

# BASIC FINANCE TEST: EXAMINER'S MANUAL

William B. Walstad

Ken Rebeck

Prepared for the Council for Economic Education

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## **ABOUT THE AUTHORS**

**William B. Walstad** is Professor of Economics at the University of Nebraska–Lincoln.

**Ken Rebeck** is Professor of Economics at St. Cloud State University (Minnesota).

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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 are part of the total package. The *Basic Finance Test: Examiner's Manual* offers teachers and test administrators the essential information they need to test the understanding of upper elementary and lower middle school students (fifth and sixth graders) on personal finance and compare the results with other students across the nation.

The *Basic Finance Test* is one of three CEE standardized assessments for personal finance. The other two assessments are the *Test of Financial Literacy* for upper high school students (eleventh and twelfth graders) and the *Test of Financial Knowledge* for upper middle school or lower high school students (eighth and ninth graders). All three assessments are available online for teacher use with students. The CEE also has a test bank of questions that can be used by teachers 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 precious time to write, review, and revise items for the *Basic Finance Test*, which 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



## BASIC FINANCE TEST: EXAMINER'S MANUAL

The *Basic Finance Test* (BFT) is a standardized test for measuring the achievement of upper elementary school or lower middle 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 *BFT 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 of achievement in personal finance that would typically be taught at the upper elementary school or lower middle school levels.

### 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 for use with their students. This *Examiner's Manual* only describes the test development phase of the project and primarily focuses on the BFT.

**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 BFT content would emphasize what students should know by fourth grade as described in the 32 fourth grade benchmarks. The middle school test, titled the *Test of Financial Knowledge* (TFK), would test the 49 eighth grade benchmarks. The high school test, called the *Test of Financial Literacy* (TFL), would assess the 63 twelfth grade benchmarks.

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 constructed as 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 TEL items, the 40 TEK items, and the 30 BET items. 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 director for the project. His job was to work with Walstad on the item development, preparation of the final 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 through the CEE's online assessment center, and monitored progress of the project.

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 pre-college 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*. Each member of the NAC, therefore, had valuable work experience and knowledge to contribute to test development. **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 test. 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 35 test items for the BFT 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 BFT.

## **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 fourth grade. Table 1 shows the standards and the distribution of items across the fourth grade benchmarks for the BFT.

**TABLE 1. BFT Standards and Benchmarks**

<b>Standard 1: Earning Income</b>	
<p>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.</p>	<b>9 items or 26 %</b>
<b>Income Benchmarks: Grade 4</b>	
1. People have many different types of jobs from which to choose. Different jobs require people to have different skills.	<b>Item No. 1</b>
2. People earn an income when they are hired by an employer to work at a job.	<b>2</b>
3. Workers are paid for their labor in different ways such as wages, salaries, or commissions.	<b>3</b>
4. People can earn interest income from letting other people borrow their money.	<b>4</b>
5. People can earn income by renting their property to other people.	<b>5</b>
6. People who own a business can earn profits, which is a source of income.	<b>6</b>
7. Entrepreneurs are people who start new businesses. Starting a business is risky for entrepreneurs because they do not know if their new businesses will be successful and earn a profit.	<b>7</b>
8. Income can be received from family or friends as money gifts or as an allowance for which no specified work may be required.	<b>8</b>
9. Income earned from working and most other sources of income are taxed. The revenue from these taxes is used to provide government goods and services.	<b>9</b>
<b>Standard 2: Buying Goods and Services</b>	
<p>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.</p>	<b>7 items or 20%</b>
<b>Buying Standard Benchmarks: Grade 4</b>	
1. Economic wants are desires that can be satisfied by consuming a good, a service, or a leisure activity.	<b>Item No. 10</b>
2. People make choices about what goods and services they buy because they can't have everything they want. This requires individuals to prioritize their wants.	<b>11</b>
3. People spend a portion of their income on goods and services in order to increase their level of satisfaction or happiness.	<b>12</b>
4. Whenever people buy something, they incur an opportunity cost. Opportunity cost is the next best alternative that is given up when a person makes a choice.	<b>13</b>
5. Informed decision making requires comparing the costs and benefits of spending alternatives. Costs are things that a decision maker gives up; benefits are things that a decision maker gains.	<b>14</b>
6. People's spending choices are influenced by prices as well as many other factors, including advertising, the spending choices of others, and peer pressure.	<b>15</b>
7. Planning for spending can help people make informed choices. A budget is a plan for spending, saving, and managing income.	<b>16</b>
<b>Standard 3: Saving</b>	
<p>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.</p>	<b>6 items or 17%</b>
<b>Saving Benchmarks: Grade 4</b>	
1. Income is saved, spent on goods and services, or used to pay taxes.	<b>Item No. 17</b>
2. When people save money, they give up the opportunity to spend that money to buy things now in order to buy things later.	<b>18</b>
3. People can choose to save money in many places, for example, at home in a piggy bank or at a bank, credit union, or savings and loan.	<b>19</b>
4. People set savings goals as incentives to save. One savings goal might be to buy goods and services in the future.	<b>20</b>

