TEST OF FINANCIAL LITERACY: EXAMINER'S MANUAL

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FOREWORD

The Council for Economic Education (CEE) is deeply committed to providing the highest quality instructional products for teachers to use in their classrooms to give their students the educational tools for understanding personal finance. Providing teachers with up-to-date assessments is part of the total package. The *Test of Financial Literacy*: *Examiner's Manual* offers teachers and test administrators the essential information they need in order to test the understanding of high school students on personal finance and compare the results with other high school students across the nation.

The *Test of Financial Literacy* is one of three CEE standardized assessments for personal finance. The other two assessments are the *Test of Financial Knowledge* for upper middle school or lower high school students (eighth and ninth graders) and the *Basic Finance Test* for upper elementary school or lower middle school students (fifth and sixth graders). All three assessments are available online for teacher use with students. The CEE also has a test bank of questions for teachers to use to construct their own tests for diagnostic purposes. Information about the website can be found at: http://www.councilforeconed.org/resource/online-assessment-center/

The CEE is truly indebted to many individuals who shared their multitude of talent and their precious time to write, review, and revise items for the *Test of Financial Literacy* that are based on the content specifications in the CEE's *National Standards for Financial Literacy* (2013). Special thanks go to William Walstad for directing the project for the CEE and undertaking the test development work with his associate director, Ken Rebeck. Members of the National Advisory Committee (acknowledged by name and institution on page 3 and in Appendix 1) also provided invaluable assistance in preparing and revising test items to be used for the test drafts.

The CEE gratefully acknowledges the generous funding and support of PwC for making this accomplishment possible.

Council for Economic Education

TEST OF FINANCIAL LITERACY: EXAMINER'S MANUAL

The *Test of Financial Literacy* (TFL) is a standardized test for measuring the achievement of high school students in units or courses that emphasize content and instruction in personal finance. The test should be a valuable tool for assessing what students know about the basics of personal finance and related concepts in economics or business.

The *TFL Examiner's Manual* provides test users with the information they need to administer the test and interpret the results. It has three major objectives. First, it gives test users a detailed description of the test content along with item rationales so they can understand how the test covers important content specified in national standards for personal finance. Second, it explains how the test should be administered to students and discusses the possible uses of the test for assessment and instruction. Third, it presents statistical evidence on the reliability and validity of the test as a measure achievement in personal finance that would typically be taught at the high school level.

1. TEST DEVELOPMENT

In 2013, the Council for Economic Education (CEE) published the *National Standards for Financial Literacy* (hereafter *FL Standards*). This document describes six major content areas for personal finance instruction in the nation's schools: (1) earning an income; (2) buying goods and services; (3) saving; (4) using credit; (5) financial investing; and, (6) protecting and insuring financial assets. Associated with these six standards are 144 benchmarks that explain in more detail what students should know about the standards and how to use this knowledge by the end of the fourth, eighth, and twelfth grades.

At the time of publication of the *FL Standards*, no standardized tests were available to assess student understanding of these standards. The CEE therefore sought funding for a project to create three tests, one for use in high school, another for middle school, and the third for elementary school.

The CEE secured funding from PwC in summer 2014 for the development of the three standardized tests in personal finance. The PwC support for the CEE also included funding for the development of an online assessment center to house all the CEE standardized tests in both economics and personal finance. In addition, a test bank of questions from CEE publications in personal finance and economics would be added to the online assessment center so that teachers could create their own classroom tests. This *Examiner's Manual* only describes the test development phase of the project and primarily focuses on the TFL.

Test Specifications. Several decisions were made prior to or during test development that affected the content and features of the three new assessments. First, each test was designed to assess student understanding of the materials contained in the *FL Standards*. The specific content for test questions would be drawn from the benchmarks for each standard, but sorted by grade level to construct the three new tests. The TFL content would emphasize what students should know by twelfth grade as described in the 63 twelfth grade benchmarks. The middle school test, called the *Test of Financial Knowledge* (TFK), would assess the 49 eighth grade benchmarks. The elementary test, titled the *Basic Finance Test* (BFT), would use the 32 fourth grade benchmarks for test content.

Second, the design of the three personal finance tests would be similar to the CEE's three standardized tests in economics. These tests were prepared to assess standards and benchmarks in the CEE's *Voluntary National Content Standards in Economics* (CEE 2010). They include the high school *Test of Economic Literacy* (TEL), the middle school *Test of Economic Knowledge* (TEK), and elementary school *Basic Economics Test* (BET). The new tests also would complement the high school, middle school, and elementary school assessment instruments for the CEE's *Financial Fitness for Life* (FFFL) curriculum. The content for the new tests, however, would be based on *FL*

Standards and thus would not be tied to an assessment of any particular curricula.

Third, for norming or test data purposes the TFL, TFK, and BFT would be administered to samples of students at several grade levels to cover the ranges for the major transition points in precollege education as was the case with the three standardized economics test (TEL, TEK, and BET). The TFL would assess student understanding at or near the end of high school (eleventh and twelfth grades). The TFK would be used for measuring student achievement at the end of middle school or the beginning of high school (eighth and ninth grades). The BFT would test students at the end of elementary school or the beginning of middle school (fifth and sixth grades).

Fourth, a multiple-choice format would be used for each instrument so a test would sample a wider range of the content domain as specified in the benchmarks for the *FL Standards*. This decision was important because it permitted a sufficient number of test items to be distributed across each of the six standards and the many benchmarks at each grade level. This format would make the most efficient use of the available resources for assessments, and it was consistent with the practice adopted for the three standardized economics tests (TEL, TEK, and BET).

Fifth, each test was to be an achievement test and not a speed test. The number of multiple-choice questions included on each one would be limited to what most students could reasonably be expected to answer in about a 45-minute class period. This time period was well within the time length of most classes and would allow ample opportunity for teachers to make arrangement within a classroom for giving test instructions and administering the test. Most questions on each instrument would not be overly complex so that most test items could be answered in less than a minute, on average. More time, however, would be allocated for completion of the elementary test because some elementary students may have more difficulty with reading. Past experience with the three standardized economics tests indicated that most students had sufficient time to answer the 45 items on the TEL, the 40 items on the TEK, and the 30 items on the BET. Accordingly, the acceptable ranges for the number of items on a test were set at 45 to 50 items for the TFL, 40 to 45 for the TFK, and 30 to 35 for the BFT.

Personnel. William Walstad, Professor of Economics at the University of Nebraska-Lincoln and Editor of the *Journal of Economic Education*, was the director of the test project. His responsibility was to select the item writers, conduct meetings, develop test items, prepare the final tests, oversee statistical analysis, and write an examiner's manual for each test. Ken Rebeck, Professor of Economics at St. Cloud State University, was the associate project director. His job was to work with Walstad on the item development, preparation of the tests, conduct the statistical analysis, and co-author an examiner's manual for each test.

Both Walstad and Rebeck have extensive experience in the collaborative development of national tests in economics and personal finance. Their past work with personal finance assessments included preparation of three *FFFL* tests. They also directed projects to prepare new editions of the TEL, TEK, and BET, and co-authored examiner's manuals for each of those tests. In addition, they had conducted a research study on the effectiveness of a high school curriculum in personal finance (*Financing Your Future*) (Walstad, Rebeck, and MacDonald 2010). Walstad served on the writing committee for the *FL Standards.* Rebeck has made many presentations at teacher workshops on personal finance and economics through the Minnesota Council on Economic Education.

The CEE representative for the project was Kevin Gotchet, a director of programs at the CEE. He previously worked on the CEE's Excellence in Economic Education project, which was funded by a multi-year grant from the U.S. Department of Education. Gotchet worked with Walstad on selection of the personnel for the project, managed the budget, helped organize meetings, arranged for data collection though the CEE's online assessment center, and monitored progress of the project for the CEE.

In summer 2014, Walstad and Gotchet created a National Advisory Committee (NAC) for the test project that included five independent members, who together had expertise in classroom instruction in personal finance and economics, had conducted precollege teacher training in personal finance and economics, and were experienced in test-item writing. William Bosshardt, Associate Professor of Economics and Director of the Center for Economic Education at Florida Atlantic University, has many years of experience in providing training in economics and personal finance for precollege teachers. He also had served on test development committees for the TEL, TEK, and BET and was the project director in charge of writing the CEE's *FL Standards*. Elizabeth Breitbach is Clinical Assistant Professor of Economics at the University of South Carolina. Her research and publications focus on the effect of financial literacy on banking participation. Brenda Cude is a professor in the Department of Financial Planning, Housing, and Consumer Economics at the University of Georgia. She teaches courses for undergraduates on personal finance and conducts research on the financial literacy of college students. Andrew Hill is an economic education advisor at the Philadelphia Federal Reserve Bank. He also is a team leader for a teacher training program in the Philadelphia area for a high school course in personal finance (*Keys to Financial Success*) and was a writer for the *FL Standards*. Bonnie Meszaros, Associate Director at the Center for Economic Education and Entrepreneurship at the University of Delaware, provides training in economics and personal finance to area teachers. She has served on test development committees for the BET and TEK and was a writer for the *FL Standards.*

Item Writing. The first meeting of the NAC with the project directors was held for two days in mid-August, 2014 in Atlanta, Georgia. Each NAC member and the two directors were responsible for supplying about 40–50 test items for review at the meeting. The items could be new or drawn from various sources, such as CEE-published curricula in personal finance or non-CEE instructional material. Items from CEE or other source material, however, would only serve as an "example" that could be used for writing a new item on the same content. The project requirement for any item included on one of the tests was that the item be new. The different stages of review and editing of items throughout test development would ensure that requirement was met for all test items.

All of the 335 items submitted for review by the NAC members and the two project directors were coded by standard and benchmark using the CEE's *FL Standards*. The coding permitted items to be sorted to identify content gaps where there were no test items and where new ones needed to be written. The pool of items also was rated using four categories: (1) accept as is; (2) requires minor revision; (3) requires major revision; and (4) reject and do not use. Most items received a 2 or 3 rating from the NAC and project directors. The group made changes to items that could be easily revised and left other items for revision after the meeting. Some new items also were written at the meeting.

The final set of items selected for further revision were then assigned to the group members to work on at their home locations. For each standard, one committee member was assigned primary responsibility for revising items for that standard and filling content gaps with a few new items. A second committee member would then review the revised items from the first committee member and offer further comments and changes. At the completion of the revision process, the revised items from all standards were compiled by the project director for further review.

