

National Debt

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 Ouestions

What is debt?
What is a national deficit?
How much is a billion?
How much is a trillion?

At a Glance

Grade Level: 7–9 **Subjects:** 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

Things You Need

Assessment Standards Resources

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* 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.

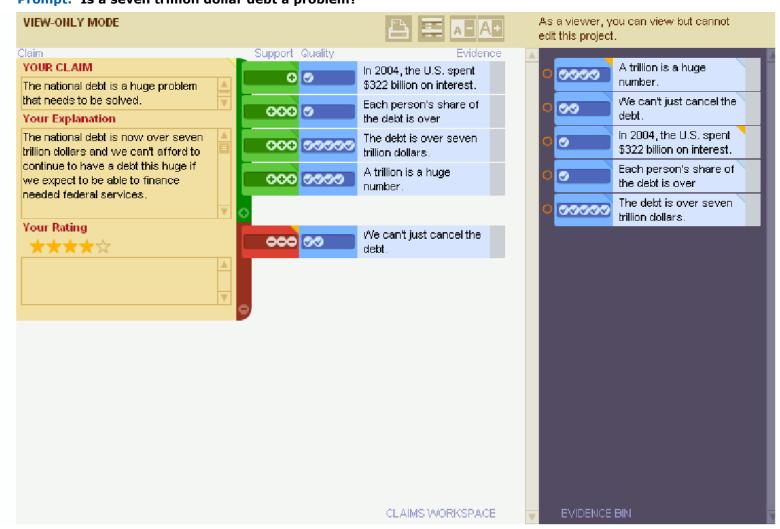
As students work, use the observation sheet to record how students interact in small groups.

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.

Project Name: National Debt (Click here to set up this project in your workspce) **Prompt:** Is a seven trillion dollar debt a problem?



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

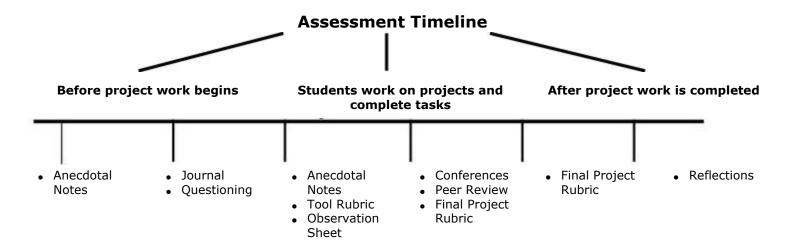
Credits

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

Showing Evidence Tool: National Debt

Assessment Plan

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.

Showing Evidence Tool: National Debt

Content Standards and Objectives

Targeted Content Standards and Benchmarks

Targeted 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 and a trillion and of various representations of these numbers
- Grasp the difference between a billion and a trillion
- Become familiar with different 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 difference between them
- Analyze current trends in national debt in terms of allocations, deficits, and surpluses

Showing Evidence Tool: National Debt

Resources

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 Debtw

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

Student Observation Sheet

Students can be observed individually and as they work in groups. The purpose of an observation can be for content objectives or for affective characteristics.

		Notes
Student Work	Does the student:	140103
Habits	Consistently work alone or with others?	
	Try to help others? In what ways?	
	Succeed in asking for and getting needed help? From whom?	
	Stick to the task or become easily distracted?	
	Become actively involved in the problem?	
Student Ideas	Does student individually:	
	Try to explain their organizational and mathematical ideas?	
	Support their arguments with evidence?	
	Consider seriously and use the suggestions and ideas of others?	
	Attempt to convince others that their own thinking is relevant?	
Communication	Does the student:	
	Talk for self-clarification and to communicate to others?	
	Comfortably fill the role of both "talker" and "listener"?	
	Have confidence to make a report to the whole class?	
	Capably represent a group consensus as well as own ideas?	
	Synthesize and summarize their own or their group's thinking?	

Cooperation	Does the group:
	Divide the task among the members?
	Agree on a plan or structure for tackling the task?
	Take time to ensure that they all understand the task?
	Use group time in a productive way?
	Provide support for each member?
	Think about recording or documenting group work?
	Allow for the development of leadership?