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**TABLE 1. BFT Standards and Benchmarks**

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- |   |           |
|---|-----------|
| 5. A savings plan helps people reach their savings goals.   | <b>21</b> |
| 6. When people deposit money into a bank (or other financial institution), the bank pays them interest. Banks attract savings by paying interest. People also deposit money into banks because banks are safe places to keep their savings. | <b>22</b> |

**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.

**5 items or 14%**

**Using Credit Benchmarks-Grade 4**

- |  | <b>Item No.</b> |
|--|-----------------|
| 1. Interest is the price the borrower pays for using someone else's money.   | <b>23, 24</b>   |
| 2. When people use credit, they receive something of value now and agree to repay the lender over time or at some date in the future, with interest.   | <b>25</b>       |
| 3. By using credit to buy durable goods, such as cars, houses, and appliances, people are able to use the goods while paying for them.   | <b>26</b>       |
| 4. Borrowers who repay loans as promised show that they are worthy of getting credit in the future. A reputation for not repaying a loan as promised can result in higher interest charges on future loans, if loans are available at all. | <b>27</b>       |

**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.

**3 items or 9%**

**Financial Investing: Benchmarks: Grade 4**

- |  | <b>Item No.</b> |
|--|-----------------|
| 1. After people have saved some of their income, they must decide how to invest their savings so that it can grow over time.   | <b>28, 29</b>   |
| 2. A financial investment is the purchase of a financial asset such as a stock with the expectation of an increase in the value of the asset and/or increase in future income. | <b>30</b>       |

**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.

**5 items or 14%**

**Protecting and Insuring Benchmarks: Grade 4**

- |   | <b>Item No.</b> |
|---|-----------------|
| 1. Risk is the chance of loss or harm.  | <b>31, 32</b>   |
| 2. Risk of harm or loss from accidents and unexpected events is an unavoidable part of daily life.                | <b>33</b>       |
| 3. Individuals can either choose to accept risk or take steps to protect themselves by avoiding or reducing risk. | <b>34</b>       |
| 4. One method to cope with unexpected losses is to save for emergencies.  | <b>35</b>       |
-

Several points should be remembered when evaluating the coverage of the test across personal finance standards in Table 1. First, the BFT 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 (3 to 9) 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 usually 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 in upper elementary school or lower middle school (for fifth or sixth graders) based on the content outlined by the *FL Standards*. The weights for the test content by standard were largely determined by the number of fourth grade benchmarks. Some standards have more benchmarks (1, 2, and 3), and test items, than other standards (4, 5, and 6).

Fourth, test items can be classified by cognitive level. The problem with using a cognitive scheme with five or six levels is that the ratings can be somewhat arbitrary. Such fine distinctions may not be of much value for a test in personal finance which focuses on knowledge and application. Thus, the issue of cognitive level can be addressed for the BFT 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 BFT shows that there are about 14 knowledge or comprehension items (3, 5, 7, 8, 19, 23, 25, 28, 29, 30, 31, 32, 33, and 35) and 21 application items. Thus about 40 percent of items are knowledge or comprehension and 60 percent are application.

