Individuals need to know that responsible money management is not rocket science, but the financial cost of not starting to save today can have a serious impact on their financial well-being 10, 20 or 30 years down the line.

-Don Blandin, President American Saving Education Council

Section IV
Savings and Investment
Investment: Does Money Grow?

Most high school students graduate with no understanding of the basic principles of financial planning. In today’s society, more and more companies are expecting their workers to plan and prepare for their own futures. Companies are no longer guaranteeing a pension for their employees upon retirement, so today’s future employees need to learn about money and how to put it to work for their future. This expectation is very confusing to many workers who have no understanding of the value of investing and long-term planning.

This lesson is devised to introduce students to the rewards of long range planning and delayed gratification to achieve the larger goal of financial security. Students will gain a fundamental introduction to the “use of money”. This two-day lesson plan includes graphics showing students the long-term results of saving early and the risk levels involved with types of investments.
Investment – Does Money Grow?

NCSCOS Civics and Economics Goal and Objective(s):

7.05 Explain the impact of investment on human, capital, productive, and natural resources.

Warm-Up/Bell Ringer Activity:
The teacher will write the following question on the board, "When should you start saving for retirement? Why?"

Key Questions:
1. When should you start saving?

2. What impact do time and interest rates have on investments?

Materials Needed:
- "Results of Early Investment" student handout
- "Rule Of 72" overhead transparency
- "Example of Rule of 72" student activity
- "The Greater the Risk, the Greater the Reward" overhead/student handout
- "Investment Triangle" student handout
- "Risk Scale" activity sheet

Time/Pacing:
One-two class periods

Link(s) to Prior Learning:
Savings accounts, jobs and any discussions on long-term goals.

Purpose/Objective of this Lesson:
The students will understand that the younger you start saving the better.

Teacher Input:
Introduce the investment information and lead the discussions. Explain Compound Interest (Using the "Results of Early Investment" student handout).
Continuous Assessment:
Discussion, Results of practice

Strategies for Differentiation:
Using the Internet, students are to compare interest rates between savings accounts, CD’s, savings bonds and one local municipal bond.

Class Activity

Guided Practice:

1. Discuss the warm-up activity. Why do you think the answer you selected is the "right time" to start saving for retirement? Do you think that your goals over time might change?

2. Distribute the "Results of Early Investment" student handout. Point out the difference in the amounts invested and the results. What do you think would make that difference?

3. Pass out the student activity sheet, "Example of Rule of 72". Use the "Rule of 72" overhead transparency to explain that 72 divided by the interest rate will give you the answer of how long it will take to double your money. Show students how it takes money less time to grow the higher the interest rate.

Independent Practice:
Write five different ages on the board and give students one set amount of money to deposit. The average rate of return is 8%. Have students determine the period of time to double their money, depending on their given age.
Guided Practice:

1. Pass out the “The Greater the Risk, The Greater the Reward” student handout and project this handout on the overhead. The teacher will highlight the advantages of each of the different types of investment.

2. Pass out the handout of the “Investment Triangle” pointing out the different types of investment at different risk levels.

Independent Practice:
The teacher draws on the board/overhead a spectrum with no risk on one end and extreme risk at the other end. Have the students come up and sign their names on the spectrum where they think they would be comfortable investing and explain why (that is their present Risk Quotient).

Summary/Closure:
Explain that at different times in your life your Risk Quotient will change as the events in your life change.

Homework:
Pass out the activity sheet on “Risk Scale” and have students complete for homework.
Results of Early Investment
(Student Handout)