The second NAC meeting with the two project directors was held in Dallas in October 2014. The primary purpose for this day-long meeting was to review and revise all items in the question pool. Items that could be changed easily were revised by the group at the meeting. Other items that required more work were assigned to committee members to change after the meeting and then be sent to the project director and associate director for further review.

In November, the revised questions from the Dallas meeting and the follow-up work at home sites were compiled by the project director. The total of 318 possible items included 53 for standard 1, 38 for standard 2, 42 for standard 3, 69 for standard 4, 60 for standard 5, and 56 for standard 6. The set of items were then rated by the NAC and the project directors using the 1–4 rating scale previously described.

The project director and associate director met in Sioux Falls, South Dakota, on January 16–17, 2015, to prepare a draft of each of the three tests. For this drafting process, the 318 possible items were sorted by standard, and then by grade level and benchmark within a standard. The project directors then selected what they thought were the best items for each test based on the grade level of items, the quality of the items, the 1–4 ratings from the review process, and the distribution of test content across benchmarks. This work produced initial drafts of the TFL, TFK, and BFT.

After the meeting, the project directors continued to refine each draft. Nine new items were written and added to the TFL to cover missing benchmarks or improve the content distribution across standards. Ten new items were written and added to the TFK and nine new items were written and added to the BFT for similar reasons.

Further refinements were then made to each draft. The length of the item options were ordered from shortest to longest, or if necessary from longest to shortest, to eliminate any clues to a correct answer based on option length. To the extent possible, the correct answer was randomized across the four options (A, B, C, or D) so that each one was about equally likely to be the correct answer. The names for individuals in item stems and the four options were split about equally between males and females. Names also were updated to use the most popular ones as found in recent birth lists of names. Each item was carefully checked for correct grammar and spelling. Each test also was administered to three students for review, one for each grade level, to get further feedback and to check on the appropriateness of items.

In February 2015, a near-final draft of each test was sent to members of the NAC for their last review and comment. The main request to the NAC was to make sure that there was only one best or correct answer to each test item. The review by the NAC uncovered a few minor wording problems with questions that were corrected, but found no problem with the correct answers.

In late February 2015 each test was sent by the project director to the CEE for entry into the CEE Online Assessment Center. In February 2016 the accumulated data from the online testing over a year was used to identify five TFL and five TFK items that appeared too hard or did not capture knowledge of the underlying benchmarks as well as items on the rest of the tests. The final result of the revision work was a 45-item TFL covering 45 of the 63 twelfth-grade benchmarks (71 percent of benchmarks), a 40-item TFK covering 39 of the 49 eighth-grade benchmarks (80 percent of benchmarks), and a 35-item BFT covering all of the 32 fourth-grade benchmarks (100 percent of benchmarks).

The last section of this *Examiner's Manual* presents the 45 test items for the TFL and gives a written rationale for the correct answer. As will be discussed in the next section, there was good coverage of the personal finance concepts to establish the content validity of the TFL. Short teacher and student surveys were included with the online version of the TFL to collect some background information that would be used for the analysis of the test data. Other sections of this manual discuss results from the analysis of test validity and reliability.

2. THE CONTENT AND STRUCTURE OF THE TEST

The *FL Standards* provides a description of what experts in personal finance and economics consider to be core content in personal finance that should be taught by the twelfth grade. Table 1 shows the standards and the distribution of items across the twelfth grade benchmarks for the TFL.

TABLE 1. *TFL* Standards and Benchmarks

Standard 1: Earning Income	
People make choices to protect themselves from the financial risk of lost income, assets, health, or identity. They can choose to accept risk, reduce risk, or transfer the risk to others. Insurance allows people to transfer risk by paying a fee now to avoid the possibility of a larger loss later. The price of insurance is influenced by an individual's behavior.	**7 items or 16%**
Income Benchmarks: Grade 12	**Item No.**
1. People choose jobs or careers for which they are qualified based on the income they expect to earn and the benefits, such as health insurance coverage or a retirement plan, they expect to receive.	
2. People choose jobs or careers for which they are qualified based on non-income factors, such as job satisfaction, independence, risk, family, or location.	**1**
3. People vary in their willingness to obtain more education or training because these decisions involve incurring immediate costs to obtain future benefits. Discounting the future benefits of education and training may lead some people to pass up potentially high rates of return that more education and training may offer.	**2**
4. People can make more informed education, job, or career decisions by evaluating the benefits and costs of different choices.	**3**
5. The wage or salary paid to workers in jobs is usually determined by the labor market. Businesses are generally willing to pay more productive workers higher wages or salaries than less productive workers.	**4**
6. Changes in economic conditions or the labor market can cause changes in a worker's income or may cause unemployment.	**5**
7. Taxes are paid to federal, state, and local governments to fund government goods and services and transfer payments from government to individuals. The major types of taxes are income taxes, payroll (Social Security) taxes, property taxes, and sales taxes.	**6**
8. People's sources of income, amount of income, as well as the amount and type of spending affect the type and amount of taxes paid.	**7**
Standard 2: Buying Goods and Services	
People cannot buy or make all the goods and services they want; as a result, people choose to buy some goods and services and not buy others. People can improve their economic well-being by making informed spending decisions, which entails collecting information, planning, and budgeting.	**6 items or 13%**
Buying Standard Benchmarks: Grade 12	**Item No.**
1. Consumer decisions are influenced by the price of a good or service, the price of alternatives, and the consumer's income as well as their preferences.	**8**
2. When people consume goods and services, their consumption can have positive and negative effects on others.	**9**
3. When buying a good, consumers may consider various aspects of the product including the product's features. For goods that last for a longer period of time, the consumer should consider the product's durability and maintenance costs.	**10**
4. Consumers may be influenced by how the price of a good is expressed.	**11**
5. People incur costs and realize benefits when searching for information related to their purchases of goods and services. The amount of information people should gather depends on the benefits and costs of the information.	**12**
6. People may choose to donate money to charitable organizations and other not-for-profits because they gain satisfaction from donating.	
7. Governments establish laws and institutions to provide consumers with information about goods or services being purchased and to protect consumers from fraud.	**13**

TABLE 1. *TFL* Standards and Benchmarks

Standard 3: Saving	
Saving is the part of income that people choose to set aside for future uses. People save for different reasons during the course of their lives. People make different choices about how they save and how much they save. Time, interest rates, and inflation affect the value of savings.	**5 items or 11%**
Saving Benchmarks: Grade 12	**Item No.**
1. People choose between immediate spending and saving for future consumption. Some people have a tendency to be impatient, choosing immediate spending over saving for the future.	**14**
2. Inflation reduces the value of money, including savings. The real interest rate expresses the rate of return on savings taking into account the effect of inflation. The real interest rate is calculated as the nominal interest rate minus the rate of inflation.	**15**
3. Real interest rates typically are positive because people expect to be compensated for deferring the use of savings from the present into the future. Higher interest rates increase the rewards for saving.	
4. The nominal interest rate tells savers how the dollar value of their savings or investments will grow; the real interest rate tells savers how the purchasing power of their savings or investments will grow.	
5. The nominal interest rate tells savers how the dollar value of their savings or investments will grow; the real interest rate tells savers how the purchasing power of their savings or investments will grow.	
6. Money received (or paid) in the future can be compared to money held today by discounting the future value based on the rate of interest.	**16**
7. Government agencies supervise and regulate financial institutions to help protect the safety, soundness, and legal compliance of the nation's banking and financial system.	**17**
8. Government policies create incentives and disincentives for people to save.	**18**
9. Employer benefit programs create incentives and disincentives to save. Whether or how much an employee decides to save can depend on how the alternatives are presented by the employer.	
Standard 4: Using Credit	
Credit allows people to purchase goods and services that they can use today and pay for those goods and services in the future with interest. People choose among different credit options that have different costs. Lenders approve or deny applications for loans based on an evaluation of the borrower's past credit history and expected ability to pay in the future. Higher-risk borrowers are charged higher interest rates; lower-risk borrowers are charged lower interest rates.	**10 items or 22%**
Using Credit Benchmarks-Grade 12	**Item No.**
1. Consumers can compare the cost of credit using the annual percentage rate (APR), initial fees charged, and fees charged for late payment or missed payments.	**19**
2. Banks and financial institutions sometimes compete by offering credit at low introductory rates, which increase after a set period of time or when the borrower misses a payment or makes a late payment.	
3. Loans can be unsecured or secured with collateral. Collateral is a piece of property that can be sold by the lender to recover all or part of a loan if the borrower fails to repay. Because secured loans are viewed as having less risk, lenders charge a lower interest rate than unsecured loans.	**20**
4. People often make a cash payment to the seller of a good—called a down payment—in order to reduce the amount they need to borrow. Lenders may consider loans made with a down payment to have less risk because the down payment gives the borrower some equity or ownership right away. As a result, these loans may carry a lower interest rate.	**21**
5. Lenders make credit decisions based in part on consumer payment history. Credit bureaus record borrowers' credit and payment histories and provide that information to lenders in credit reports.	**22**
6. Lenders can pay to receive a borrower's credit score from a credit bureau. A credit score is a number based on information in a credit report and assesses a person's credit risk.	**23**
7. In addition to assessing a person's credit risk, credit reports and scores may be requested and used by employers in hiring decisions, landlords in deciding whether to rent apartments, and insurance companies in charging premiums.	**24**
8. Failure to repay a loan has significant consequences for borrowers such as negative entries on their credit report, repossession of property (collateral), garnishment of wages, and the inability to obtain loans in the future.	