### **3. USES OF THE TEST**

#### **To Measure Student Understanding**

The BFT was designed primarily for assessing and improving the quality of upper elementary or lower middle school teaching of personal finance. There are several ways to use it for this objective.

#### **AS A PRETEST**

The BFT 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 elementary school and middle school teachers because some school districts provide some instruction in personal finance in earlier grade levels. 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 read those rationales before deciding whether the particular concept tested deserves greater attention in the classroom. If still in doubt, 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 BFT 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 BFT 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 BFT 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 and in relation to the results in this manual.

**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 about the particular concept or topic.

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 BFT 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 BFT 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 BFT was designed for elementary school and middle school teachers or administrators to use with students studying personal finance. The decision, however, about whether the BFT should be used to measure achievement in personal finance should be based on a careful review of the BFT test items and instructional content to make sure the test fits the content on personal finance that is taught in a unit on personal finance in an upper elementary or lower middle school classroom.

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 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. Students should be seated so as to minimize opportunities to see 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. They should make sure that every student has access to a working computer or terminal. It also is helpful to talk with an instructional technology specialist at a school about the optimal computer use, preparing students for testing, and monitoring progress. Arrangements should be made to have students take the test through the CEE's Online Assessment Center (OAC) at: [www.councilforeconed.org/resource/online-assessment-center/](http://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 recently studied personal finance in the classroom, but most have learned something about the subject at some point in school, 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 35 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 BFT requires about 35 minutes of testing time for upper elementary or lower middle school students, depending on group ability. If testing is done in a period that is shorter than 35 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 BFT 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 35 minutes. For schools without set class periods with time limits, there will sufficient time to take the test. If there are class periods with time limits, most of them are set at 40 minutes, so 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 BFT is the number of correct responses. The maximum possible score is 35. 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. Scan each answer sheet to make certain the student marked only one answer for each question; if more than one answer 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 BFT was administered to a sample composed primarily of upper elementary and middle school students. 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 at their 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 ended by the middle of February 2016. Most of these students had received instruction in personal finance either during the school year or in a prior year. No claim is made that this small 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 294 students who took the test. The data were collected from classes taught by teachers in the ten schools listed in Appendix 2.

**TABLE 2. Aggregate Statistics for the Student Sample Taking the BFT**

<b>Sample Size</b> ( <i>number of students</i> )	294
<b>Reliability</b>	
Coefficient alpha	.90
Standard error of measurement	2.59
<b>Scores</b> ( <i>35 test items</i> )	
Mean	17.82
Standard Deviation	8.10

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 in instruction. Rather, these results provide a relative standard that can aid teachers in comparing their students with other students who took the test. The comparisons will be meaningful only to the extent that 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 sample of fifth- and sixth-grade students taking the BFT. 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.

Percentile ranks allow a test user to compare how his or her class, or an individual student, performed relative to this sample of students across these five states. For example, a student who obtains a raw score of 20 on the BFT has a percentile rank of 62 among a sample of fifth- and sixth-grade students, most of whom received some form of personal finance instruction. Therefore, a student with a raw score of 20 is performing as well as, or better than, 62 percent of these students.

**TABLE 3: Percentiles for BFT Scores**

Raw Score	Percentile
35	99
34	97
33	94
32	92
31	92
30	91
29	90
28	86
27	85
26	83
25	79
24	76
23	73
22	70
21	67
20	62
19	60
18	56
17	54
16	51
15	46
14	43
13	40
12	35
11	28
10	19
9	14
8	11
7	6
6	3
5	1
4	
3	
2	
1	

## Item Difficulty and Discrimination

Test administrators may want to know how their students performed on certain items. This information would be particularly 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. This percentage is an estimate of the difficulty of an item. This percentage can range from 0 to 100 percent. 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.

Each question on the BFT has four possible choices: one correct answer and three distractors. Pure chance would dictate an expected correct score of 25 percent on the test for those who had no knowledge of personal finance. If some students score below 25 percent on the test (or about 9 or less correct answers), their answer sheets in particular should be carefully checked for systematic errors in test marking, scoring, or test administration. However, if a group of students know nothing about personal finance, probability will dictate that some students will earn scores of 9 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.