The advantage of compound interest

<table>
<thead>
<tr>
<th>Age</th>
<th>Amount saved</th>
<th>Age</th>
<th>Amount saved</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>$1000</td>
<td>16</td>
<td>$1000</td>
</tr>
<tr>
<td>17</td>
<td>$1000</td>
<td>17</td>
<td>$1000</td>
</tr>
<tr>
<td>18</td>
<td>$1000</td>
<td>18</td>
<td>$1000</td>
</tr>
<tr>
<td>19</td>
<td>$1000</td>
<td>19</td>
<td>$1000</td>
</tr>
<tr>
<td>20</td>
<td>$1000</td>
<td>20</td>
<td>$1000</td>
</tr>
<tr>
<td>21</td>
<td>$1000</td>
<td>21</td>
<td>$1000</td>
</tr>
<tr>
<td>22</td>
<td>$1000</td>
<td>22</td>
<td>$1000</td>
</tr>
<tr>
<td>23</td>
<td>$1000</td>
<td>23</td>
<td>$1000</td>
</tr>
<tr>
<td>24</td>
<td>$1000</td>
<td>24</td>
<td>$1000</td>
</tr>
<tr>
<td>25</td>
<td>$1000</td>
<td>25</td>
<td>$1000</td>
</tr>
<tr>
<td>26</td>
<td>Amount invested</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>$1000</td>
<td>27</td>
<td>$1000</td>
</tr>
<tr>
<td>28</td>
<td>$1000</td>
<td>28</td>
<td>$1000</td>
</tr>
<tr>
<td>29</td>
<td>$1000</td>
<td>29</td>
<td>$1000</td>
</tr>
<tr>
<td>30</td>
<td>$1000</td>
<td>30</td>
<td>$1000</td>
</tr>
<tr>
<td>31</td>
<td>$1000</td>
<td>31</td>
<td>$1000</td>
</tr>
<tr>
<td>32</td>
<td>$1000</td>
<td>32</td>
<td>$1000</td>
</tr>
<tr>
<td>33</td>
<td>$1000</td>
<td>33</td>
<td>$1000</td>
</tr>
<tr>
<td>34</td>
<td>$1000</td>
<td>34</td>
<td>$1000</td>
</tr>
<tr>
<td>35</td>
<td>$1000</td>
<td>35</td>
<td>$1000</td>
</tr>
<tr>
<td>36</td>
<td>$1000</td>
<td>36</td>
<td>$1000</td>
</tr>
<tr>
<td>37</td>
<td>$1000</td>
<td>37</td>
<td>$1000</td>
</tr>
<tr>
<td>38</td>
<td>$1000</td>
<td>38</td>
<td>$1000</td>
</tr>
<tr>
<td>39</td>
<td>$1000</td>
<td>39</td>
<td>$1000</td>
</tr>
<tr>
<td>40</td>
<td>$1000</td>
<td>40</td>
<td>$1000</td>
</tr>
<tr>
<td>41</td>
<td>$1000</td>
<td>41</td>
<td>$1000</td>
</tr>
<tr>
<td>42</td>
<td>$1000</td>
<td>42</td>
<td>$1000</td>
</tr>
<tr>
<td>43</td>
<td>$1000</td>
<td>43</td>
<td>$1000</td>
</tr>
<tr>
<td>44</td>
<td>$1000</td>
<td>44</td>
<td>$1000</td>
</tr>
<tr>
<td>45</td>
<td>$1000</td>
<td>45</td>
<td>$1000</td>
</tr>
<tr>
<td>46</td>
<td>$1000</td>
<td>46</td>
<td>$1000</td>
</tr>
<tr>
<td>47</td>
<td>$1000</td>
<td>47</td>
<td>$1000</td>
</tr>
<tr>
<td>48</td>
<td>$1000</td>
<td>48</td>
<td>$1000</td>
</tr>
<tr>
<td>49</td>
<td>$1000</td>
<td>49</td>
<td>$1000</td>
</tr>
<tr>
<td>50</td>
<td>$1000</td>
<td>50</td>
<td>$1000</td>
</tr>
</tbody>
</table>

Amount available at age 50
$131,050

Amount available at age 50
$84,701

Amount invested
$25,000

Amount (Difference)
$46,349
The Rule of 72
(Overhead Transparency)

There are TWO methods of use

(1) Divide 72 by the interest rate you expect to earn. This will tell you how long it will take to double your money.

\[
72 / 6\% \text{ interest} = 12 \text{ years to double your money}
\]

(2) Divide 72 by the number of years in which you expect to double your money.

\[
72 / 12 \text{ years} = 6\% \text{ Interest to double your money}
\]
Student Activity
Name ____________________
Date __________ Period _____