TABLE 1. *TFL* Standards and Benchmarks	
9. Consumers who have difficulty repaying debt can seek assistance through credit counseling services and by negotiating directly with creditors.	**25**
10. In extreme cases, bankruptcy may be an option for consumers who are unable to repay debt. Although bankruptcy provides some benefits, filing for bankruptcy also entails considerable costs, including having notice of the bankruptcy appear on a consumer's credit report for up to 10 years.	**26**
11. People often apply for a mortgage to purchase a home. A mortgage is a type of loan that is secured by real estate property as collateral.	**27**
12. Consumers who use credit should be aware of laws that are in place to protect them. These include requirements to provide full disclosure of credit terms such as APR and fees, as well as protection against discrimination and abusive marketing or collection practices.	
13. Consumers are entitled to a free copy of their credit report annually so that they can verify that no errors were made that might increase the cost of credit.	**28**
Standard 5: Financial Investing	
Financial investment is the purchase of financial assets to increase income or wealth in the future. Investors must choose among investments that have different risks and expected rates of return. Investments with higher expected rates of return tend to have greater risk. Diversification of investment among a number of choices can lower investment risk.	**8 items or 18%**
Financial Investing: Benchmarks: Grade 12	**Item No.**
1. The real return on a financial investment is the nominal return minus the rate of inflation.	
2. Federal, state, and local tax rates vary on different types of investments and affect the after-tax rate of return of an investment.	**29**
3. Expenses of buying, selling, and holding financial assets decrease the rate of return from an investment.	
4. Buyers and sellers in financial markets determine prices of financial assets and therefore influence the rates of return on those assets.	
5. An investment with greater risk than another investment will commonly have a lower market price, and therefore a higher rate of return, than the other investment.	**30**
6. Shorter-term investments will likely have lower rates of return than longer-term investments.	**31**
7. Diversification by investing in different types of financial assets can lower investment risk.	**32**
8. Financial markets adjust to new financial news. Prices in those markets reflect what is known about those financial assets.	**33**
9. The prices of financial assets are affected by interest rates. The prices of financial assets are also affected by changes in domestic and international economic conditions, monetary policy, and fiscal policy.	**34**
10. Investors should be aware of tendencies that people have that may result in poor choices. These include people avoiding selling assets at a loss because they weigh losses more than they weigh gains and investing in financial assets in which they are familiar, such as their own employer's stock and domestic rather than international stocks.	
11. People vary in their willingness to take risks. The willingness to take risks depends on factors such as personality, income, and family situation.	
12. An economic role for governments exists if individuals do not have complete information about the nature of alternative investments or access to competitive financial markets.	**35**
13. The Securities and Exchange Commission (SEC), the Federal Reserve, and other government agencies regulate financial markets.	**36**
Standard 6: Protecting and Insuring	
People make choices to protect themselves from the financial risk of lost income, assets, health, or identity. They can choose to accept risk, reduce risk, or transfer the risk to others. Insurance allows people to transfer risk by paying a fee now to avoid the possibility of a larger loss later. The price of insurance is influenced by an individual's behavior.	**9 items or 20%**
Protecting and Insuring Benchmarks: Grade 12	**Item No.**
1. Probability quantifies the likelihood that a specific event will occur, usually expressed as the ratio of the number of actual occurrences to the number of possible occurrences.	

TABLE 1. *TFL* Standards and Benchmarks		
2.	Individuals vary with respect to their willingness to accept risk. Most people are willing to pay a small cost now if it means they can avoid a possible larger loss later.	**37**
3.	Judgment regarding risky events is subject to errors because people tend to overestimate the probability of infrequent events, often because they've heard of or seen a recent example.	**38**
4.	People choose different amounts of insurance coverage based on their willingness to accept risk, as well as their occupation, lifestyle, age, financial profile, and the price of insurance.	**39**
5.	People may be required by governments or by certain types of contracts (e.g., home mortgages) to purchase some types of insurance.	**40**
6.	An insurance contract can increase the probability or size of a potential loss because having the insurance results in the person taking more risks. Policy features such as deductibles and copayments are cost-sharing features that encourage the policyholder to take steps to reduce the potential size of a loss (claim).	**41**
7.	People can lower insurance premiums by behaving in ways that show they pose a lower risk.	
8.	Health insurance provides funds to pay for health care in the event of illness and may also pay for the cost of preventive care. Large health insurance companies can often negotiate with doctors, hospitals, and other health care providers to obtain lower health care prices for their policyholders.	
9.	Disability insurance is income insurance that provides funds to replace income lost while an individual is ill or injured and unable to work.	**42**
10.	Property and casualty insurance (including renters insurance) pays for damage or loss to the insured's property and often includes liability coverage for actions of the insured that cause harm to other people or their property.	**43**
11.	Life insurance benefits are paid to the insured's beneficiaries in the event of the policyholder's death. These payments can be used to replace wages lost when the insured dies.	**44**
12.	In addition to privately purchased insurance, some government benefit programs provide a social safety net to protect individuals from economic hardship created by unexpected events.	**45**

Several points should be remembered in evaluating the coverage of the test across personal finance standards in Table 1. First, the TFL is not designed as a test of each standard or benchmark, but of overall understanding of personal finance. There are too few test items per standard (5 to 10) to make a sound judgment about mastery of a standard. It also would be inappropriate to evaluate student achievement on a benchmark because there is only one item per benchmark. The test, however, does provide a broad and representative sampling of the content domain across all standards in personal finance and thus can be used to assess overall student achievement in personal finance.

Second, the distribution in Table 1 reflects the test developers' best judgment of the association of an item with a particular benchmark. This classification of a test item by benchmark, however, may not be exact because content in the stem and the alternative options of an item might be related to content in several benchmarks. The allocation of an item to a particular benchmark as shown in Table 1 reflects what the test developers consider to be an item's primary relationship to a benchmark even if there are secondary associations.

Third, the distribution of test items reflects the test developers' interpretation of what *ought* to be included in a general test of personal finance for upper high school students (eleventh and twelfth grader) based on the content outlined by the *FL Standards*. The number of items by standard were largely determined by the number of twelfth grade benchmarks for a standard. Those standards with more twelfth grade benchmarks (4, 5, and 6) have more items than standards with fewer twelfth grade benchmarks (1, 2, and 3).

Fourth, test items can be classified by cognitive level. The problem with using a complex classification scheme with five or six cognitive levels to rate items is that the ratings can be somewhat arbitrary. Such fine distinctions also may not be of much value for a test in personal finance which focuses primarily on knowledge and application. Thus, the issue of cognitive level can be addressed for the TFL by sorting items into the two major categories, one at the lower level (knowledge or comprehension) and one at a higher level (application that might include analysis and evaluation). A review of the TFL shows about 15 knowledge or comprehension items (4, 6, 13, 17, 20, 22, 23, 25, 28, 34, 35, 36, 43, 44, and 45) and 30 application items. Thus about 33 percent of the test items are knowledge or comprehension and 67 percent are application.

3. USES OF THE TEST

To Measure Student Understanding

The TFL was designed primarily to aid teachers in assessing and improving the quality of high school teaching of personal finance. There are several ways of using it to achieve this objective.

AS A PRETEST

The TFL can be administered as a pretest at the outset of a unit of instruction in personal finance or at the beginning of a semester to assess the students' prior knowledge of personal finance concepts. This pretest use is important to high school teachers because some school districts provide some instruction in personal finance before high school. If this prior instruction in personal finance has been effective, many students may have already acquired some knowledge or understanding of the subject.

To determine areas of students' relative strength or weakness in personal finance, teachers can compare the scores of their students with the scores for each test item provided in this manual. Small differences between scores reported for a given question in this manual and those obtained in the classroom should not be emphasized.

Certain kinds of comparisons may prove useful. For instance, if the average score of students on the test is as good as or better than these published scores, significantly lower scores on selected items may indicate areas of personal finance the teacher may wish to emphasize in subsequent teaching or classroom work.

The manual also provides brief rationales that explain the correct answer for each question and why other answers are incorrect. Teachers should to read those rationales before deciding whether the particular concept tested deserves greater attention in the classroom. Teachers should refer to the relevant benchmarks in the *FL Standards* (see code listed with each item rationale) as listed in Table 1 or consult the *FL Standards* publication.

AS A POSTTEST

The TFL can be used at the end of a semester or unit of instruction to measure the extent to which understanding has improved. Posttest scores for a given group of students may be compared to their pretest scores and to the published scores for students in the tables presented later in this manual. A pretest and posttest use of the TFL should help to provide evidence of the effect of classroom instruction in improving knowledge and understanding of personal finance.

When used as a posttest, the TFL should be administered early enough to allow one or two class periods to be used for discussion of test scores and results. The teacher can take advantage of the students' natural interest in their relative standing in the class and in relation to the published results in this manual for the sample of students who have had previous instruction.

Item Discussion. When students cannot answer a question or find it most difficult to select the correct answer, they are often interested in what the correct answer is and why it is correct. Students' incorrect responses tend to be concentrated on specific topics. It is on those topics that review time can be spent most profitably, since the clustering of errors is an indication of confusion about the topic. The teacher may wish to read the rationale for each correct answer from the Item Rationale given in a later section of the manual or refer the relevant benchmarks in the *FL Standards.* Discussion can then continue between students and teacher, using educational materials on personal finance for further information.

Caution should be used in reading or paraphrasing item answers from the item rationale, particularly if the test is used on a pre- and posttest basis. After posttesting, reading the correct response and its rationale should cause no harm and is likely to be effective as a teaching/learning activity. This practice, however, should not be followed after *pretesting* if a subsequent posttest is to be administered. The reason is that the same items would be used both as a pretest and a posttest, and students would know the correct answers based on the pretest discussion of items, thus invalidating a pre- and posttest comparison.

DURING A COURSE

A third use of the TFL is to administer it midway during a course or unit of instruction and to use the results for *formative* evaluation purposes. Data on student performance near the halfway point can then be used to alter instructional strategies for the balance of the course or unit, thereby more closely reaching the instructional goal—greater student understanding of personal finance.

It should be remembered that if whole or parts of the TFL are administered during a course and also as a posttest, it is likely that some student "learning" will result because students will then answer a test item twice. Students may "remember" items from one test administration to the next, thus making any comparison invalid.

4. ADMINISTERING THE TEST

General Instructions

The TFL was designed for high school teachers or school administrators to use with high school students taking courses or units in personal finance. The decision, however, about whether the TFL should be used to measure student achievement in courses or units in personal finance should be based on a careful review of test items and course content to make sure the test fits the content on personal finance that is taught to high school students.

Although the instructions that follow will be adequate for most situations, it is suggested that the examiner carefully look over the test before the testing session begins to anticipate any problems. Unless standard procedures are followed when the test is given to students, the results obtained at different times may not be strictly comparable with the published results in this manual.

The room in which the test is to be administered should be well-lighted, well ventilated, and quiet. The students should have sufficient working space to take the test. Students should be seated so as to minimize opportunities to see each other's answers.

The test can be administered either online or in paper form. Teachers or administrators who give the online test should be familiar with online testing procedures. They should make sure that every student has proper access to a working computer or terminal. It also is helpful to talk with an instructional technology specialist at a school to get suggestions about the optimal computer use for classes, preparing students for online tests, and monitoring progress. Arrangements then should be made to have students take the online through the CEE's Online Assessment Center (OAC), which is found at www.councilforeconed.org/resource/online-assessment-center/.

Those educators who give the test in paper form can print out a copy at the CEE's OAC and then make copies for students. They also can print out and make copies of an answer sheet. (A facsimile of an answer sheet is provided as an appendix to this manual.) If answers are to be machine-scored, the answer sheets must be compatible with the scoring equipment, and the students must mark the answer sheets with the appropriate pencils (usually No. 2 lead). Students should not use a pen because it will make it difficult to change responses or machine-score a test.