**TABLE 4. Item Discrimination and Percentage of Correct Responses: BFT**

Item	Correct Answer	Corrected Item-Total Correlation	Percent Correct
1	B	.42	74
2	C	.44	57
3	D	.45	25
4	D	.52	44
5	B	.24	49
6	A	.52	54
7	B	.50	55
8	A	.42	60
9	B	.37	62
10	C	.41	64
11	A	.30	50
12	D	.61	56
13	C	.27	40
14	C	.22	57
15	D	.49	56
16	D	.39	29
17	A	.43	62
18	B	.36	42
19	C	.37	64
20	C	.32	37
21	B	.44	64
22	A	.33	45
23	D	.42	31
24	C	.35	52
25	C	.46	53
26	A	.50	56
27	B	.43	42
28	B	.46	38
29	D	.52	42
30	A	.45	53
31	A	.58	54
32	B	.41	50
33	D	.51	45
34	D	.60	55
35	C	.36	65

The correlation 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 question regardless of whether they had personal finance instruction.

### Item Responses

Table 5 shows the percentages of students who selected one of the four options for each BFT item, with the correct response percentage in bold face and with an asterisk. Analysis of item responses can be useful. 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.

### Reliability

The reliability of a test is the degree of consistency with which a test measures student performance. 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 practice in taking the test or guessing) cause changes in student performance from day to day. As a result, we can never measure a student's performance or achievement perfectly (that is, obtain a student's "true" score).

**TABLE 5. Percentage Response to Each Alternative: BFT**

Item	A	B	C	D
1	10	<b>74*</b>	11	5
2	19	15	<b>57*</b>	9
3	38	13	25	<b>25*</b>
4	18	21	18	<b>44*</b>
5	20	<b>49*</b>	17	13
6	<b>54*</b>	17	13	16
7	16	<b>55*</b>	15	14
8	<b>60*</b>	20	11	10
9	12	<b>62*</b>	15	12
10	13	15	<b>64*</b>	8
11	<b>50*</b>	20	24	6
12	15	19	10	<b>56*</b>
13	24	15	<b>40*</b>	21
14	10	23	<b>57*</b>	10
15	10	8	27	<b>57*</b>
16	16	37	17	<b>29*</b>
17	<b>62*</b>	18	17	3
18	17	<b>42*</b>	28	14
19	14	16	<b>64*</b>	6
20	28	25	<b>38*</b>	11
21	19	<b>64*</b>	13	4
22	<b>45*</b>	31	17	7
23	20	20	29	<b>31*</b>
24	27	17	<b>52*</b>	5
25	25	15	<b>53*</b>	6
26	<b>56*</b>	14	17	14
27	28	<b>42*</b>	18	13
28	33	<b>38*</b>	19	10
29	13	28	18	<b>42*</b>
30	<b>53*</b>	13	19	14
31	<b>54*</b>	16	15	15
32	20	<b>50*</b>	15	16
33	19	16	20	<b>45*</b>
34	12	14	19	<b>55*</b>
35	8	14	<b>65*</b>	12

Note: \*Correct answer

**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 2.59 indicates about 67 percent certainty that a person’s “true” score lies in a range from 21.41 to 26.59 (24 +/- 2.59), or that we can be 95 percent certain that the “true” score lies in a range from 18.82 to 29.18 [24 +/- (2 × 2.59)]. 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).

**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 0.90 for the BFT indicates that there is good internal consistency among items.

Finally, it should be stressed that the reliability of the BFT 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.

## Conclusion

One of the most important validity questions for an educational achievement test such as the BFT is whether or not it measures what *ought* to be measured. The work to provide evidence of the *content validity* of the BFT was described in Sections 1 and 2 of this manual. In brief, the specification of the personal finance content that should be included on this test was explained in the *FL Standards* (CEE 2013). The fourth grade benchmarks served as the guide for the development and selection of test questions. The results of this work are shown in Table 1. In addition, the item rationales in the next section give an explanation for the correct answer for each test item based on the personal finance content in the *FL Standards*.