Example of Rule of 72

Initial Investment of $5,000

<table>
<thead>
<tr>
<th>Years</th>
<th>Interest Rates</th>
<th>Years</th>
<th>Years</th>
<th>$10,000</th>
<th>$15,000</th>
<th>$20,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>6%</td>
<td>8</td>
<td>12</td>
<td>$10,000</td>
<td>$15,000</td>
<td>$20,000</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td></td>
<td></td>
<td>$10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15%</td>
<td>$10,000</td>
<td>$15,000</td>
<td>$20,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
THE GREATER THE RISK, THE GREATER THE REWARD
(Overhead Transparency/ Student Handout)

Direct Investment in a business itself

NASDAQ  Must meet certain qualifications
Successful companies pay dividends
Trading done via Internet between brokers

INCREASED RISK

New York Stock Exchange

Common - Voting privileges
Preferred - Costs less per share
  Guaranteed return
Bonds - Fixed time
  Fixed interest
  "Contract"

Mutual Funds

Professional Management
Spread and share risk and reward

Government  Not Insured

Bonds - Fixed interest
  Fixed time
  Notes - Nontaxable

LITTLE RISK

Banks  Insured to $100,000

Certificate of Deposit - Higher Interest
  Fixed time

Saving Accounts - Guaranteed interest
  Immediate Access

Secondary Education Division
North Carolina Department of Public Instruction
2006
A sound financial plan is built on a foundation of home ownership, cash in the bank for emergencies, and insurance to protect your current assets.
**Risk Scale**

<table>
<thead>
<tr>
<th>No Risk</th>
<th>Low Risk</th>
<th>Some Risk</th>
<th>High Risk</th>
<th>Extreme Risk</th>
</tr>
</thead>
</table>

**Directions:** Using the scale above, plot what you think would be acceptable risk to take in the following times in your life. Remember at each time your responsibilities change and so might your goals. In the space below explain why you chose that risk level. (If not enough space, use the back of this sheet.)

___________ 1. You are 21 years old, not married, recent college graduate with an entry-level job with a very well known company and a bright future.

___________ 2. You are 35 years old, married with a son that is ten years old and a daughter six. You anticipate that both of them will be going to college. You have been with your company for nine years and are in middle management.

___________ 3. You are 55 years old. Your children are out of the house in "good" jobs. You are thinking of retirement, wanting to continue your present life style and enjoy your life after work.

___________ 4. You are 67 years old and in excellent health. You have retired and are looking at a very long and happy life of traveling and good works.
Investment – Does Money Grow?
Day Two

NCSCOS Goal and Objective(s):
7.05 Explain the impact of investment on human, capital, productive, and natural resources.

Warm – Up/Bell ringer:
Students are to get out their homework ("Risk Scale" activity sheet) and prepare to exchange ideas with classmates.

Key Questions:
1. How do you prepare for long-term goals?
2. When should you start planning for your future?

Materials Needed:
Blank paper and colored pens or pencils
Article from the Bureau of Labor Statistics:
http://cber.cba.ua.edu/rbriefs/ab_jul97.html

Time/Pacing:
One to two days

Link(s) to Prior Learning:
Homework

Purpose/Objective of this lesson:
Students will understand how the need for long-range planning prepares them for the future.

Teacher Input:
Provide students with information about investing, saving and spending. Spending patterns vary by age, region of the country, the size of the household, and income, among other things.
Continuous Assessment Tools/Strategies:
Evaluate the plans according to the students long-range planning
Evaluate on accuracy and students' demonstration of concept understanding

Strategies for Differentiation:
See projects below

Class Activity

Guided Practice:

1. Revisit information from previous class on the “Risk Scale” worksheet. Have students discuss in groups of three their ideas of investment at different ages. One member from each group will present to the class that group’s ideas and explanations.

2. Students are to write how they envision their retirement; When will they retire? What will they be doing? Where do they expect to be? How are they going to be able finance this vision?

3. The teacher should ask for student volunteers to tell the other members of the class about their plans and lead a class discussion about how realistic the plan(s) are.