All printed test materials should be counted and assembled prior to the testing session with an answer sheet under the front cover of every test booklet so that both answer sheet and test booklet can be distributed together, saving testing time. Each student should receive only one booklet.

When administering the test—either online or in paper form—give these two general instructions to students.

1. This test is designed to measure your understanding of personal finance. Not all students who take this test will have taken a separate course or unit in personal finance, but most have learned something about the subject in their other courses, through reading newspapers, listening to the radio, watching television, or browsing the Internet. You also may have discussed personal finance issues with a parent, guardian, or other adult. These questions will measure how well you understand personal finance and its application.
2. You should try to answer *every* question by marking what you think is the best choice. You might not know the answers to some questions, but use the information you *do* have to eliminate those answers you think are incorrect and select your best answer. Work at a comfortable speed, but do not spend too much time on any one item. The test consists of 45 questions or incomplete statements, for which you should choose the **one best answer** from the four possible answers. With some items, more than one answer may appear to be correct, but your task is to choose the *best* answer from one of the four.

Timing the Test

The TFL requires about 45 minutes of testing time for high school students, depending on the ability of the group. If testing is done in a class period that is shorter than 45 minutes, and the time cannot be extended, allowance should be made for this factor when test scores are evaluated and compared to these published test results.

The TFL was designed as a power test rather than as a speed test, so it is probable that most students will complete it in less than 45 minutes. Since many class periods are set at 50 minutes, the testing should begin as soon as possible after test instructions are given at the start of class.

Scoring the Test

The score for the TFL is the number of correct responses. The maximum possible score is 45. If the test is taken online, then the system should report the score for each student. If the test is taken in print form, then an answer sheet may be scored by hand or by machine.

To score the test by hand, use the key and facsimiles of the answer sheet in Appendix 3 in this manual. Scan each answer sheet to make certain the student marked only one answer for each question; if more than one answer space has been marked, the response to that question is considered wrong. The raw score is the total number of correct answers.

Machine-scoring of tests often produces a printout of the student roster with raw scores and percentiles for the scores by group tested. In addition, the group mean, standard deviation, and a frequency distribution are often provided. Such data can be useful in the interpretation of results.

5. TECHNICAL DATA

Student Sample

The TFL was administered to a sample of high school students, the majority of whom had received instruction in personal finance or economics either during the school year or in a prior year. Other students did not receive such instruction. To participate in the testing, teachers registered their class of students at the CEE's Online Assessment Center. They then arranged to have their students take the test online through computers at a high school. The period for student testing started in spring of the 2014-2015 school year, continued through fall of the 2015-2016 school year, and end by the middle of February 2016. No claim is made that this sample of students tested is representative of the target student population throughout the nation because it was not possible to obtain a large, stratified random sample of students. The results, however, are suggestive of the type of test results that would be obtained from many students.

Table 2 reports the aggregate statistics obtained from the 1,218 high school students who took the test. These results are shown for with or without personal finance or economics instruction. The data were collected from classes in the 48 high schools listed in Appendix 2.

TABLE 2. Aggregate Statistics for the Student Sample Taking the TFL

Sample Size	
Number of Students	1218
Percent with instruction	73%
Reliability	
Coefficient alpha	.87
Standard error of measurement	3.03
Means	
With instruction (n = 891)	23.47 (8.31)
Without instruction (n = 327)	20.35 (7.63)

Note: Standard deviations are in parentheses.

The sample data should not be considered as indicating the absolute standard of achievement in personal finance because it is not known what was specifically taught or how much time was spent instruction. Rather, the sample results provide a relative standard to aid teachers in comparing their students with other students who took the test. The comparisons will be meaningful only to the extent that the composition of the student body in any class is similar to the sample tested.

Percentile Tables

Table 3 presents the raw test scores and corresponding percentile ranks from the samples of high school students with and without personal finance or economics instruction taking the TFL online. The percentile ranks were obtained by calculating the total percentage of students who scored at or below a certain raw score. These tables permit the conversion of raw scores to percentile ranks by whether students had prior instruction. The *with* column shows the results for those students who

TABLE 3. Percentiles for TFL Scores:

Raw Score	With *(n = 891)*	Without *(n = 327)*
45		
44	99	
43	99	
42	99	
41	99	
40	99	99
39	98	99
38	96	99
37	95	99
36	93	98
35	91	97
34	89	95
33	86	94
32	84	92
31	80	91
30	77	89
29	73	85
28	69	82
27	66	80
26	62	75
25	58	73
24	54	70
23	50	66
22	46	59
21	42	57
20	39	53
19	35	50
18	31	45
17	27	40
16	23	35
15	20	32
14	17	28
13	13	21
12	9	16
11	7	12
10	4	8
9	3	6
8	2	3
7	1	2
6		1
5		
4		
3		
2		
1		

received instruction from teachers. The *without* column shows the results from the sample of high school students who had not received instruction. Percentile ranks allow comparisons to be made among students in different groups. For example, a student who receives instruction and obtains a raw score of 25 on the TFL has a percentile rank of 58 among those students who also received instruction. A raw score of 25 for a student who has not had instruction would be the equivalent of a percentile rank of 73. Therefore, a student with instruction and a raw score of 25 is performing as well as, or better than, 73 percent of students with the same score who have not received instruction.

Item Difficulty and Discrimination

Test administrators may want to know how their students performed on certain items. This information would be important in cases where the teacher covered only some of the concepts or topics included in the test. Information on item difficulty and discrimination will help teachers evaluate student performance on particular items.

Item Difficulty. Table 4 shows the percentage of correct responses on each item for students with and without instruction. This percentage is an estimate of item difficulty for a group of students. Theoretically, this percentage can range from 0 to 100 percent, but most items will fall in the 30 to 80 percent correct range for those students with instruction. Students without instruction will generally have a lower percentage correct. Data on item difficulty should be interpreted with care because it depends on many things besides the complexity of the concept being tested. Such matters as classroom emphasis on content, the closeness or plausibility of incorrect alternatives or "distractors" and the relation of the item content to students' outside activities, experiences, reading, and awareness may also affect item difficulty. It is worth emphasizing that undue attention should not be placed on small differences between the percentage reported in this manual and those obtained in the classroom.

TABLE 4. Item Discrimination and Percentage of Correct Responses: TFL

Item	Correct Answer	Corrected Item-Total Correlation *(n = 1218)*	With *(n = 891)*	Without *(n = 327)*
1	D	.41	.65	.52
2	C	.23	.38	.32
3	B	.29	.58	.49
4	A	.42	.67	.59
5	A	.36	.43	.38
6	A	.32	.61	.56
7	B	.39	.41	.38
8	C	.37	.64	.54
9	C	.30	.84	.81
10	C	.17	.40	.33
11	B	.47	.84	.77
12	D	.18	.42	.37
13	C	.20	.39	.41
14	D	.38	.57	.44
15	D	.41	.54	.50
16	B	.48	.69	.62
17	B	.21	.48	.44
18	A	.26	.34	.29
19	B	.29	.54	.48
20	B	.41	.48	.40
21	D	.30	.44	.37
22	D	.39	.49	.40
23	D	.46	.89	.74
24	A	.44	.63	.53
25	D	.40	.56	.52
26	B	.24	.56	.52
27	A	.30	.44	.37
28	D	.48	.45	.34
29	C	.24	.50	.47
30	A	.31	.42	.37
31	A	.17	.35	.30
32	C	.48	.66	.58
33	B	.44	.59	.50
34	B	.10	.31	.29
35	C	.25	.41	.32
36	D	.35	.41	.37
37	C	.13	.36	.35
38	B	.46	.66	.56
39	C	.15	.43	.38
40	A	.49	.57	.46
41	A	.26	.37	.32
42	C	.39	.67	.50
43	C	.27	.49	.26
44	B	.34	.52	.40
45	D	.44	.61	.50

Each question on the TFL has four possible choices with one correct answer. Pure chance would dictate an expected correct score of 25 percent for student who guess. If some students with instruction score below 25 percent (or about 11 or less) their test should be carefully checked for systematic errors in scoring. However, if a group of students know nothing about personal finance, probability will dictate that some students will earn scores of 11 or below even without errors.

Item Discrimination. Also reported in Table 4 is the corrected item-to-total score correlation or point-biserial correlation. It is the correlation between the students' total test scores (less the particular item) and their scores on an item and ranges from -1 to 1. The *higher* the coefficient, the better the item functions as a discriminator between those students who know more or know less personal finance. If this coefficient is zero, it would indicate that this item fails to discriminate between those with more and less knowledge of personal finance.

In general, if an item has a discrimination coefficient below 0.20, the item may either be a weak discriminator or it may indicate that there is limited classroom coverage of the tested concept. Questions with a *negative* coefficient indicate that more lower-scoring students get the question right than do higher-scoring students. Item discrimination does *not* adjust for the reading or general ability of students. Thus, higher ability students may do well on a given question regardless of whether or not they have had personal finance instruction.

Item Responses

Table 5 shows the percentages of students who selected each of the four options for each TFL item, with the correct response percentage in bold face and with an asterisk. Analysis of item responses can be useful for test users. For example, if a large percentage of students answered A when the correct answer was C, distractor A should be studied to determine why students selected it. The item rationale found in Section 6 provides explanations of correct answers and why other answers are incorrect to aid in interpreting results.

TABLE 5. Percentage Response to Each Alternative: TFL

Full sample (*n = 1218*)

Item	A	B	C	D
1	23	5	10	**62***
2	5	30	**36***	28
3	21	**55***	13	11
4	**65***	12	13	10
5	**41***	14	18	27
6	**60***	18	11	11
7	30	**40***	16	14
8	15	3	**61***	20
9	6	8	**83***	3
10	8	27	**38***	27
11	6	**82***	7	5
12	11	14	34	**41***
13	34	14	**40***	12
14	15	7	25	**54***
15	16	20	11	**53***
16	13	**67***	13	6
17	27	**47***	13	13
18	**33***	15	33	19
19	21	**52***	10	16
20	20	**45***	19	16
21	14	21	23	**42***
22	20	21	14	**46***
23	5	6	11	**79***
24	**60***	14	10	16
25	16	20	9	**55***
26	9	**55***	14	22
27	**42***	26	15	18
28	33	13	12	**42***
29	12	17	**49***	22
30	**41***	25	21	13
31	**34***	38	19	9
32	12	15	**64***	9
33	15	**56***	14	14
34	19	**31***	27	24
35	18	31	**38***	13
36	12	29	19	**40***
37	24	19	**36***	21
38	12	**63***	14	10
39	30	18	42*	11
40	**54***	19	13	14
41	**35***	24	20	21
42	11	13	**63***	13
43	34	24	**36***	6
44	26	**48***	12	13
45	12	11	19	**58***

Note: *Correct answer

Tables 6 and 7 split the TFL sample into two groups, one *with* instruction and one *without* instruction. Table 6 shows the percentages of students with instruction selecting each item option, with the percentage for the correct response in bold face and with an asterisk. Table 7 shows the percentages of students without instruction selecting each item option. Comparisons of items responses can be made across the tables. In most cases, the sample with instruction have a greater percent correct than the students without instruction.