The process used for test development also ensured that the items on the BFT would contain valid content. Item construction 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 students. The content of all items also was checked by NAC members before they were included on the test.

A standardized test such as the BFT, therefore, 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) in the upper elementary and lower middle school grades. The sample data indicate that the BFT 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 BFT as a measure of achievement in personal finance has many advantages for elementary and middle school teachers and students.

## 6. ITEM RATIONALE: BASIC FINANCE TEST

ITEM	RATIONALE
<p>1. Abby is looking for a job. She is good at mathematics, but not as good at writing or creating things with her hands. Which of the following jobs might be best for her?</p> <p>A. author            B. accountant*            C. pastry chef            D. house painter</p>	<p>Different jobs require different skills. Abby is good at mathematics, which is a skill required for being an accountant. Because she is not as good at writing, she is not likely suited to be an author. Because she is not as good at creating things with her hands, she is not likely suited to be a pastry chef or house painter. [1/4/1] [Code for bracket item: Standard/Grade Level/Benchmark (CEE, 2013)]</p>
<p>2. Josh works as a dog walker for a veterinarian who boards dogs. Ella volunteers at a pet shelter. Natalie cuts hair at a local salon. Larry attends classes on computers. Which two individuals are earning income?</p> <p>A. Ella and Josh            B. Ella and Larry            C. Natalie and Josh*            D. Natalie and Larry</p>	<p>Most income is earned by people when they are employed to work. Natalie and Josh are both paid to do work cutting hair and walking dogs, respectively. Ella volunteers, which means she works without pay, and Larry is not working for an income by attending classes on computers. [1/4/2]</p>
<p>3. Dylan works at a skateboard shop and is paid \$10 for each skateboard he sells. What is this \$10 called?</p> <p>A. interest            B. premium            C. investment            D. commission*</p>	<p>A commission is a form of income for work, like a wage or salary. A commission, though, is an amount paid to a worker for each sale the worker makes, which describes Dylan’s \$10 earned per skateboard sold. The other options are incorrect. Interest is a form of income earned by loaning money. Premium and investment are financial terms, but not forms of income. [1/4/3]</p>
<p>4. Gina lends a friend \$100. A year later her friend repays her \$100 plus \$5 for the use of her \$100 for the year. The extra \$5 is</p> <p>A. wage income.            B. rental income.            C. savings income.            D. interest income.*</p>	<p>There are many ways people earn income. Each option is a form of income, but only interest income describes the \$100 Gina receives for loaning her friend money. [1/4/4]</p>
<p>5. Piper rents her cabin on a lake to a family each summer for \$5,000. The money Piper receives from the family is</p> <p>A. saving            B. income*            C. interest            D. investment</p>	<p>People earn income from ways other than just working. When Piper rents her cabin, the \$5,000 she receives is income. Renting the cabin creates rental income, not interest or investment income. Saving is the amount of income not used for expenses, and is set aside for future use. [1/4/5]</p>

