES?
- Handout 8: Take It to the Bank!

Staging the Question

This lesson should be taught concurrently while students read *Once Upon a Dime*. As an introductory activity related to the idea of acquiring goods/services without money, teachers can show the YouTube video of Kyle MacDonald, who used a series of trades to turn a red paper clip into a house. The video serves as a good example of the idea of **barter**, but it also poses some questions. While students may be impressed with the feat, they may also ask if this is the most efficient way to get the goods and services they want. Using this as a starting point, teachers lead a broader discussion about how citizens in a society acquire goods and services. Teachers use this to introduce the broader concept of how society organizes itself to answer basic economic questions.

Procedures

Supporting Question 1: What are the advantages and disadvantages of a barter system?

1. Begin the lesson by asking students to summarize what occurred in the video shown for "Staging the Question" at the beginning of class. Ask the students why Kyle was able to successfully trade his way from a paper clip to a house. *(Students will say that Kyle found people who were willing to take the item he had in exchange for what they possessed.)*
2. Ask students if this is the method they use to acquire goods. *(Answers will vary. Some students will likely say they engage in trade often, while other students will likely talk about buying things with money.)* Explain that in some circumstances, trade makes a great deal of sense. Ask students how many of them know of anyone who has bought a house or a car with a paper clip. *(There will likely be few or no responses.)* Ask students if this method of acquiring goods or services meets their needs. *(Answers will vary, as again sometimes trading items is convenient and other times it is not.)* Explain to students that trading goods and services for other goods and services in an economy is called **barter**.¹
3. Remind students that the reason people **barter** is to acquire things they want or need. Explain that one of the most fundamental questions society can answer is how people acquire the goods and services they want.

¹ <http://lei.councilforeconed.org/glossary.php>



4. Using answers from Step 2, remind students that sometimes they trade items, but that some students also buy the things they want. Ask students why they sometimes trade and sometimes buy. (*Students will likely answer that they trade if each person has the thing the other wants, and they buy when that's not the case.*) Using the students' responses, explain that society often tries to organize itself around satisfying these wants and needs for its citizens.
5. Reveal to students that their responses from Step 4 have generated a question. Explain that over the next two days, students will answer the following compelling question: **How do societies organize themselves to satisfy citizens' wants and needs?** Tell students that this will be the driving question as they read the comic book. More specifically today, tell students that they will be analyzing a situation very similar to the one they saw in the paper clip video. Introduce students to the activity by telling them that they will answer the following supporting question: **What are the advantages and disadvantages of a barter system?**
6. Explain to students that they will be reading a comic book to help them answer this question. Distribute copies of the comic book *Once Upon a Dime* to students. Tell students that *Once Upon a Dime* takes place on the planet Novus, and they will be looking at the development of that planet's economy. Remind students of the compelling question from Step 5.
7. Tell students to read pages 1-8. Distribute a copy of Handout 1: Orick's Journey. Allow students time to read and answer the questions.
8. Debrief the students when all have had time to read. Suggested responses are below.
 - a. Suppose that on page 5, Lahna had wanted flowers in exchange for the whirly-doo backpack. How would that have changed Orick's day?
 - i. *Orick would have been easily able to make the trade. Orick had something that Lahna wanted, and Lahna wanted something that Orick had. He would not have had to travel around, and it would have been an easy trade.*
 - b. Using your answer to Question 1, what condition must exist in order for **barter** to be successful?
 - i. *Both individuals must have something that the other wants and be willing to exchange it. This is called the **double coincidence of wants**.*