Tool Rubric

	4	3	2	1
Claim	My claim is clearly stated, focused on the topic, and thoroughly explained. My claim rating reflects a realistic, detailed understanding of the process.	My claim is stated, focused on the topic, and explained. My claim rating reflects a realistic understanding of the process.	My claim is stated, focused on the topic, and somewhat explained. My explanation does not show full understanding of the topic or claim's complexity. My claim rating reflects a somewhat realistic understanding of the	My claim is stated unclearly, or it is unfocused on the topic. My explanation is missing or shows a lack of understanding of the topic. My claim rating is incomplete or unrealistic.
Evidence	I present a clear and accurate treatment of all available evidence that addresses the central point of the claim. All evidence is properly documented and assessed.	I present all relevant evidence needed to support the claim with no major errors. Most evidence is properly documented, and all is properly assessed.	I provide evidence for the claim but do not address all necessary aspects. Most evidence is properly documented and assessed.	I fail to provide convincing evidence for the claim. I show a lack of understanding of proper documentation and assessment.
Analysis of Evidence	I show an understanding of the complexity of the evidence in relation to the claim. My rationale of support and nonsupport reflects an understanding of multiple factors and perspectives.	I show a clear understanding of evidence in relation to the claim. My rationale of support and nonsupport reflects a partial understanding of multiple factors and perspectives.	I show a basic understanding of evidence in relation to the claim. My rationale of support and nonsupport does not reflect a depth of understanding.	My understanding of the evidence-claim relationship is weak or inconsistent. My rationale does not support my rating.
Conclusion	My conclusion reflects an understanding of the depth and complexity of the topic based on evidence gathered. Possible counterarguments are thoroughly addressed. My conclusion is clearly related to the claim, and described thoroughly and accurately.	My conclusion reflects an understanding of the topic based on evidence gathered. Possible counterarguments are explained with little detail. My conclusion is clearly related to the claim.	My conclusion reflects some understanding of the topic based on evidence gathered. Possible counterarguments are only mentioned. My conclusion is somewhat related to the claim.	My conclusion is not related to the claim, or it does not show a relationship between the claim and evidence. Possible counterarguments are not addressed.

NATIONAL DE	BT FINAL PRESI	ENTATION RUBF	RIC
4	3	2	

NATIONAL DEBT FINAL PRESENTATION RUBRIC				
	4	3	2	1
Content Understanding	Reflects thorough understanding of debt, deficit, and the magnitude of a trillion, with relevant examples, definitions, and comparisons. Clearly connects new information to previous knowledge gained in earlier lessons. Uses accurate and relevant evidence to effectively support opinions and claims.	Demonstrates substantial understanding of debt, deficit, and the magnitude of a trillion, but some supporting ideas or details are overlooked or misunderstood. Clearly demonstrates that significant learning has taken place. Demonstrates an ability to discuss the topic using examples and evidence.	Demonstrates gaps in understanding of debt, deficit, and the magnitude of a trillion. Demonstrates that some learning has taken place. Uses some evidence to support claims and demonstrates an effort to go beyond copying and pasting information from Web pages.	Demonstrates minimal understanding of debt, deficit, and the magnitude of a trillion. Demonstrates that little learning has taken place. Provides no evidence to support claims and demonstrates that little more was done than copying and pasting information from Web pages.
Processes	Chooses and invents, as necessary, efficient and effective processes to complete the project.	Chooses processes that allow the project to be completed.	Needs assistance in choosing processes required to complete the project.	Needs assistance to complete basic steps of the project.
Components	Completes all components of the task.	Completes the most important components of the task.	Completes some components of the task, but not the most important components.	Completes few or none of the components of the task.
Communication	Communicates effectively by conveying clear, focused main ideas supported by well- chosen details and examples.	Communicates completely by conveying main ideas supported by relevant details and examples.	Communicates partially by conveying main ideas that are not effectively supported.	Communicates in a limited manner and neither presents nor supports main ideas.
Presentation and Organization	Matches the topic, audience, and purpose throughout the entire presentation.	Matches the topic, audience, and purpose throughout most of the presentation.	Matches the topic, audience, or purpose at times. Does not effectively add to the audience's	Does not match the topic, audience, and purpose. Detracts from the audience's
	Enhances the audience's understanding of the content.	Somewhat enhances the audience's understanding of the content.	content. con Presents some Pre	understanding of the content. Present information in a disorganized
	Presents information in a clear sequence.	Presents information in order.	order.	manner.

Budget Experiment Handout

Go to: http://www.kowaldesign.com/budget/money.html. The first activity is to actually allocate the federal budget. You'll answer the question: Where Does Your Money Go? You can change the percentages according to how you believe they should be allocated. Follow the procedures below:

 Use the pull down menus to select the percentage that you believe or want to be allocated to each category.