ITEM	RATIONALE
<p>6. <i>Suppose Cindy's Cake Company received \$400 in revenue selling cakes this week and paid \$250 in costs. How much profit did Cindy's Cake Company earn this week?</i></p> <p>A. \$150 *            B. \$250            C. \$400            D. \$650</p>	<p>Profit earned by a business is the amount of money left over after costs are subtracted from revenue. To calculate Cindy's Cake Company's profit, the \$250 in costs is subtracted from the \$400 revenue, leaving it with a profit of \$150. [1/4/6]</p>
<p>7. <i>Juan started his own business. What will his business earn if it is successful?</i></p> <p>A. <i>bonus</i>            B. <i>profit*</i>            C. <i>wages</i>            D. <i>interest</i></p>	<p>Entrepreneurs are people who start businesses. A profit is the money left over when business costs are subtracted from revenue, and it becomes the income of the entrepreneur if the business is successful. Bonuses, wages and interest can all be income, but only profit is what Juan's business will earn if successful. [1/4/7]</p>
<p>8. <i>Lacy receives \$40 from her grandmother that she can use as she would like. What is the \$40 called?</i></p> <p>A. <i>a gift*</i>            B. <i>a loan</i>            C. <i>savings</i>            D. <i>spending</i></p>	<p>The \$40 Lacy receives from her grandmother is a gift, or something received without requiring anything in return. A financial gift is a form of income. The \$40 does not need to be paid back, so it is not a loan. Savings is the amount of income accumulated over time not used to buy something or pay taxes, and spending uses money to make purchases. [1/4/8]</p>
<p>9. <i>Brody got a job at a fitness center. He thought his first paycheck would be \$200 for working 20 hours at \$10 an hour. Instead, the paycheck was for \$180. Which was most likely taken from his paycheck?</i></p> <p>A. <i>profit</i>            B. <i>taxes*</i>            C. <i>interest</i>            D. <i>dividends</i></p>	<p>Income earned from working, as well as most other types of income, is taxed. When Brody works for his employer, the fitness center, he receives a paycheck for less than the full amount earned because of taxes. In this case the amount of \$20 is withdrawn from the \$200 leaving Brody with a take-home pay of \$180. Profit, interest and dividends are forms of income and would not reduce Brody's paycheck. [1/4/9]</p>
<p>10. <i>Sheila wanted to buy her mother a present for her birthday, so she bought her a bracelet. What did she do to satisfy her want?</i></p> <p>A. <i>paid for leisure</i>            B. <i>paid for a resource</i>            C. <i>purchased a good*</i>            D. <i>purchased a service</i></p>	<p>When Sheila buys a bracelet, she does so because she wants to give a present to her mother for her birthday. This is an example of how an economic want can be satisfied. Because the bracelet is a good, the want was not satisfied by paying for leisure, a resource or a service. [2/4/1]</p>
<p>11. <i>What must people do when they want many goods and services but do not have the income to buy them all?</i></p> <p>A. <i>decide which ones are most important to buy*</i>            B. <i>borrow money from the government to buy them</i>            C. <i>pay for the least expensive goods or services first</i>            D. <i>pay for the most expensive goods or services first</i></p>	<p>People can't have everything they want, so they must prioritize by deciding which goods and services are most important to buy. [2/4/2]</p>

ITEM	RATIONALE
<p>12. <i>Lucy uses some of her savings to buy a soccer ball. Which of the following is the likely reason she made this choice?</i></p> <p>A. <i>to increase her income</i>            B. <i>to increase her savings</i>            C. <i>to increase her popularity</i>            D. <i>to increase her happiness</i> *</p>	<p>Lucy's action reveals that she expects to be better off, or happier, after purchasing the soccer ball. Otherwise she would not have made the purchase. Buying the soccer ball will not increase her income or savings, and she is not likely to buy the soccer ball to increase her popularity. [2/4/3]</p>
<p>13. <i>Marcus is shopping for clothes. He has money to buy a pair of pants or a jacket. If he decides to buy the pants, the jacket is his</i></p> <p>A. <i>choice.</i>            B. <i>benefit.</i>            C. <i>opportunity cost.</i> *            D. <i>personal expense.</i></p>	<p>Opportunity cost is the value of the best forgone alternative when making a choice. Because Marcus only has enough money to buy either the pants or jacket and buys the pants, the jacket becomes the best forgone alternative. The other options are not correct. The choice is the decision regarding which item to purchase. Marcus receives a benefit from buying the pants, and the money spent on the pants is a personal expense. [2/4/4]</p>
<p>14. <i>Ivan has saved money to buy a new pair of sunglasses. He narrowed his choices to three pairs and they all cost the same. Which of the following would be an informed decision?</i></p> <p>A. <i>Ivan buys the sunglasses that his friends are wearing.</i>            B. <i>Ivan buys the sunglasses that the store has the most of for sale.</i>            C. <i>Ivan buys the sunglasses that give him more benefit than the other two pairs.</i> *            D. <i>Ivan buys the sunglasses shown in an ad saying people are much happier after buying them.</i></p>	<p>An informed decision for a buyer is one in which the buyer weighs the costs and benefits of alternatives. Ivan will be best off if he buys the sunglasses that give him the most benefit if the prices of all alternatives are the same. No other option would be considered a reason Ivan makes an informed decision. [2/4/5]</p>
<p>15. <i>Mariah is going shopping for school items. Her mother reminds her she must stay within her \$200 budget. Which of the following will best help Mariah follow her mother's advice?</i></p> <p>A. <i>Do her shopping with friends and buy what they like to buy</i>            B. <i>Purchase name brand items that are shown in advertisements</i>            C. <i>Save money by buying items on sale even if she doesn't want them</i>            D. <i>Make a list of items she wants and how much she will spend on each</i> *</p>	<p>Spending within a budget requires making choices that are influenced by, among other things, prices. If Mariah makes a list of the school items and the prices of each, she will be able to know what to buy to stay within her \$200 budget. None of the other options will help Mariah stay within her budget. [2/4/6]</p>
<p>16. <i>To live within her means, Bella creates a budget. What are the two main things she keeps track of in her budget?</i></p> <p>A. <i>wants and assets</i>            B. <i>costs and benefits</i>            C. <i>loans and payments</i>            D. <i>income and expenses</i> *</p>	<p>A budget is a plan for managing income and expenses. It helps people focus on what can be purchased with a given amount of income and saving, or the amount of income not used for expenses and set aside for later use. [2/4/7]</p>