Reliability

The reliability of a test is the degree of consistency with which a test measures achievement. For example, two students taking the same test are likely to obtain different scores, but each student taking the test again (without intervening instruction in the subject tested) should obtain about the same score as the first time. Many factors (including test practice or guessing) cause changes in student performance from day to day. As a result, we can never measure a student's performance perfectly (that is, obtain a student's "true" score).

SEM. It is possible to estimate the amount of variation in test scores due to measurement error, and therefore to specify a range within which one can be relatively certain the "true" score will fall. By taking account of such measurement error, the reliability of the test as a whole can be estimated.

The standard error of measurement (SEM), which is reported in Table 2, is an estimate of the amount of variation that can be expected in a test score. A raw score of 24 on a test with an SEM of 3.03 indicates about 67 percent certainty that a person's "true" score lies in a range from 20.97 to 27.03 (24 +/- 3.03), or that we can be 95 percent certain that the "true" score lies in a range from 17.94 to 30.06 [24 +/- (2 × 3.03)]. The smaller the SEM, the more accurate a test is as a measure. Individual test scores are best thought of as lying within a range, rather than as a single score, because of our inability to measure knowledge perfectly (the SEM is never zero).

TABLE 6. Percentage Response to Each Alternative: TFL

With instruction sample (*n = 891*)

Item	A	B	C	D
1	21	5	8	**65***
2	5	29	**38***	28
3	18	**58***	13	11
4	**67***	12	13	9
5	**43***	13	17	28
6	**61***	18	12	9
7	31	**41***	15	13
8	14	4	**64***	18
9	5	8	**84***	3
10	7	27	**40***	26
11	5	**84***	7	5
12	10	13	34	**42***
13	36	14	**39***	11
14	15	6	22	**57***
15	15	20	11	**54***
16	12	**69***	13	5
17	26	**48***	12	13
18	**34***	15	31	20
19	20	**54***	9	17
20	18	**48***	18	16
21	13	19	24	**44***
22	20	20	12	**49***
23	4	5	10	**80***
24	**63***	13	9	14
25	15	20	9	**56***
26	9	**56***	13	21
27	**44***	25	14	17
28	32	12	11	**45***
29	11	16	**50***	23
30	**42***	23	21	13
31	**35***	38	18	9
32	12	14	**66***	8
33	14	**59***	13	14
34	17	**31***	26	25
35	17	29	**41***	13
36	12	29	18	**41***
37	24	19	**36***	21
38	11	**66***	13	10
39	29	18	**43***	10
40	**57***	18	12	13
41	**37***	24	20	20
42	9	11	**67***	12
43	33	22	**40***	5
44	25	**52***	11	12
45	10	11	18	**61***

Note: *Correct answer

TABLE 7. Percentage Response to Each Alternative: TFL

Without instruction sample (*n = 327*)

Item	A	B	C	D
1	28	6	14	**52***
2	7	32	**32***	28
3	27	**49***	13	12
4	**59***	14	14	13
5	**38***	17	20	25
6	**56***	20	8	15
7	28	**38***	19	15
8	18	2	**54***	26
9	9	7	**81***	3
10	9	28	**33***	30
11	8	**77***	9	6
12	11	16	36	**37***
13	29	16	**41***	14
14	16	9	31	**44***
15	17	21	12	**50***
16	15	**62***	15	8
17	30	**44***	16	11
18	**29***	13	41	17
19	23	**48***	13	16
20	24	**40***	21	15
21	17	25	21	**37***
22	21	24	16	**40***
23	7	7	12	**74***
24	**53***	15	13	20
25	19	18	11	**52***
26	9	**52***	16	23
27	**37***	27	18	18
28	35	14	17	**34***
29	14	20	**47***	19
30	**37***	29	21	12
31	**30***	37	22	11
32	13	18	**58***	11
33	18	**50***	16	16
34	23	**29***	27	21
35	19	35	**32***	14
36	13	29	21	**37***
37	23	20	**35***	22
38	16	**56***	16	12
39	31	18	**38***	14
40	**46***	22	15	17
41	**32***	24	21	24
42	14	20	**50***	16
43	37	29	**26***	8
44	28	**40***	17	15
45	16	10	23	**50***

Note: *Correct answer

Alpha. Another estimate of overall test reliability is the coefficient alpha (Cronbach, 1951). It measures the internal consistency among test items with a common focus, which for this test is personal finance. One way to conceptualize internal consistency is to think of splitting the test in half and correlating scores on both halves. The alpha coefficient provides an estimate of the average of all possible split half correlations.

The alpha statistic ranges from zero to 1.00. The higher the coefficient, the better items work together in measuring the test construct, and thus the greater the statistical reliability of the test. An alpha of 1.00 would indicate a perfectly reliable test, while a coefficient of zero would indicate a totally unreliable one. The alpha of 0.87 for the TFL indicates that there is good internal consistency among items.

Finally, it should be stressed that the reliability of the TFL is substantially higher than that of most teacher-made tests of personal finance. A question to be determined by each test user is whether the test as a whole (or individual questions) is appropriate for his or her students.

Validity

Substantial evidence was collected for establishing the validity of the TFL as an achievement measure of understanding of personal finance in high school. This evidence reported in this section consists of content and construct validity.

Content. One of the most important validity question for an educational achievement test such as the TFL is whether or not it measures what *ought* to be measured. This question cannot be answered by reference to statistics. The work that was done to establish the *content validity* of the TFL was described in detail in Sections 1 and 2 of this manual. In brief, the specification of the personal finance content that should be represented on this test was explained in the *FL Standards* (CEE 2013). The twelfth grade benchmarks served as the guide for the development and selection of test questions on the TFL. The results of this content validity work are shown in the content specification tables (Table 1). In addition, the item rationales in the next section give an explanation for the correct answer for each test item that is based on the personal finance content in the *FL Standards.*

The process used for test development also ensured that the items on the TFL would contain valid content as outlined in the *FL Standards*. This work was reviewed by a National Advisory Committee (NAC) composed of five experts in personal finance and economics. These committee members and the two test developers evaluated the content of questions for any potential bias or reading problems that would affect the performance by different types of high school students. The content of all items was checked by NAC members before they were included on the test.

The content validity of the TFL was determined by comparing the test questions with the content specification determined to be important by authoritative experts in personal finance instruction for high schools. Nevertheless, there is no one standard for content validity. Whether the TFL is a valid test often depends on the purpose for which it is used.

Construct. There also is evidence from the student sample on the *construct* validity of the TFL. Construct validity refers to the ability of the test to measure the underlying focus of the test. The TFL is designed to measure understanding of personal finance among high school students who have almost completed their education. One type of evidence is whether the test performs well with different groups of students and in the expected direction. As shown in Table 2, high school students with personal finance or economics instruction scored 3.12 points higher than students without instruction. This difference is statistically significant in the expected direction. The probability that this difference is due to chance small (probability less than 0.01).

A further check on the construct validity of any individual test item may be made by reviewing the performance on each item for students with and without instruction (Table 4). By comparing the

percent correct from each group, it is clear that the "with" group performed better than the "without" group on 44 of the 45 items.

Additional Construct Evidence. Table 8 presents some additional descriptive statistics derived from the student sample for the TFL. The data are broken down by gender, grade level, the race or ethnicity, and verbal ability. For each subgroup, the mean score, standard deviation, and subgroup sample sizes are given.

In Table 8 higher scores for those students with instruction compared to the scores for those students without instruction are found across most categories. What these results indicate is that performance on the TFL is responsive to instruction in personal finance, regardless of other personal, social, or environmental characteristics. The breakdown data indicate that there is *construct* validity to the TFL.

The data on gender, grade level, and race/ethnicity were obtained from student replies on the answer sheets. An estimate of verbal ability was obtained from a short 8-item vocabulary test originally developed by Borgatta & Corsini (1964).

It is important to stress that these categorical breakdowns must be interpreted with caution. The reason is that some of the cell sizes (the subgroup *n*'s) are small. The breakdowns are also for single features without control over other feature. To control for confounding caused by other factors requires the use of more advanced statistical procedures and careful model development that are beyond the scope of this manual.

Conclusion

A standardized test such as the TFL has much to offer the teacher. This test instrument is carefully designed and developed to cover the subject matter that *ought* to be taught (and tested) near the end of high school. The sample data indicate that the TFL is a reliable measure and that the test items perform well with students at its target grade levels. Classroom tests in personal finance made by teachers are unlikely to attain these standards for test development. The use of the TFL as a measure of achievement in personal finance has many advantages for high school teachers and students.