- c. On page 6, how many doughnuts is BKR-3000 willing to trade for eggs? How does this number complicate Orick's situation?
 - i. *BKR-3000 wants 3 eggs for every 2.5 doughnuts. This is a complicated ratio that isn't easy to do in one's head. It also leaves Orick with .5 doughnuts left over, and .5 doughnuts is something that has little value on its own.*
 - d. What was the biggest cost to Orick as he attempted to make all of the transactions to acquire the whirly-doo backpack?
 - i. *Orick spent most of his day attempting to make the transactions. He had to travel around and attempt to find trading partners. He could have been doing other things with his time. The **barter** economy's biggest cost to Orick is the opportunity cost.*
9. Have students turn to page 8 and re-read the first panel. Distribute a copy of Handout 2: President Tilli's Plan. Explain to students that President Tilli has identified the problems that the students identified in Step 8. Working in groups, have the students play the role of President Tilli to solve the problem they identified.
10. Allow students time to complete the assignment.
11. Debrief the students, asking each group to give a brief overview of its plans. Keep track of students' responses, and note any similarities and differences between plans. *(While the groups may have disparate plans, there will likely be similarities as well. Some students are likely to suggest something that facilitates trade, like money, so note this particular suggestion, as it will be useful for the next supporting question.)*
12. Conclude the lesson by asking students to complete Handout 3: The Double Coincidence of Wants. Students should be able to define the **double coincidence of wants** and to explain how **barter** can complicate some transactions. Suggested responses are below.
- a. What is **barter**?
 - i. ***Barter** is an economic system where people trade goods and services to others to acquire the things they want.*
 - b. When is **barter** an easy transaction to make?
 - i. ***Barter** can be easy if both people have something the other wants. The costs of the transaction are low.*
 - c. When does **barter** create challenges in making economic transactions?
 - i. ***Barter** requires a **double coincidence of wants**. It can make transactions very complicated if people don't have mutually fulfilling needs for goods.*



Supporting Question 2: How does money facilitate transactions?

13. Begin this portion of the lesson by reviewing the student plans from Step 11. Remind students that one of the challenges of **barter** is dealing with the **double coincidence of wants**. If necessary, review pages 5-6 of *Once Upon a Dime* to see Orick's challenges in **bartering**.
14. Review the compelling question with students: **How do societies organize themselves to satisfy citizens' wants and needs?** Remind students that President Tilli was trying to think of a way to improve the economy of Novus, and point out that her request and the ideas the class generated in Step 11 are clear examples of students attempting to answer the compelling question. More specifically, explain to students that today they will be answering the supporting question: **How does money facilitate transactions?**
15. Tell students that they will now see how their own proposals to President Tilli compare with what is actually done. Distribute Handout 4: DIMES. Tell students to read pages 8-13. Allow students time to read and answer the questions.
16. Debrief the students when all have had time to read. Suggested responses are below.
 - a. What is a DIME?
 - i. *Short for "Do It More Efficiently," a DIME is a shiny rock that the entire planet of Novus has agreed to accept in exchange for goods and services.*
 - b. Why did the citizens reject the use of fish as a way to exchange goods?
 - i. *Fish are smelly, they go bad quickly, and they are large. This would make them a poor item to use as money, as nobody would want to keep them nearby because of the smell. In addition, they rot and go bad, so you could not keep them for a long time. Finally, fish are large and hard to carry and divide in the event you want to buy something that is worth "less than" one fish.*
 - c. What characteristics of DIMES make them usable?
 - i. *DIMES are small and portable for convenience. They have a design on them, which makes them hard to copy, so people can trust the currency. They also have the approval of President Tilli, and all of the citizens accept them as a form of payment.*
 - d. What happened to the economy of Novus as a result of the implementation of the DIME?