Independent Practice:
Have students create a retirement plan to present in class. Have them break up into groups according to their determined risk level.

Summary/Closure:
Discuss among groups and have two or three from each group present their plan.

Independent Practice:
Pass out Bureau of Labor of Statistics handout titled, “How do people spend their money?”
Guided Practice:

1. Using the article, students are to figure out how people spend their money. What are the categories and what are the percentages in each category?

2. Go over the answers students provided for guided practice activity #1. Remind students that taxes take about 35% off the top of their paychecks through various withholdings as well as sales taxes, property taxes and other government fees.

Summary/Closure:
Using a job with a salary of $40,000 and using the percentages, have students calculate how much money would be spent in each category.

Homework:
Using the information from the class discussion, have students create a pie chart poster about how Americans spend their money. (The teacher may demonstrate what a pie chart is and how to create one.) The pie chart needs to include what salary they started with, the amount in each category and picture in the pie “slice” representing that group.
How Do People Spend Their Money?

Spending patterns vary by age, region of the country, the size of the household, and income, among other things. Some things are purchased infrequently, others on a regular basis. The Bureau of Labor Statistics conducts the Consumer Expenditure Survey to quantify some of these observations. The seven major categories in the Survey are food, housing, apparel and services, transportation, health care, entertainment, and an "other" category that is mostly taken up by personal insurance and pensions, but also includes personal care products, reading, education, tobacco products, cash contributions, and miscellaneous items. Although the dollar amounts vary with every Survey report, some trends have been in place for many years.

Health Care. Health expenditures vary considerably by age. U.S. households, on average, spend five or six percent of their after-tax income on health care. The youngest householders, those under 25, spend less, both in total dollars and as a percent of all their expenses. As the age of the householder rises, so does the amount of the budget devoted to health insurance, drugs, medical supplies, and services such as doctor's visits, lab tests, X-rays, or therapy. Householders age 65 or older devote, on average, 12 percent of their budget to health care.

Food. Everybody who has shopped in a grocery store has marveled at how much of what we buy there is not food. The Consumer Expenditure Survey counts the food items purchased in the Food category, and things like toilet tissue or scouring powder in the Housing category. American households spend about 14 percent of their budget on actual food items. However, these are not only grocery store food purchases. This category also includes food from vending machines, in restaurants, and special catered affairs. Two groups are spending a little more of their budget than average on food, but for different reasons. Households headed by someone under 25 spend more than average on food in restaurants; households headed by someone over 65 spend more on food eaten at home.
Housing. This category is more than shelter. It also includes utilities, household furnishings, household operations and domestic services, and other housekeeping expenses such as pest control, appliance repair, reupholstering or furniture repair, or rental or repair of lawn and garden tools. The average expenditure for this category seems to be about 32 percent of the American household budget. Householders aged 25-44 average a little more, possibly because this is the most common age to buy a house. Single-person households are also spending a bigger percent of their income on housing, possibly because larger households frequently have more than one earner, therefore the percentage of all their household money spent on housing is lower, even if the dollar amount is not.

House Furnishings and Equipment. We might expect young householders to spend a bigger percent of their budget on house furnishings, because they are just setting up housekeeping. Middle-aged householders would spend relatively more because they are at the height of their earning power. Senior citizens might spend less because they have already furnished their homes. However, every age group seems to spend between five and six percent of their budget on furniture, floor coverings, and appliances. Furniture breaks, rugs wear out, and appliances quit working no matter how old you are.

Consumer Expenditure Survey. 1995 Annual 1995 Percent Expenditures of Total Income before Taxes $36,948 Average Annual Expenditures $32,277 100% Food 4,505 14% Food at home 2,803 9% Food away from home 1,702 5% Housing 10,465 32% Apparel and services 1,704 5% Transportation 6,016 19% Health care 1,732 5% Entertainment 1,612 5% Other expenditures 3,274 10% Personal insurance and pensions 2,967 9% Pensions Note: Details do not sum to total due to rounding.

Source: U.S. Department of Labor, Bureau of Labor Statistics
**07/97; http://cber.cba.ua.edu/rbriefs/ab_jul97.html