ITEM	RATIONALE
<p>17. Connor has an income of \$200 a month from working after school at a part-time job. He spends \$150 a month and puts \$50 in his bank account. When Connor deposits the \$50 in his bank account he is</p> <p>A. saving.*  B. investing.  C. financing.  D. borrowing.</p>	<p>The \$50 difference between Connor’s income and spending is called saving when it is deposited in an account at a bank. If the \$50 were used to purchase a financial asset with greater risk and potential reward, it would be considered investing. Financing and borrowing are also financial concepts but these terms do not apply to Connor’s \$50. [3/4/1]</p>
<p>18. Sophie decides to save the money she received for her birthday. What is Sophie’s opportunity cost of saving instead of spending?</p> <p>A. less interest on savings  B. less money to spend now*  C. increased risk of losing savings  D. higher taxes in the current year</p>	<p>Opportunity cost is the value of the best forgone alternative when making a choice. Sophie gives up the opportunity to spend money now when she decides to save for her birthday, so spending money now is her opportunity cost. [3/4/2]</p>
<p>19. A major purpose of banks and credit unions is to serve as places to</p> <p>A. sell stock.  B. pay taxes.  C. save money.*  D. spend money.</p>	<p>Saving is putting money aside for later use. A major purpose of banks and credit unions is to provide an accessible and safe place to hold money saved. Banks are not used by people to sell stocks or pay taxes. Although people must spend money for services banks provide, a major purpose of banks is not to provide a place to spend money. [3/4/3]</p>
<p>20. Ariana set a goal to save \$10 each month from her allowance to buy a new bike. The new bike is</p> <p>A. a financial investment.  B. a deposit into her savings.  C. an incentive for her to save.*  D. an alternative to her spending.</p>	<p>The goal of buying and owning a new bike provides an incentive for Ariana to save \$10 a month from her allowance. Goals such as this provide people with incentives to save. The new bike is not considered a financial investment since it is not expected to provide a financial return, nor is the new bike a deposit into savings. The \$10 Ariana saves, not the new bike, is an alternative to spending. [3/4/4]</p>
<p>21. Gina wants to save \$40 to buy her dad a book for his birthday. Each week she earns \$20 and spends \$15 of it. How many weeks will she need to save to buy the book?</p> <p>A. 6 weeks  B. 8 weeks*  C. 10 weeks  D. 12 weeks</p>	<p>Gina needs a savings plan to reach her savings goal of \$40. Her savings plan must include reaching her goal by her dad’s birthday, so she will need to know the number of weeks as well as the amount to be saved per month. If she saves \$5 a week, she will need 8 weeks (<math>8 \times \\$40</math>) to save \$40. [3/4/5]</p>
<p>22. Which of the following best explains the relationship between the interest rate and the amount people decide to save?</p> <p>A. as the interest rate rises, people save more*  B. as the interest rate falls, people save more  C. as the interest rate falls, people save the same amount  D. as the interest rate rises, people save the same amount</p>	<p>The reward for saving money in deposits in financial institutions like banks and credit unions is the interest earned on the money. As the interest rate rises, people earn more interest on their savings and receive a greater reward for saving. This creates an incentive to save more. [3/4/6]</p>

