

National Debt Unit Plan

Title: National Debt

Description: Did you know that of the many countries currently in debt, the United States leads the way? The U.S. national debt in 2003 stood at more than seven trillion U.S. dollars (that is \$7,000,000,000,000)! How big is this *really*? Is it a problem? What are the consequences of this huge debt? Should the country's youth have to pay off the debt? Students explore these questions as they research the national debt, its magnitude, and its consequences, and investigate the issues involved in having a large national debt.

At a Glance

Grade Level: 7–9

Subject sort (for Web site index): Social Studies, Mathematics

Subject(s): Government, Economics

Topics: Debt, National Economy

Higher-Order Thinking Skills: Problem Solving, Analysis, Decision Making

Key Learnings: Large Numbers, Debt, Deficit, National Budget Implications, Constructing an Argument

Time Needed: 45-minute lessons, 7 lessons

Unit Summary

After defining national debt and exploring the magnitude of a billion and trillion in multiple contexts and visual representations, students work in teams to answer the questions, *How big is a seven trillion U.S. dollar debt?* and *What are the implications for us as teenagers?* Student teams research the problem and also answer the question, *What are the consequences of a seven trillion U.S. dollar debt and what should be done about it?* Students use the *Showing Evidence Tool* to make an informed claim about the problem and provide evidence to back up their claim. They synthesize what they learn into an argument that persuades their local congressional representatives to consider their opinion.

Curriculum-Framing Questions

- **Essential Question**

Should we spend more than we have?

- **Unit Questions**

How big is a seven trillion U.S. dollar debt?

Who should be responsible for the debt?

Why should we worry about a seven trillion U.S. dollar debt?

- **Content Questions**

What is debt?

What is a national deficit?

How much is a billion?

How much is a trillion?

Assessment Processes

View how a variety of student-centered [assessments](#) are used in the National Debt Unit Plan. These assessments help students and teachers set goals; monitor student progress; provide feedback; assess thinking, processes, performances, and products; and reflect on learning throughout the learning cycle.

Instructional Procedures

Prior to Instruction

This unit of study makes use of the *Showing Evidence Tool*. Examine the [Showing Evidence Tool](#) [\[link to Web site\]](#) as you plan instruction to learn about the tool and how to use it with your students.

Setting the Stage

Pose the Essential Question, *Should we spend more than we have?* Organize students into small groups and have them discuss the Essential Question and record their initial responses. Encourage them to talk about why they think we should or should not spend more than we have as well as the consequences for spending more than we have.

Ask several students to share their responses to the Essential Question, and then tell the class that they will complete a unit that examines the questions, *What is so big about a seven trillion U.S. dollar debt?* and *Why should we worry about a seven trillion U.S. dollar debt?*

Understanding Large Numbers

Tell students that they will examine the Unit Question, *How big is a seven trillion U.S. dollar debt?* as well as the specific Content Questions, *How much is a billion?* and *How much is a trillion?* The following exercises help students understand the magnitude of the numbers they will be dealing with in examining the national debt.

Day 1

Pose the following question to your students: *If I gave you \$1,000 a day, seven days a week, how long would it take you to collect one billion U.S. dollars?* Have students assume no money is being spent and no interest is earned. (Answer: 2,737 years, 10 months, 7 days) Allow students to explain how they arrived at their answers. Hold a discussion around problem solving strategies and call attention to the various strategies students used to find a solution to the problem.

Encourage students to use strategies from the discussion to answer the following questions:

- *How long would it take to accumulate one million dollars?* (Answer: 2 years, 8 months, 26 days)
- *How long would it take to accumulate one trillion dollars?* (Answer: 2,737,850 years, 9 months, 13 days)

After students complete the problems, ask a few students to use the board to explain their solutions to the class. Lead a whole-class discussion around the question, *What is the difference between one million, one billion, and one trillion?* Have students first record their thoughts in a journal before they share with the class. Take anecdotal notes as students work and share their strategies.

Review student journals and anecdotal notes, and provide additional instruction as necessary.

Day 2

Have students go to the [U.S. National Debt Clock Web site](#)* and record the exact

amount of the debt and the exact time. They should then wait one minute, press the Refresh or Reload button on their browser, and then write down the new amount and time. Repeat this three or four times, keeping track of the amount and time in a chart. Next, tell students to calculate the average amount the national debt increased in one minute.

Have students create spreadsheets showing what could have been purchased with the amount the national debt increased in one minute. Circulate through the room as students work, asking questions and providing help as necessary. Tell students they can use estimates and catalogs, newspapers, and so forth. On the spreadsheets, have students use the sum function to automatically total the amounts.

Understanding Debt

The following U.S.-specific activities can be adapted to fit any country's data.

National Debt

Working in teams, have students research the following questions:

- *What is national debt?*
- *What is national deficit?*
- *What is the difference between the national debt and national deficit?*

Next, have teams research and come to a conclusion on the questions, *Is having more than seven trillion U.S. dollars in national debt a problem? Why or why not?* Require students to use quotations, facts, numbers, and examples from their research to make a sound argument.