TABLE 8. Descriptive Statistics for TFL: Students with and without Personal Finance or Economics Instruction

	With Instruction			Without Instruction		
	Mean	**Std. Dev.**	**Number**	**Mean**	**Std. Dev.**	**Number**
By student sex						
Females	22.61	7.85	431	20.31	7.46	160
Males	24.29	8.64	460	20.38	7.81	167
By grade level						
Grade 10	19.77	7.14	171	17.50	6.27	40
Grade 11	24.77	8.80	255	20.05	8.55	58
Grade 12	24.12	8.05	465	20.92	7.63	229
By race/ethnicity						
Black	18.59	7.46	99	18.88	7.04	60
Asian	25.63	9.04	40	23.95	10.29	22
Hispanic	20.80	7.16	107	17.94	6.12	82
White	25.11	8.14	551	21.90	7.91	125
Other	21.14	7.65	94	20.68	7.05	38
By verbal ability level						
Low	19.66	7.05	424	17.07	5.82	181
Medium	24.90	7.60	305	22.15	7.20	89
High	30.78	6.76	162	27.96	7.03	57
All students	23.47	8.31	891	20.35	7.63	327

6. ITEM RATIONALE: TEST OF FINANCIAL LITERACY

ITEM	RATIONALE
1. Juan is considering job offers from four companies, each of which will pay him $50,000 a year. If Juan is most interested in his career advancement, at which company would he most likely chose to work? *A. Company A that offers him health benefits* *B. Company B that provides him with a company car to drive* *C. Company C that gives him flexible work hours and holidays* *D. Company D that enrolls him in an executive training program**	When choosing where to work, people consider many factors. Since Jose is most interested in career advancement, Company D's executive training program is the only detail among the companies that is consistent with this desire. [1/12/2] [*Code for bracket item: Standard/Grade Level/Benchmark (CEE, 2013)*]
2. Sadie is a high school graduate who has decided to go to college next year. From a financial decision-making perspective, she has concluded that the *A. costs of going to college are decreasing.* *B. expected benefits of going to college are certain.* *C. costs of going to college are less than the expected benefits.** *D. expected benefits of going to college are less than the costs.*	Obtaining more education or training provides future benefits in the form of such things as increases in future income and a wider variety of job opportunities. However, this comes at a cost. Both the benefits and costs must factor into a sound financial decision, and people will choose to do something if the expected potential benefits are greater than the costs. [1/12/3]
3. Ruby decided to get a 2-year degree in electronics after graduating high school rather than enter the job market. What is the likely outcome of this decision on Ruby's future income? *A. She will earn a higher income as long as she then continues to get a 4-year degree.* *B. She will earn a higher income because she has more work skills to offer an employer.** *C. She will earn a higher income but it will not cover the costs of the additional schooling.* *D. She will earn a higher income because employers are required to pay higher wages for additional degrees earned.*	An informed decision regarding whether or not to pursue further education or training after high school requires an understanding of the benefits that can be gained. Ruby understands that a 2-year degree in electronics will lead to a higher income. This is because of the skills she will develop that will be valuable to employers, and not due to any requirement that employers pay her more, nor will she need more education after the two years to receive the benefits of the 2-year degree. She would not have pursued the 2-year degree if she believes the higher income will not cover the costs. [1/12/4]
4. Which of the following generally increases the wages or salaries that businesses pay their employees? *A. an increase in the productivity of workers** *B. an increase in the interest rate for business loans* *C. an increase in the cost of resources that are used by a business* *D. an increase in the number of people in the economy who are unemployed*	Labor markets are a major determinant of wages. Workers who are more productive are more valuable to employers and this leads to a higher demand for their services. Higher demand leads to higher wages. Increases in the other costs businesses face will not necessarily lead to greater wages, and the more people unemployed will tend to decrease wages in the labor market. [1/12/5]

ITEM	RATIONALE
5. Justin decided to work in the home construction industry after he graduated from high school because he likes to build things and be outside. Which economic event is most likely to increase the wage or salary he is paid? *A. More applicants obtain home mortgages from banks.** *B. More high school graduates seek employment in construction.* *C. Higher interest rates lead to a downturn in the construction industry.* *D. Local governments exercise more regulatory control over new housing.*	Labor markets, which determine the wages paid to different types of labor, are themselves influenced by overall economic conditions. In this case, an increase in mortgages obtained to buy houses will increase demand for housing, which in turn will increase the demand for and wages of workers such as Justin in the construction industry. All other options involve economic events that will either decrease the demand for or increase the supply of construction workers, placing downward pressure on their wages. [1/12/6]
6. Most of the payments to Social Security recipients come from which source? *A. taxes paid by people currently working and their employers** *B. taxes paid by recipients and their employers when they were working* *C. individual retirement accounts funded by current workers and their employers* *D. individual retirement accounts funded by recipients and their employers when they were working*	Transfer payments are one of the uses of taxes paid by workers. Social Security is a federal, not private, program that provides retirement, disability and survivor benefits. Although some believe that the taxes paid by workers over their working lifetimes is saved and paid back to them in the form of Social Security payments, in reality the program transfers taxes paid by current workers to current recipients. [1/12/7]
7. Which of the following can be deducted from federal income taxes to lower the amount Olivia owes? *A. interest earned on savings* *B. the value of gifts to charity** *C. the cost of food and clothing* *D. capital gains from stock sales*	How much income people earn, and what they do with the income, determine the amount of taxes they pay. One way to reduce the amount of federal income taxes a person pays is to donate to a charity. Interest earned on savings and capital gains are taxable income and thus increase taxes paid, and the cost of food and clothing cannot be deducted. [1/12/8]
8. Alex is thinking of buying a five-year-old car from Owen. Owen advertised the car as like new. Which of the following would give Alex the most reliable source of information on how dependable the car might be? *A. the current owner of the car* *B. a friend who is a taxi cab driver* *C. an auto mechanic Alex has used in the past** *D. a sales person where the car was originally purchased*	Information provided about something for sale might be influenced by the incentives of the provider, and could be misleading. Of the four alternatives, only the auto mechanic is both knowledgeable about used cars and unlikely to have in mind anyone's interest other than Alex's. [2/12/1 or 2/8/1]
9. Maddie gets a haircut at the hair salon, washes her car at the spray wash, orders a coffee at the coffee shop, and gets a flu shot at the drugstore. Which one of her consumer purchases has the most widespread and positive effect on others in her community? *A. coffee* *B. haircut* *C. flu shot** *D. car wash*	Some purchases can have spillover effects on people that have nothing directly to do with the transaction. A flu shot will not only benefit Maddie, but will indirectly benefit others who come in contact with her in the future. None of the other transactions Maddie undertakes will have a clear spillover effect on other people. [2/12/2]

ITEM	RATIONALE
10. A car is priced at $25,000 at two dealerships. Each car has a warranty. One dealership offers a longer warranty on its cars. What will be the likely effect of the longer warranty? *A. lowers the lifespan of the car* *B. makes leasing the car a better option* *C. lowers the long-term cost of owning the car** *D. increases the licensing and registration fees of owning the car*	Well-informed decisions regarding purchases of expensive products that will be used over a long period of time entail investigating the durability and maintenance costs involved with owning the product. Warranties transfer the risk of some types of future costs from the buyer to the seller, lowering the long-term cost of owning a car. Longer warranties will increase this value. [2/12/3]
11. The Electronics Shop advertises a TV as costing $100 per month for six months instead of stating that it costs $600. Why would the store use this type of ad? *A. to get consumers to pay more for the TV* *B. to make the TV seem more affordable to consumers** *C. to encourage consumers to pay for a warranty on the TV* *D. to make it easier for consumers to compare the total cost of TVs*	Some sellers attempt to make the price of a product appear lower through various techniques. In this case, the Electronics Shop believes that payments of $100 a month might make the TV seem more affordable to buyers than the full price of $600. [2/12/4]
12. When Desmond buys an expensive product he spends time getting information about it. But when he buys an inexpensive product he spends little time getting information on it. Which of the following best explains his economic decision about gathering product information? *A. The benefits of getting information on the expensive product are low.* *B. The benefits of getting information on the inexpensive product are high.* *C. The benefits of getting information on the inexpensive product are less than the costs.* *D. The benefits of getting information on the expensive product are greater than the costs.**	Searching for information about a product, such as quality and price differences across sellers, costs time, effort and possibly money. These costs are likely greater than the benefit of this information if searching for a pack of gum, but are likely less than the benefit when the product is expensive. For instance, a five-percent difference in the price of gum is very small relative to a five-percent difference in the price of a car. [2/12/5]
13. Most states have "lemon laws." These laws protect buyers from *A. false advertising.* *B. credit card fraud.* *C. defective products.** *D. contaminated produce.*	Federal, state and sometimes local governments enact laws to protect buyers. This lowers the cost to buyers of gathering information about the quality of the products they might purchase. Lemon laws are an example of these protections. [2/12/7]
14. Taylor likes to shop. She often purchases expensive things without thinking about the consequences. Taylor's tendency to buy on impulse *A. reduces her earned income.* *B. increases the amount she saves.* *C. increases the interest rate on her credit card.* *D. reduces her opportunities to buy things in the future.**	Because people must choose between spending now and saving for future purchases, choosing one necessarily reduces the amount of money available for the other. If Taylor often buys on impulse, she will have less money to spend in the future. [3/12/1]

ITEM	RATIONALE
15. What is most likely to happen when there is a large and sustained increase in the inflation rate? *A. the cost of living will decrease* *B. the value of savings will increase* *C. the cost of loans for automobiles will decrease* *D. the interest rate on home mortgages will increase**	The interest rate consumers pay is expressed as a nominal rate (real interest rate plus the inflation rate). An increase in the inflation rate increases the nominal interest rate. The other options are incorrect. An increase in the inflation rate increases the cost of living, the cost of loans for automobiles, and reduces the value of savings. [3/12/2]
16. Noah has $15,000 in his savings account at the major bank in his city. Which of the following best explains why Noah feels his money is safe? *A. The bank pays interest on his savings account.* *B. Noah's savings account at the bank is FDIC-insured.** *C. The bank offers investment services in addition to savings accounts.* *D. Noah has both a checking account and a savings account at the bank.*	The Federal Deposit Insurance Corporation (FDIC) insures checking, savings, and a limited number of other deposits at member banks, which include virtually all major banks, up to $250,000. If Noah's bank fails and does not have reserves to cover his deposits, he will not lose his $15,000. Neither interest, investment services nor two accounts will protect his money. [3/12/6]
17. What is the primary purpose of an IRA? *A. allows workers to pay taxes with each paycheck* *B. provides incentives for people to save for retirement** *C. eliminates the need for savers to collect Social Security* *D. creates savings accounts for current health-care expenses*	Individual Retirement Accounts (IRAs) were created to provide people with tax advantages other forms of long-term saving and investing did not have. These tax advantages provide an incentive for people to save for retirement. [3/12/7]
18. Which of the following is an advantage of a 401(k) retirement plan over a private savings plan that a worker establishes for retirement? *A. Employers may contribute to a 401(k) plan.** *B. An unlimited amount can be contributed to a 401(k) plan.* *C. The money withdrawn from a 401(k) plan at retirement is not taxed.* *D. The government guarantees a minimum rate of return on a 401(k) plan.*	401(k) retirement plans are offered by employers to employees and allow employees to contribute part of their paycheck to retirement savings. Many employers provide matching, where the employer also contributes to the employee's account. There are restrictions to 401(k) plans, such as limits on contribution amounts. Also, contributions to 401(k) plans are tax deferred, so withdrawals are taxed. No minimum rate of return is guaranteed. [3/12/8]
19. Mia is comparing the terms for credit cards. She always pays on time, but rarely pays off her entire balance. Which of the following features is most important for Mia to consider when selecting a credit card? *A. lowest annual fee* *B. lowest interest rate** *C. shortest grace period* *D. lowest fee for missed payments*	Given Mia's preference for paying on time, but holding a balance, Mia is best off using a credit card with a low interest rate to reduce her interest costs. Annual fees might be a consideration but likely small relative to annual interest charges if balances are continually held. Grace periods and fees for missed payments are less important since she pays on time. [4/12/1]