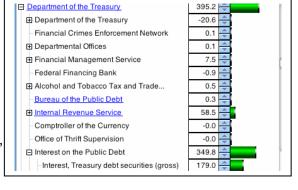
2. When you've finished making changes, click on the link:



3. The Budget Explorer will then give you feedback on your budget. If you were testing how well you knew the real allocations, see how you closely you got. If you were choosing percentages based on what you wanted the amounts to be, use the feedback to see what areas of the budget you'll be trying to increase or decrease when it's your turn to adjust the actual budget amounts. After you've read (and printed or saved) the feedback, click on the next link:

Next: The Complete US Federal Budget

- 4. On this click you'll have the actual figures from the Federal Budget. Scroll down and click on "Department of the Treasury" and then "Internal Revenue Service" to expand the listing in that category.
 - What amount is set aside for interest on the public debt? What is interest?
 - What is the unit? dollars? thousands of dollars, millions? billions, trillions?
 - What benefit do you think Americans get from this large expenditure?
- 5. Watch what happens to the Deficit / Surplus dial if you reduce the interest level a little with the toggle down arrow. Watch what happens to the Deficit / Surplus dial if you reduce the interest level to "0".

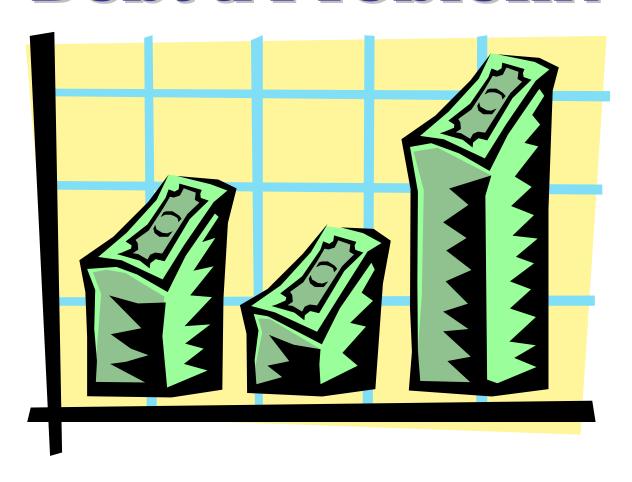




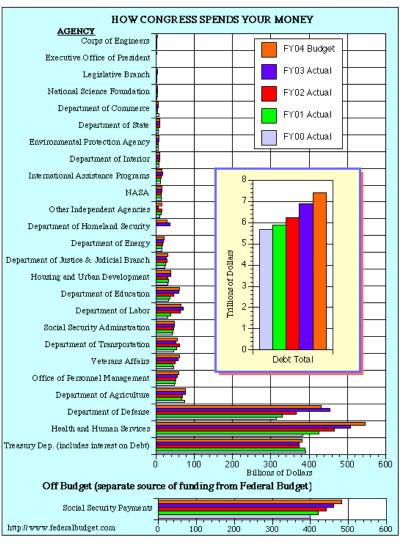
Balancing Budget Handout

1.	As a team, return to the Web site: http://www.kowaldesign.com/budget/money.html
2.	Look through the departments and programs that receive funding from the federal government and discuss with your group members how you think the U.S. government allocate its budget. (Hint: You may want to look for huge expenditures and trim them or find smaller programs to rid of entirely.)
3.	Decide as a group, by agency name, which expenditures you will trim. List these. Are there areas that should receive more funding? List these.
4.	Analyze what happens to the budget when you start to increase and decrease areas based upon what your group feels is important. Explain your analysis.
5.	Continue until you have reached a balanced budge, reduced the deficit, or increased funding to areas you think will increase the country's wealth.
6.	When you've achieved a set of allocations that your team believes in, click the link labeled "Next: Results of your changes." If this is the way your team believes the U.S. budget should be, you can save your results by choosing "File: Save As". If you save the file as an HTML document, you will get the charts displayed. (You will use this data in the final project in which you make your persuasive case to lawmakers.)

Is a 7 Trillion Dollar Debt a Problem?

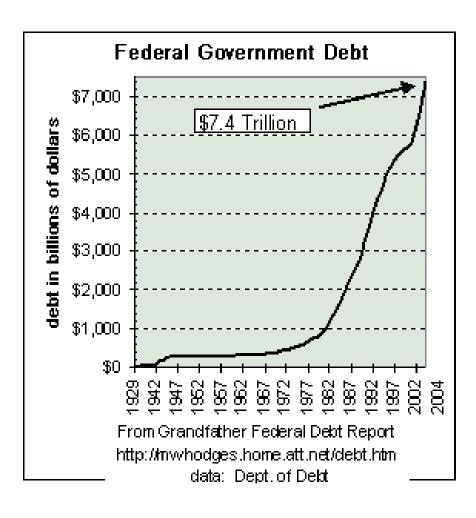


Our Current Situation



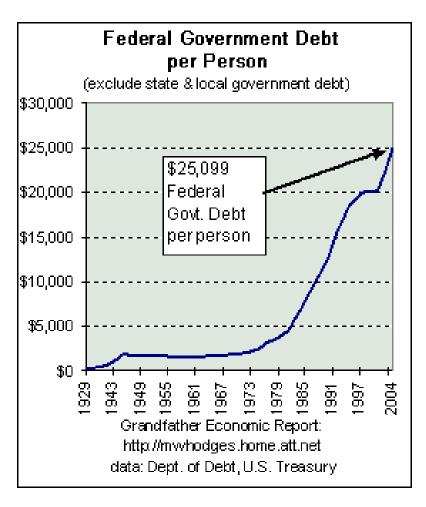
- Our current National Debt stands at \$7.4 trillion dollars.
- International debt is expanding at \$500 billion annually, due to decades of negative trade performance.