- i. *The economy grew. New businesses began and transactions became a lot easier.*
17. Remind students that fish were not a good form of currency, and review the reasons why. Explain that any form of money needs to have three key functions:²
- Unit of account:** Money is a “common” way to measure the value of an item. It allows you to compare the prices of goods throughout the economy. Money helps everyone on Novus understand that a galactic cruiser that costs 70,000 DIMES is more expensive than ice cream for 5 DIMES.
 - Store of value:** Money keeps its value for some period of time. If a person on Novus doesn’t spend her DIMES today, she can use them in a week or a month and they will buy a similar amount of goods. Fish are bad as a type of money because they go bad quickly, and thus do not store value.
 - Medium of exchange:** Money must be widely accepted as payment. On Novus, President Tilli decided that Rallo’s DIMES and dollars were the money supply. More important, the entire community agreed to use and accept this currency.
18. Explain to students that in the scenario on Novus, the money used resembles money they use. Ask students to recall three **functions of money** they established in Step 17 (**unit of account, store of value, medium of exchange**). Explain that a wide variety of things have acted as money.
19. Distribute Handout 5: Is This Money? Divide students into three groups. Explain that each group will look at a different, unique way to pay for goods and services.
- Group A will look at Butte Bucks and will read News article A.
 - Group B will look at BerkShares and will read News article B.
 - Group C will look at Ithaca Hours and will read News article C.
20. Allow students time to complete the assignment. Once each group is finished, form new groups so that one student from each of the original groups (A, B, and C) makes up the new groups. Have students share their responses and record similarities and differences between the different types of money using Handout 5.
21. Debrief the students when all have had time to finish. Students should be able to discuss the similarities and differences between the types of money.
22. Conclude the activity by asking students to compare the money they read about in their groups with the DIMES on Novus. (*Students should note that while there are some*

² <https://www.stlouisfed.org/education/economic-lowdown-podcast-series/episode-9-functions-of-money>



minor differences in the different types of money, in all cases the different types were part of an organized system whereby citizens could acquire the goods and services they wanted in exchange for an acceptable payment form.) Remind students of the question this activity is attempting to answer: **How does money facilitate transactions?** Ask students to answer the question. (Students should respond that money serves as a **unit of account**, so that goods and services can be given a price that is clear and understandable to all. Money also serves as a **store of value** and can be kept and saved for periods of time and used later. Finally, money is a **medium of exchange**, eliminating the problem of the **double coincidence of wants**.)

23. Using Handout 6: Characteristics of Money, students should identify the **functions of money** and be able to explain how money can help an economy grow. Suggested responses are below.
- a. Lahna lists the price of a whirly-doo backpack for 1000 DIMES and a wrench for 5 DIMES.
 - i. **Unit of account**
 - b. Orick puts 25 DIMES in the bank to use next year.
 - i. **Store of value**
 - c. Venny accepts a check from Rallo for 400 DIMES for patching his roof.
 - i. **Medium of exchange**
 - d. Renna compares the prices of two galactic cruisers.
 - i. **Unit of account**
 - e. President Tilli collects 15 DIMES from each citizen as payment of taxes.
 - i. **Medium of exchange**
 - f. How did the creation of DIMES help the economy of Novus grow?
 - i. A money system that meets all three **functions of money** allows citizens to have a growing economy. A **unit of account** allows for accurate comparisons of goods, a **medium of exchange** makes payment easier and helps the economy grow, and a **store of value** allows consumers and businesses to postpone spending or to borrow money in advance.

Supporting Question 3: How does a banking system affect economic possibilities?

24. Begin this portion of the lesson by reminding students of the **functions of money** they learned in Step 17 above. (Students should respond that money is a **unit of account**, **store of value**, and **medium of exchange**.)
25. Ask students for a list of things they can do with money. (Students will likely list a large number of items they can purchase. Some students may also say that you can save



money.) Ask students how they save money. (*While answers may vary, some students will likely point out that many people save money by putting it in the bank.*)

26. Explain to students that saving money is an important thing to do and that banks are one place where money can be saved. Ask students to think about the economy of Novus so far, and ask what the citizens can do with their money when they are not spending it. (*While students may give some ideas, or even say that the citizens of Novus can save it, ask students where specifically on Novus the citizens can save money.*)
27. Note this problem to students. To anchor the conversation, remind students that during the course of reading the comic, they have been attempting to answer the compelling question: **How do societies organize themselves to satisfy citizens' wants and needs?** Remind students that they have already examined **barter** and money as ways to answer this question and that today they will be looking at a third topic. Specifically, explain to students that in this activity they will answer the question: **How does a banking system affect economic possibilities?**
28. Explain to students that they are going to do a pre-reading activity. Distribute Handout 7: What to Do With DIMES? Pair students off and ask them to complete the pre-reading activity. Students should think of ways they would solve the problem they identified in Step 26. As students brainstorm ideas, encourage them to explain in their notes why their particular product or idea can help solve the problem they identified.
29. Debrief the students on the pre-reading activity as a class. Make a class list of the various ideas that students came up with to solve the problem of “how to save” that they identified in Step 26. Tell students that they should keep these ideas in mind as they read about how Novus solves that same problem.
30. Distribute Handout 8: Take It to the Bank! Ask students to read pages 13-20 of the comic.
31. Allow students time to complete the handout. Debrief the students by focusing on the similarities and differences of what happened on Novus with the ideas they proposed. Suggested responses are below:
 - a. Explain how a check functions on Novus.
 - i. A citizen writes and signs an authorization form that states that he/she has the dollars in the bank and that the money for the purchase can be transferred from his/her account to the person he/she is paying.