Balancing the Budget

Give students the [Budget Experiment Handout](#) and the [Balancing Budget Handout](#) to use while completing the activity. Have student teams visit the [Budget Explorer Web site](#)* and estimate the percentage of the federal budget spent on each item. Ask each team to look through the departments and programs that receive funding from the federal government, and discuss with their group members how they think the U.S. government should divide the budget. (Hint: Students may want to look for huge expenditures and trim them, or find smaller programs to get rid of entirely.) Students decide as a group which expenditures they would reduce and which should receive more funding. Have students analyze what happens to the budget when they start to increase and decrease areas based on what their group considers important. Each team should continue until either the team has reached a balanced budget, reduced the deficit, or increased funding to areas they think will increase the country's wealth.

As teams work on their research and budget, circulate through the room asking probing questions, offering feedback, and taking anecdotal notes on individual students and group processes.

Using Showing Evidence

Before proceeding with the next activity, click [here](#) to set up the [National Debt project](#) in your workspace. Introduce the *Showing Evidence Tool* by using the demonstration space at [Try the Tool](#). Show students how to make claims, evaluate claims, and create evidence. If students have limited experience in making claims and providing evidence, demonstrate the process with the whole class. A step-by-step demonstration can help students access and use the *Showing Evidence Tool* effectively. For example, show students how to make a claim and then have them make one on their own, show them how to create and link evidence, and then have them practice on their own.

Have a class discussion about what qualifiers should be used for rating evidence. Come to a class agreement about the qualifiers, and post them on a chart so that students can refer to the list when they rate their evidence. Also, call attention to the Comment section of the tool, and have students use the space to write their conclusions.

Have students log in to their *Showing Evidence* team space. Point out the prompt that guides their work: *Is a seven trillion U.S. dollar debt a problem?* Have each student group use their research from the previous activities to make claims and back them up with evidence, making sure to rate their evidence. Students should continue their research and find more evidence to either support or refute their claims. Provide students with the [tool rubric](#) to help guide them in the process.

As students work, use the [observation sheet](#) to record how students interact in small groups.

After students finish the exercise, have students peer review each other's claims, evidence, and rationale. Direct students to discuss each other's comments about the relative merit of each claim and each piece of evidence. Encourage groups to revise their thinking based on what they learn from the peer review.

Examining the Showing Evidence Activity

The *Showing Evidence Tool* space below represents one team's investigation in this project. The case you see is functional. You can double-click on the evidence to read the team's descriptions.

[insert live tool view here—see [file management spreadsheet](#)]

Presenting the Findings

Provide students with the following guidelines for their presentation of findings:

Using your balancing budget work and your Showing Evidence work, your team will choose a medium to make a case to lawmakers about the national debt. You can choose to write a persuasive essay, create a [multimedia presentation](#), or produce a videotaped commercial to make your case. You may choose how you make your case, but whichever medium you choose, you must have a well-researched and communicated argument that includes evidence to support your claims to lawmakers.

Hand out the [final project rubric](#) and discuss the criteria for assessment with the students.

As students work on their presentations, schedule conferences to provide feedback on drafts, ask probing questions, and redirect work as needed. Use notes from the [observation sheet](#) to provide structure for the conferences.

Final Reflection

As a class, reflect on the Essential Question and Unit Questions. Have students write their thoughts in a journal about each of them:

- *Should we spend more than we have?*
- *How big is a seven trillion U.S. dollar debt?*
- *Why should we worry about a seven trillion U.S. dollar debt?*

Prerequisite Skills

- Ability to compare and operate with numbers into the trillions
- Experience using graphs to organize, display, and interpret data
- Familiarity with multimedia presentation software

Differentiated Instruction

Resource Student

- Make modifications as dictated in the student's Individualized Educational Plan (IEP)
- Provide visual aids and examples (such as documents, charts, and examples from this Unit Plan)
- Supply an outline of the tasks and timeline for the project (including milestones)
- Select groups best suited to work with the student
- Provide extra time as needed to complete individual assignments

Gifted Student

- Have the student send a persuasive case to a political official, searching the Web for e-mail addresses and Web sites of local politicians
- Encourage the student to do more extensive research on each budget item by returning to www.kowaldesign.com/budget/money.html* (each of the blue links in this budget goes directly to the Web site for that federal department or program; the student can dig deeper into the more costly or obscure areas of the federal budget and create a presentation to teach the class what they learned through their further investigation)