Our Country's Debt History



- The 75-year history of our government's debt shows that we started with a \$16 billion dollar debt and by 2004 it was 463 times larger, rising exponentially to \$7.4 Trillion.
- Nearly half of our current debt occurred in the 1990's.

Debt per Man, Woman and Child



- By the end of fiscal year 2004 federal debt was \$25,099 per child
- A family of four shared \$100,396 of the federal government debt.
- Half of this was created in the 1990s.

Why Should We Worry About a \$7 Trillion Debt?

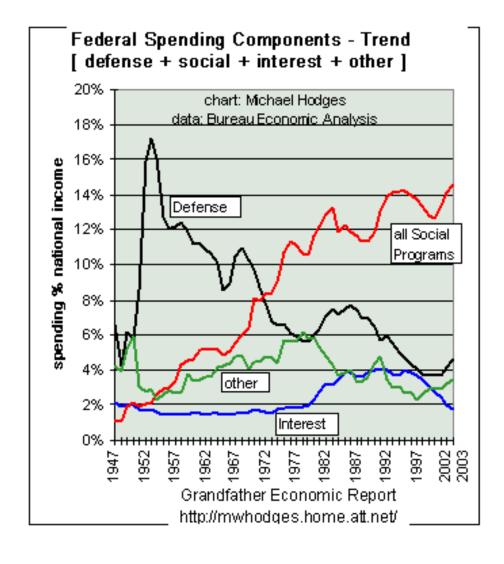


It Unfairly Affects the Young Generation

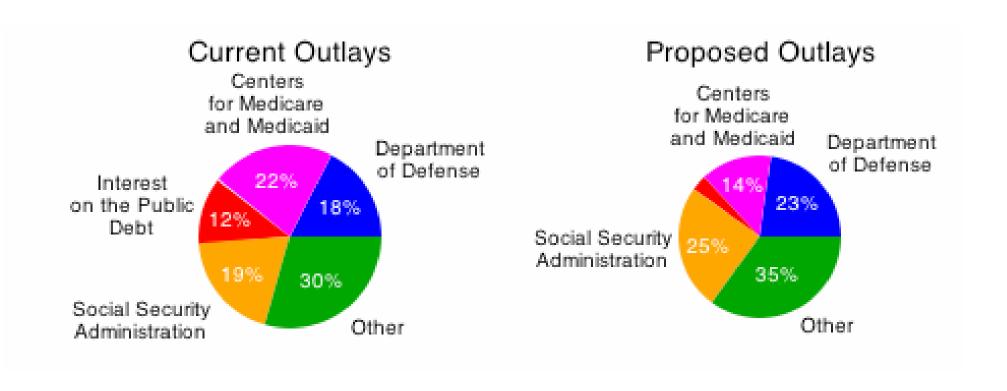
- There is no benefit to the young generation in inheriting a huge national debt, only major burdens.
- Today's young families are paying a significantly higher percentage of their income for social and Medicare spending and higher total taxes than did their grandparents.
- They will NEVER see even the same level of benefits!

What Can We Do About It?

Lower current
 spending on social
 programs such as
 Medicare,
 Medicaid/heath, and
 welfare income.



A Proposed New Budget



What are the Changes?

- Increased spending in the following areas:
 - Social Security Administration
 - Because many of the older generation that relies on Social Security to pay for rent and food don't have enough money for just the basics.
 - Department of Defense
 - Because we are in the midst of war and I figured this would increase no matter what, so I increased the spending.

Decreased Spending For:

Centers for Medicare and Medicaid

 I didn't decrease this very much, but decreased it a bit to try and get rid of the bureaucracy involved in these programs.

Interest on the Public Debt

 Because I felt that the government should be able to say what the interest is on the debt and the interest is way too high to be paying.

Results of The Changes

- A balanced budget!
- A surplus of 232.7 billion dollars!

Why Should We Use This Budget?

- Because it balances the budget and the young generation will not have to inherit a huge national debt by lowering spending on social programs
 - We know this is tough, but it needs to be done!
- Because it lowers the interest rate we are currently paying:
 - Don't we get to say what amount of interest we should pay?
- And, most importantly, Because it is a solution to our national debt

crisis!