- b. Why did Venny the carpenter need some money from the bank? And why was Rallo willing to give him some?
 - i. *Venny's business was growing, and he had expenses for his business expansion that he couldn't pay out of pocket. By borrowing money from the bank, he can pay for his business expenses now and pay the money back later after he receives his profit. The bank benefits because it can charge Venny interest on the loan and make money from Venny's borrowing.*
- c. How did this arrangement improve the economy of Novus?
 - i. *Check writing and borrowing helped the economy to grow even more. Check writing made transactions easier, and borrowing allows businesses to expand and offer more goods and services.*
- d. Why did Rallo's bank run out of money?
 - i. *Rallo did not keep enough money in the form of reserves, and when a large group of citizens came to withdraw money, he was not able to cover all of the withdrawals.*
- e. How did Rallo's bank crisis affect other banks?
 - i. *Rallo had to try to borrow from another bank to cover his losses, but some citizens grew concerned about the health of the banking system and so they all went to withdraw their money. This affected even banks that were not in trouble.*

32. For a post-reading activity, direct students to look again at [Handout Z](#). Provide an opportunity for students to answer the post-reading questions, allowing them to reflect on their own thoughts and learning. Encourage students to articulate how they formulated their ideas.

Assessment

33. Remind students that the initial compelling question for the lesson was: **How do societies organize themselves to satisfy citizens' wants and needs?**
34. Ask students to imagine that they are historians on the planet Novus. They want to write the definitive history of how the economy of Novus evolved to meet citizens' wants and needs.
35. Students should create an interactive timeline or a newspaper article that tells the story of the evolution of the economy on Novus. Regardless of which product is chosen, students should cover the following topics:



- a. What are the advantages and disadvantages of a **barter** system?
- b. How does money facilitate transactions?
- c. How does a banking system affect economic possibilities?

36. Remind students that these are the supporting questions they answered while they read the comic and that each of the answers to those questions is a piece of the puzzle to answer the larger compelling question.

Taking Informed Actions

37. Remind students that they examined the evolution of the economy on Novus. Review the services that banks provided to the community and how the economy grew.
38. Explain to students that many places in the country do not have access to banking services. Use the following resources, and any others that the teacher or students can find, to research the number of people who are unbanked in your state, region, or city.
 - a. Federal Deposit Insurance Corporation Unbanked Survey:
<https://www.economicinclusion.gov/>
 - b. Urban Institute Interactive Map of the Unbanked in New York City:
<http://www.urban.org/interactive-map-where-are-unbanked-and-underbanked-new-york-city>
39. Students may wish to explore the ramifications of being unbanked in their own state or community. Students may also wish to explore ways to bring banking services to unbanked or underbanked populations.



ONCE UPON A DIME HANDOUT ①

Orick's Journey

Key Terms

Barter:

Double coincidence of wants:

Orick is on a quest: He needs a whirly-doo backpack in order to transport all of his flowers for the party. In the space below, draw an illustration to keep track of every trade that Orick must make in order to get the whirly-doo backpack (for instance, for the first trade, you can draw flowers for the backpack). At the end, count how many trades Orick would need to make.