ITEM	RATIONALE
20. Collateral for a loan is *A. the fee charged for not repaying the loan.* *B. property the bank can sell if the loan is not repaid.** *C. the amount in damages the bank is due for a late payment.* *D. the contract the bank holds in its vault until the loan is repaid.*	Collateral is property, such as a car for an auto loan or a house for a mortgage, that reduces the lender's risk surrounding the loan transaction because the lender can sell the car or house if the borrower does not repay the loan. [4/12/3]
21. A new car loan will likely have a higher interest rate if the borrower *A. earns a higher income.* *B. has a higher credit score.* *C. wants a shorter term loan.* *D. makes a lower down payment.**	All else equal, a lower down payment will require more of the purchase amount to be borrowed, and the borrower will have less equity initially invested in what the loan is helping the borrower purchase. This will lead to a greater risk on the part of the lender, and a higher interest rate to cover the greater risk. All other options would have the effect, if any, of reducing the interest rate. [4/12/4]
22. What does a credit bureau do? *A. makes decisions about credit applications* *B. matches banks to applicants who qualify for a loan* *C. explains to consumers why they have been denied credit* *D. provides creditors with reports of consumers' credit-paying histories**	A credit bureau keeps track of consumers' credit and payment histories. Lenders, or creditors, use reports created by credit bureaus when deciding on the credit worthiness of potential borrowers. [4/12/5]
23. Which of the following will most directly affect a credit score? *A. age* *B. value of assets* *C. annual income* *D. payment history**	Among the factors that influence a consumer's credit score is the consumer's history of making payments for loan, utility bills and other items on time. Age, the value of assets owned and annual income are not factored into credit scores. [4/12/6]
24. Sara has a bad credit score. One likely consequence is that *A. a landlord may not rent her an apartment.** *B. a stock broker may not sell her shares of stock.* *C. her employer may drop her health care coverage.* *D. the Internal Revenue Service may audit her taxes.*	Credit scores are often used by landlords because they provide evidence of the potential renter's propensity to make payments on time. None of the other options concern the need to assess future payment risk. [4/12/7]
25. Credit counseling services will do which of the following for consumers with credit problems? *A. help them apply for a credit card* *B. provide legal help to file bankruptcy* *C. represent them in court against creditors* *D. negotiate payment schedules with creditors**	Consumers with debt and trouble paying it off can receive guidance through credit counseling. This service can provide assistance in negotiating payment schedules with creditors, but does not provide legal assistance. Since credit is the problem, it is unlikely a credit counselor will help with credit card applications. [4/12/9]

ITEM	RATIONALE
26. Mason is 25 years old. He got into financial problems and had to declare bankruptcy. What will happen to his credit score? *A. improve because he will owe less money* *B. worsen because he did not pay back his creditors in full and on time** *C. improve because by law bankruptcy is not recorded on a credit score* *D. worsen because there is a penalty for filing for bankruptcy before age 30*	Bankruptcy can be an option for people like Mason when they are unable to repay debt. The benefit of filing for bankruptcy is that it discards some debt and leaves the individual with payments that are manageable. The cost, however, is significant since the notice of bankruptcy will appear on a credit report for up to 10 years and considerably reduces a credit score. [4/12/10]
27. Why are mortgage interest rates generally lower than credit card interest rates? *A. mortgages are backed by collateral** *B. interest rates are lower on larger loans* *C. most consumers generally do not qualify for mortgages* *D. federal regulations set credit card rates higher than mortgage rates*	Collateral is property that a lender can sell if the borrower does not pay back the loan. Collateral reduces the risk associated with making a loan, and reduces the interest rate, all else constant. Houses serve as collateral for mortgages, but credit card loans are "unsecured," or contain no collateral. [4/12/11]
28. Consumers have rights regarding their credit reports that include *A. receiving a free copy of their credit report every month.* *B. adding relevant personal information to their credit reports.* *C. removing any negative information companies put on their credit reports.* *D. disputing incorrect information placed on their credit reports by companies.**	Credit reports are created by credit report agencies and are largely out of the control of the consumer with regard to what is included or excluded. Individuals are by law entitled to receive their credit reports for free, but annually, not monthly. Consumers also have the right to dispute information on the report if they believe the information to be incorrect. [4/12/13]
29. Which of the following statements about taxes on financial investments is correct? *A. Investors pay no taxes on capital gains from stock investments.* *B. Investors pay no taxes on interest earned from bond investments.* *C. Tax rates on financial investments will vary by the type of investment.** *D. Tax rates are higher for high-risk investments than they are for low-risk investments.*	Although an investor must pay taxes on income earned on financial investments, whether it be capital gains or interest earned, these taxes vary by state and by type of instrument. This rate does not vary by the investment's risk. [5/12/2]
30. Stock A has been issued by a new corporation. Stock B is considered a "blue chip" stock. Which is true about these two stocks? *A. Stock A is expected to be relatively more risky than stock B.** *B. Stock B is expected to earn a higher rate of return than stock A.* *C. Stock B is expected to pay a guaranteed rate of return and stock A will not.* *D. Stock A is expected to hold its value better than Stock B if interest rates rise.*	Stocks of large companies with long histories and strong reputations are often considered "blue chip" stocks. Investing in blue chip stocks is therefore less risky than investing in a new corporation's stock. Stock in new companies have a higher expected rate of return, but more variance in the actual rate of return (more risk) than blue chip stocks, and blue chip stocks are more likely to hold their value. [5/12/5]

ITEM	RATIONALE
31. Suppose a corporation issues two bonds. One bond matures in a year. The other bond matures in ten years. The bond maturing in one year is expected to *A. have a lower interest rate.** *B. have a higher interest rate.* *C. provide less diversification.* *D. provide more diversification.*	The longer until a bond matures, the greater is the risk of default. Because of this, a bond that matures in ten years will pay a higher interest rate to offset the greater risk relative to a bond that matures in one year. [5/12/6]
32. Which of the following is the best example of a diversified portfolio? *A. Nora purchases several real estate lots in a small town.* *B. Nolan owns a U.S. coin collection covering all periods of history.* *C. Eva purchases mutual funds with stocks from different industries.** *D. Morgan holds U.S. Treasury bonds with the same dates of maturity.*	A diversified portfolio contains a wide range of investment assets to reduce the risk associated with one sector or one type of investment. A mutual fund containing stocks from different industries would therefore be considered diversified. Real estate, a coin collection and U.S. Treasury bonds with similar maturities alone are not considered diversified investments. [5/12/7]
33. If Corporation XYZ announces profits greater than expected, what is most likely to happen? *A. The price of its stock will decrease.* *B. The price of its stock will increase.** *C. The interest rate on its stock will decrease.* *D. The interest rate on its stock will increase.*	Asset prices reflect what is known about the potential returns. New information such as an announcement of greater-than-expected profit will increase the demand for and therefore increase, not decrease, the price of a company's stock. Since stocks do not pay interest, the other options are incorrect.[5/12/8]
34. Which of the following would cause the current value of bonds to increase? *A. Average income falls.* *B. Interest rates decrease.** *C. Government regulation increases.* *D. The number of bonds issued increases.*	If interest rates decrease, the price of an outstanding bond with a fixed interest rate will increase since its *relative* interest rate has risen causing greater demand for the bond. Falling incomes, increased government regulation and a larger supply of bonds will all place downward pressure on bond prices. [5/12/9]
35. One way the government helps promote well-functioning financial markets is to ensure investors have *A. a mix of stocks and bonds in their portfolios.* *B. a guaranteed rate of return on their investments.* *C. accurate information about a company's profits.** *D. recommendations for the most highly-rated stocks and bonds.*	Accurate information for all investors is essential for the proper functioning of financial markets because it helps them make informed investment decisions. Government helps financial markets work by requiring accurate information. The government cannot guarantee a rate of return on investments, nor does it ensure diversity or make recommendations regarding highly-rated stocks. [5/12/12]

ITEM	RATIONALE
36. The primary responsibility of the Securities and Exchange Commission (SEC) is to *A. provide low interest loans to businesses.* *B. ensure the safety and soundness of banks.* *C. recommend quality stocks and bonds for investors.* *D. protect investors from illegal activity by companies.**	Created by an act of U.S. Congress in 1934, the SEC's primary responsibilities include protecting investors, maintaining fair, orderly, and efficient markets, and facilitating capital formation. The SEC does not conduct transactions nor make recommendations to investors. Other government agencies are responsible for overseeing the soundness of the banking system. [5/12/13]
37. Paul paid for auto insurance every year but never had an accident or filed a claim. Did he get anything of value for the money he paid? *A. No, because the insurance company never had to pay a claim.* *B. No, because he protected himself and his car by being a careful driver.* *C. Yes, because the insurance company was paid to assume his accident risk.** *D. Yes, because the insurance company paid his interest on the premiums he paid.*	Risk creates a cost to individuals. Insurance transfers risk from the buyer to the seller, and therefore the buyer benefits even if no claims are filed. [6/12/2]
38. In which of the following situations would a consumer be most likely to buy an extended warranty? *A. Warranty's Price: low; Probability of Using It: low* *B. Warranty's Price: low; Probability of Using It: high** *C. Warranty's Price: high; Probability of Using It: low* *D. Warranty's Price: high; Probability of Using It: high*	Extended warranties are a form of insurance. A person is more likely to purchase insurance if the expected benefit outweighs the cost. The expected benefit of an extended warranty is greater the higher is the probability of using it. The cost of an extended warranty is its price, so the lower the price, the lower the cost. [6/12/3]
39. Kayla has a low tolerance for taking risks because she wants to protect her growing family. She would be expected to choose an insurance policy that has *A. a low premium.* *B. many exclusions.* *C. a low deductible.** *D. limited coverage.*	People differ in the amount of risk they are willing to accept, and thus the amount and type of insurance coverage they prefer. Choosing a higher deductible subjects the insured to more risk, all else equal. Those with a low tolerance for risk, such as Kayla, would prefer lower deductibles. Many exclusions and limited coverage increase Kayla's risk, and a low premium is typically associated with higher deductibles. [6/12/4]
40. Lucas got a loan from ABC Credit Union to buy a car. Which of these is true about Lucas's decision to buy auto insurance? *A. Both the state and the lender can require him to buy auto insurance.** *B. Whether he has to buy auto insurance depends on the price he paid for the vehicle.* *C. If he doesn't have an accident in the first six months, he doesn't have to buy insurance.* *D. If he gets a loan from the car dealer instead of a credit union, the dealer will insure the car.*	Governments and private contracts can require people to buy insurance. When Lucas gets a loan to buy a car, the car becomes collateral for the loan, and the lender is likely to require Lucas purchase insurance to reduce the lender's risk. All states can, and nearly all do, require car owners to have auto insurance. Those that don't have in place laws that significantly add to the cost of an accident for the uninsured. [6/12/5]