English Language Learner

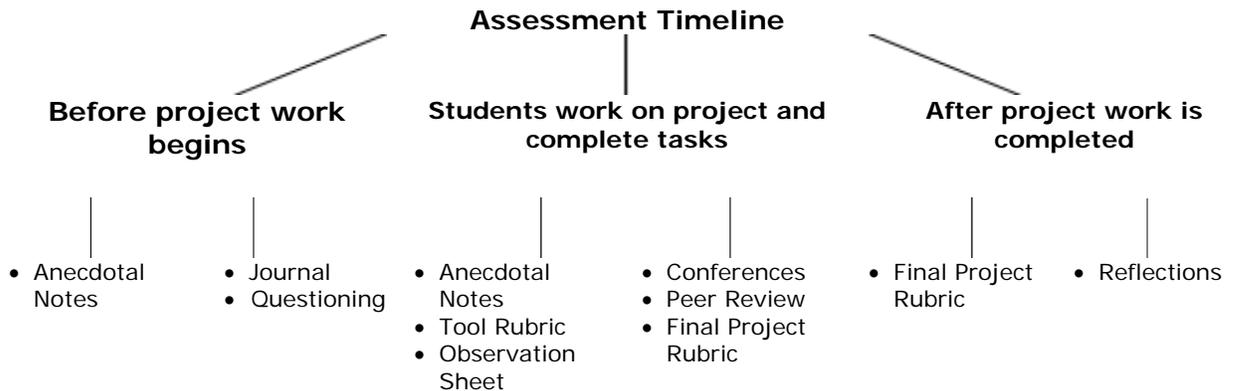
- Provide visual aids and examples (documents, visuals, and examples from this Unit Plan)
- Link the unit to the student's prior knowledge and experiences, maybe relating debt to borrowing money from others
- Use visual organizers (charts, tables, Web sites, and so forth) to help the student understand and conceptualize the content

Credits

A teacher contributed this idea for a classroom project. A team of educators expanded the plan into the example you see here.

THINGS YOU NEED (highlight box)

Assessment Plan



Use both informal and formal methods for checking student understanding. Use the [observation sheet](#) to record how students interact in small groups. To gain more insight into students' thinking, take anecdotal notes and ask probing questions, such as: *How did you decide? What is your evidence and reasoning for the claim you made? Tell me more about your thinking.* Other informal assessments include, previewing drafts and journals, and giving students feedback as they work through project activities during scheduled conferences.

Students use the [tool rubric](#) as they work on the *Showing Evidence* activity and self-assess after they complete the activity. Encourage students to consult each other by checking their work with their group members and providing peer feedback. Final assessment of the project learning goals can be made using the [final project rubric](#).

Targeted Content Standards and Benchmarks

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National Council of Teachers of Mathematics (NCTM) Content Standards:

Number and Operations Standard for Grades 6–8 and 9–12

In grades 6–12 all students should:

- Understand numbers, ways of representing numbers, relationships among numbers, and number systems
- Develop an understanding of large numbers and recognize and appropriately use exponential, scientific, and calculator notation
- Develop a deeper understanding of very large and very small numbers and of various representations of them
- Judge the effects of such operations as multiplication, division, and computing powers and roots on the magnitude of quantities
- Judge the reasonableness of numerical computations and their results

Problem Solving Standard for Grades 6–12

In grades 6–8 instructional programs should enable all students to:

- Solve problems that arise in mathematics and in other contexts
- Build new mathematical knowledge through problem solving
- Apply and adapt a variety of appropriate strategies to solve problems

- Monitor and reflect on the process of mathematical problem solving

Connections Standard for Grades 6–12

In grades 6–8 instructional programs should enable all students to:

- Recognize and use connections among mathematical ideas
- Understand how mathematical ideas interconnect and build on one another to produce a coherent whole
- Recognize and apply mathematics in contexts outside of mathematics

Student Objectives

Students will be able to:

- Develop a deeper understanding of a billion, trillion, and various representations of these numbers
- Grasp the difference between a billion and a trillion
- Become familiar with various ways of representing large numbers
- Develop a deeper understanding of the effect of computing powers of 10 on the magnitudes of quantities
- Define national debt and budget deficits, and understand the differences between them
- Analyze current trends in national debt in terms of allocations, deficits, and surpluses

Materials and Resources

Printed Materials

- Catalogs and newspapers
- Books on large numbers or debt
- Newspaper articles about the national debt
- Newspapers that show various representations of large numbers

Internet Resources

- Bureau of Public Debt
www.publicdebt.treas.gov/opd/opdfaq.htm*
Frequently asked questions about the debt
- The Concord Coalition
www.concordcoalition.org/issues/fedbudget*
Charts and graphs of the federal debt from 1940–2005
- National Debt Awareness Center
www.federalbudget.com*
Graph of federal spending; comparison between deficit and debt
- A Citizen’s Guide to the Federal Budget
www.whitehouse.gov/omb/budget/fy2002/guide.html*
Outlines how the federal government raises revenues and spends money, how the President and Congress enact the budget
- America’s Debate
www.americasdebate.com/forums/index.php?showtopic=8634*
Threaded discussion about the national debt

Technology—Hardware

- Computer for access to the *Showing Evidence Tool*, research, and other class activities
- Projector for presentation
- Internet connectivity to access Web sites

Technology—Software

- Multimedia software to create presentations
- Word processing software for math activities
- Spreadsheet software for math activities
- Internet browser to access the *Showing Evidence Tool* and Web sites for research