Key Questions to Consider

1. Suppose that on page 5, Lahna had wanted flowers in exchange for the whirly-doo backpack. How would that have changed Orick's day?
2. Using your answer to Question 1, what condition must exist in order for **barter** to be successful?
3. On page 6, how many doughnuts is BKR-3000 willing to trade for eggs? How does this number complicate Orick's situation?
4. What was the biggest cost to Orick as he attempted to make all of the transactions to acquire the whirly-doo backpack?



ONCE UPON A DIME HANDOUT ②

President Tilli's Plan

As you have seen, **barter** and the **double coincidence of wants** have made planning the party on Novus very complicated. President Tilli has asked the citizens for advice, and she has put out a call for proposals from all of the citizens to come up with ideas. You are a resident of Novus who is incredibly frustrated with the time spent on trading, and you feel you can help.

Your task is to develop a method to make trade easier for the residents of Novus. Your plan needs to meet the following criteria:

- It needs to be easy for the citizens to implement
- It needs to eliminate the problem of the **double coincidence of wants**

In the space below, jot down the basic ideas of your plan. Be sure to explain how it meets both of the criteria that President Tilli listed above. Be prepared to defend your argument.

Dear President Tilli—

I want to thank you for asking for ideas from the citizens of Novus to solve this problem. It's been driving me crazy! But that also means I've given it a lot of thought.

I think that the best thing to do for the economy of Novus is to:

I believe that this will work for a few reasons. It's going to be easy to implement because:

*What I really like is that it eliminates the **double coincidence of wants** we've been dealing with! That's because:*

Thank you for considering my proposal!



ONCE UPON A DIME HANDOUT ③

The Double Coincidence of Wants

When is **barter** an easy transaction to make?



When does **barter** create challenges in making economic transactions?