ITEM	RATIONALE
41. Which of the following actions by insurance companies encourage policyholders to take fewer risks once they are insured? *A. requiring policyholders to pay a co-pay** *B. requiring policyholders to pay dividends* *C. selling only policies with a zero deductible* *D. charging a low premium for the insurance*	Insurance reduces the insured's risk of an activity since the risk is now held by the insurance company. This leads to what economists call "moral hazard," where the insured might behave in a way that could increase the insurance company's expected costs. Co-pays and deductibles are ways insurance companies share risk and expected costs and reduce the problem of moral hazard. [6/12/6]
42. Maria had a stroke and cannot work at her job as an accountant for at least a year. Which type of insurance would replace her income while she cannot work? *A. life insurance* *B. liability insurance* *C. disability insurance** *D. unemployment insurance*	Disability provides funds to replace income lost while an individual is ill or injured and unable to work, such as Maria's situation. Life insurance benefits are paid to the insured's beneficiaries in the event of the policyholder's death. Liability insurance provides funds to pay for costs to others if the insured is found to be liable, and unemployment insurance is paid by governments to eligible workers who become unemployed through no fault of their own. [6/12/9]
43. Which type of auto insurance would pay for the repair of a cracked windshield caused by a rock hitting it? *A. liability* *B. collision* *C. comprehensive** *D. uninsured motorist*	Comprehensive auto insurance pays for damage to your auto caused by an event other than a collision, such as a cracked windshield caused by a rock hitting it. Collision insurance pays for damage to the insured's vehicle sustained from hitting another vehicle or object, and uninsured motorist insurance covers losses when another driver is both at fault and uninsured. [6/12/10]
44. The primary purpose of life insurance is to *A. provide a safe savings program.* *B. protect a family from lost wages.** *C. protect a family from unemployment.* *D. provide for expenses such as having a baby.*	Life insurance benefits are paid to the insured's beneficiaries in the event of the policyholder's death. These payments can be used to replace wages lost when the insured person dies. [6/12/11]
45. Workers' compensation is an insurance program for workers *A. after they retire.* *B. who have low incomes.* *C. after they lose their jobs.* *D. who have been hurt on the job.**	Worker's compensation provides insurance to those who are injured on the job. It is part of the larger social safety net administered by the federal and state governments that includes Social Security for retirement, Medicaid for low income health insurance, and unemployment insurance for those who lose their jobs through no fault of their own. [6/12/12]

7. REFERENCES

Borgatta, E.F., & Corsini, R.J. (1964). *Quick word test manual*. New York: Harcourt, Brace, and World.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrica*, 16, 297-334.

Council for Economic Education (CEE). (2010). *Voluntary National Content Standards in Economics*. New York: Council for Economic Education.

Council for Economic Education (CEE). (2013). *National Standards in Financial Literacy*. New York: Council for Economic Education.

Walstad, W.B., & Rebeck, K. (2005). *Financial Fitness for Life: High School Test Examiner's Manual (Grades 9-12)*. New York: Council for Economic Education.

Walstad, W.B., & Rebeck, K. (2010). *Basic Economic Test: Examiner's Manual* (3rd ed.). New York: Council for Economic Education

Walstad, W.B., & Rebeck, K. (2010). *Test of Economic Knowledge: Examiner's Manual* (2nd ed.). New York: Council for Economic Education

Walstad, W.B., & Rebeck, K. (2013). *Test of Economic Literacy: Examiner's Manual* (4th ed.). New York: Council for Economic Education

Walstad, W.B., K. Rebeck, & R. MacDonald (2010). "The Effect of Financial Education on the Financial Knowledge of High School Students." *Journal of Consumer Affairs. 44:2* (pp. 317-335)

Appendix 1. Personnel for the TFL Development

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Associate Project Director

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Council Officer

Kevin Gotchet, *Council for Economic Education (New York)*

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Elizabeth Breitbach, University of South Carolina
Brenda Cude, University of Georgia
Andrew Hill, Federal Reserve Bank of Philadelphia
Bonnie Meszaros, University of Delaware

Appendix 2. Schools Participating in TFL Testing

ALABAMA

Brookwood High School
Brookwood 35444

ARIZONA

Desert Mountain High School
Scottsdale 85259

ARKANSAS

eStem High Public Charter School
Little Rock 72201

Rector High School
Rector 72461

CALIFORNIA

Mission Hills High
San Marcos 92069

COLORADO

Civa Charter Academy
Colorado Springs 80918

Plum Creek Academy
Highlands Ranch 80129

CONNECTICUT

Northwestern Regional High School
Winsted 06098

Southington High School
Southington 06489

The Gunnery
Washington 06793

DELAWARE

Seaford Senior High School
Seaford 19973

FLORIDA

Mandarin High School
Jacksonville 32258

St Francis Catholic High School
Gainesville, FL 32606

ILLINOIS

Aspira Early College High School
Chicago 60641

Gifford Street High School
Elgin 60120

Quincy Area Vocational Technical Center
Quincy 62301

Vernon Hills High School
Vernon Hills 60061

INDIANA

Zionsville Community High School
Zionsville 46077

KENTUCKY

Highlands High School
Fort Thomas 41075

MAINE

Mt. Abram Regional High School
Salem 04983

MARYLAND

Crisfield High School & Academy
Crisfield 21817

Washington High School & Academy
Princess Anne 21853

MICHIGAN

Eisenhower High School
Shelby Township 48316

Reese High School
Reese 48757

MINNESOTA

Harding Senior High
St. Paul 55106

Underwood Secondary
Underwood 56586

MISSISSIPPI

Ocean Springs High School
Ocean Springs 39564

MISSOURI

Hannibal Career & Technical Center
Hannibal 63401

NEBRASKA

Alliance High School
Alliance 69301

Bellevue West Sr High School
Bellevue 68123

Elgin High School
Elgin 68636

Gretna High School
Gretna 68028

Hay Springs High School
Hay Springs 69347

High School At Johnson
Johnson 68378

Louisville High School
Louisville 68037

Nebraska City High School
Nebraska City 68410

South Platte High School
Big Springs 69122

NEW YORK

Preston High School
Bronx 10465

NORTH CAROLINA

East Columbus High
Lake Waccamaw 28450

Hillside High School
Durham 27707

OHIO

Springboro High School
Springboro 45066

PENNSYLVANIA

Manheim Township High School
Lancaster 17601

TEXAS

DeBakey High School for Health Professions
Houston 77021

VIRGINIA

Fort Defiance High School
Fort Defiance 24437

VIRGINIA (Continued)

Madison County High School
Madison 22727

WISCONSIN

Milton High School
Milton 53563

WASHINGTON

Todd Beamer High School
Federal Way 98003

INTERNATIONAL

CANADA

Fort Richmond Collegiate
Winnipeg, Manitoba, R3T 3B3

Appendix 3. Answer Form and Scoring Key, TFL

Answer Form

	A	B	C	D		A	B	C	D		A	B	C	D		A	B	C	D		A	B	C	D
1	○	○	○	○	**11**	○	○	○	○	**21**	○	○	○	○	**31**	○	○	○	○	**41**	○	○	○	○
2	○	○	○	○	**12**	○	○	○	○	**22**	○	○	○	○	**32**	○	○	○	○	**42**	○	○	○	○
3	○	○	○	○	**13**	○	○	○	○	**23**	○	○	○	○	**33**	○	○	○	○	**43**	○	○	○	○
4	○	○	○	○	**14**	○	○	○	○	**24**	○	○	○	○	**34**	○	○	○	○	**44**	○	○	○	○
5	○	○	○	○	**15**	○	○	○	○	**25**	○	○	○	○	**35**	○	○	○	○					
6	○	○	○	○	**16**	○	○	○	○	**26**	○	○	○	○	**36**	○	○	○	○					
7	○	○	○	○	**17**	○	○	○	○	**27**	○	○	○	○	**37**	○	○	○	○					
8	○	○	○	○	**18**	○	○	○	○	**28**	○	○	○	○	**38**	○	○	○	○					
9	○	○	○	○	**19**	○	○	○	○	**29**	○	○	○	○	**39**	○	○	○	○					
10	○	○	○	○	**20**	○	○	○	○	**30**	○	○	○	○	**40**	○	○	○	○					

_____ RAW SCORE

_____ PERCENTILE SCORE

NAME _____ DATE _____
month day year

AGE _____ DATE OF BIRTH _____ GENDER Male Female
month day year (circle one)

SCHOOL OR TEST CENTER _____

ADDRESS _____
number and street city state zip

INSTRUCTOR _____ GRADE OR YEAR _____ SEMESTER _____

Appendix 3. Answer Form and Scoring Key, TFL (Continued)

Scoring Key

	A	B	C	D
1	○	○	○	●
2	○	○	●	○
3	○	●	○	○
4	●	○	○	○
5	●	○	○	○
6	●	○	○	○
7	○	●	○	○
8	○	○	●	○
9	○	○	●	○
10	○	○	●	○
11	○	●	○	○
12	○	○	○	●
13	○	○	●	○
14	○	○	○	●
15	○	○	○	●
16	○	●	○	○
17	○	●	○	○
18	●	○	○	○
19	○	●	○	○
20	○	●	○	○
21	○	○	○	●
22	○	○	○	●
23	○	○	○	●
24	●	○	○	○
25	○	○	○	●
26	○	●	○	○
27	●	○	○	○
28	○	○	○	●
29	○	○	●	○
30	●	○	○	○
31	●	○	○	○
32	○	○	●	○
33	○	●	○	○
34	○	●	○	○
35	○	○	●	○
36	○	○	○	●
37	○	○	●	○
38	○	●	○	○
39	○	○	●	○
40	●	○	○	○
41	●	○	○	○
42	○	○	●	○
43	○	○	●	○
44	○	●	○	○
45	○	○	○	●