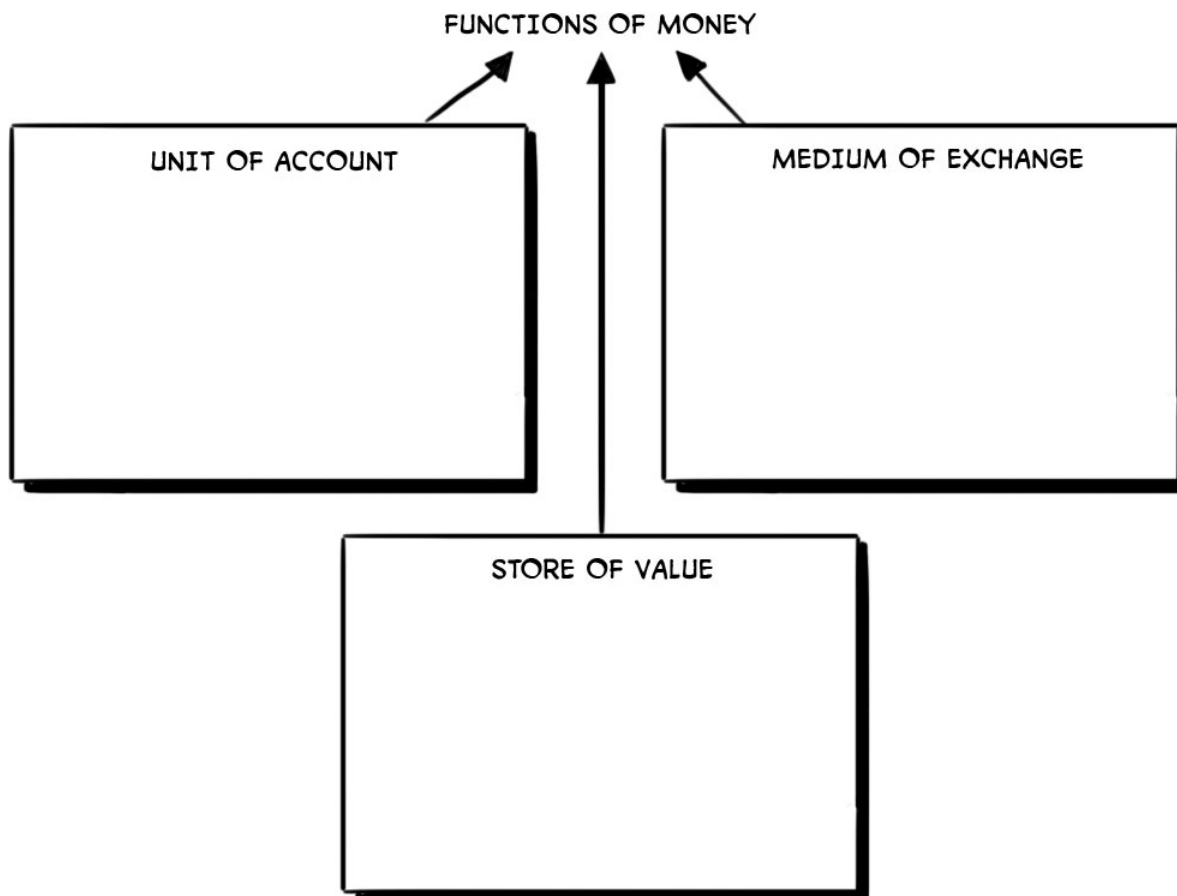


ONCE UPON A DIME HANDOUT 4

DIMES

Read pages 8-13 to discover how Novus solved its economic issue. As you read, consider the questions below:

1. What is a DIME?
2. Why did the citizens reject the use of fish as a way to exchange goods?
3. What characteristics of DIMES make them useable?
4. What happened to the economy of Novus as a result of the implementation of the DIME?



ONCE UPON A DIME HANDOUT 5

Is This Money?

Novus uses DIMES, and the United States uses dollars, but we've learned that they are both money. Different local currencies are used in some places throughout the United States. But are they money?

Read about each and share with your group. Use the space to list similarities and differences between the currencies.

GROUP A: BUTTE BUCKS

How does your currency work?

How does it meet the three **functions of money**:

Unit of account:

Store of value:

Medium of exchange:

GROUP B: BERKSHARES

How does your currency work?

How does it meet the three **functions of money**:

Unit of account:

Store of value:

Medium of exchange:

GROUP C: ITHACA HOURS

How does your currency work?

How does it meet the three **functions of money**:

Unit of account:

Store of value:

Medium of exchange:

SIMILARITIES	DIFFERENCES



ONCE UPON A DIME HANDOUT



Characteristics of Money

For each of these scenarios, state whether money is functioning as a **unit of account**, a **store of value**, or a **medium of exchange**.

1. Lahna lists the price of a whirly-doo backpack for 1000 DIMES and a wrench for 5 DIMES.
2. Orick puts 25 DIMES in the bank to use next year.
3. Venny accepts a check from Rallo for 400 DIMES for patching his roof.
4. Renna compares the prices of two galactic cruisers.
5. President Tilli collects 15 DIMES from each citizen as payment of taxes.
6. How did the creation of DIMES help the economy of Novus grow?



ONCE UPON A DIME HANDOUT 7

What to Do with DIMES?

Pre-reading activity

You have seen that the citizens of Novus love to spend money. Ice cream, galactic cruisers... life is good if you need something on Novus. But what should you do with the DIMES you're not eating or driving around?

In the space below, brainstorm some of the other things that the citizens of Novus could use their DIMES for besides purchasing goods and services. In other words, we're asking you to think about how people use their money.

List things the citizens of Novus could do with DIMES besides spend them.

Post-reading activity

You've now read about some of the things the people of Novus could do with their DIMES besides spend them.

1. What similar things did you list that the citizens of Novus ended up doing?
2. What made you think about these things?
3. What are some things the citizens of Novus did that you did not think of?



ONCE UPON A DIME HANDOUT 8

Take It to the Bank!

The citizens of Novus have made their economy more efficient with DIMES, but what's next?

Read pages 13-20. As you read, consider the questions below.

1. Explain how a check functions on Novus.
2. Why did Venny the carpenter need some money from the bank? And why was Rallo willing to give him some?
3. How did this arrangement improve the economy of Novus?
4. Why did Rallo's bank run out of money?
5. How did Rallo's bank crisis affect other banks?