ITEM	RATIONALE
<p>23. <i>Interest is the amount of money a person pays to</i></p> <p>A. <i>lend money.</i></p> <p>B. <i>save money.</i></p> <p>C. <i>invest money.</i></p> <p>D. <i>borrow money.*</i></p>	<p>A borrower pays a lender a fee, called interest, to borrow money. Each of the other options are ways people can earn interest. [4/4/1]</p>
<p>24. <i>Austin borrows \$1,000 from a bank. He wants to pay the bank back in full next month. Which of the following is he likely to pay?</i></p> <p>A. <i>the amount of the loan</i></p> <p>B. <i>the interest on the loan</i></p> <p>C. <i>\$1,000 plus the interest on the loan*</i></p> <p>D. <i>\$1,000 minus the interest on the loan</i></p>	<p>When a person borrows money, both the amount borrowed, the principal, and a fee for use of the lender's money, called interest, must eventually be paid back to the lender. [4/4/1]</p>
<p>25. <i>The main advantage of using a credit card is so a person can</i></p> <p>A. <i>increase saving.</i></p> <p>B. <i>decrease spending.</i></p> <p>C. <i>buy now and pay for it later.*</i></p> <p>D. <i>buy low and sell it at a higher price.</i></p>	<p>When a buyer makes a purchase with the use of a credit card, the buyer is paying for the purchase with a loan from the financial institution that issued the credit card. As with all loans, the amount borrowed must be paid back later. Using a credit card is more likely to decrease, not increase, saving, and increase, not decrease, spending. Credit cards are not typically used to purchase financial assets at low prices to sell them at high prices. [4/4/2]</p>
<p>26. <i>The price of a house is many times higher than most people's income. Which of the following allows many families who do not have enough savings to buy a house?</i></p> <p>A. <i>taking out a loan from a bank *</i></p> <p>B. <i>selling their cars to an auto dealer</i></p> <p>C. <i>investing their savings in the stock market</i></p> <p>D. <i>promising a percentage of their income to the house seller</i></p>	<p>An advantage of using credit, or taking out a loan, is that it provides people with the ability to purchase durable goods such as houses that are too expensive to purchase out of most people's income and savings, and use them for a long period of time. None of the other options realistically allow people to purchase houses. [4/4/3]</p>
<p>27. <i>A bank will charge more interest on a loan to someone who has</i></p> <p>A. <i>earned a high income that year.</i></p> <p>B. <i>failed to pay past loans on time.*</i></p> <p>C. <i>been one of the bank's customers for a long time.</i></p> <p>D. <i>borrowed a lot of money but paid it back on time.</i></p>	<p>Lenders are less likely to lend, or will charge a higher fee, called interest, to potential borrowers who have failed to pay back past loans on time. A history of not paying back loans on time signals more risk and higher future costs to the lender, so the lender will require a higher fee to cover these potential costs. [4/4/4]</p>
<p>28. <i>Jesse is making a financial investment when she</i></p> <p>A. <i>opens a checking account.</i></p> <p>B. <i>purchases shares of stock.*</i></p> <p>C. <i>applies for a new credit card.</i></p> <p>D. <i>buys a new appliance for home.</i></p>	<p>A financial investment requires the purchase of a financial asset with the expectation that this purchase will provide a financial return from either an increase in value or an increase in future income. Of the four options, only a purchase of a share of stock fits this definition. A person might save money in a new checking account, but this would not be considered an investment. Applying for a credit card and buying a new appliance are not financial investments. [5/4/1]</p>

ITEM	RATIONALE
<p>29. <i>The major reason people make a financial investment is because they expect an increase in its</i></p> <p>A. <i>risk.</i>            B. <i>cost.</i>            C. <i>taxes.</i>            D. <i>value.*</i></p>	<p>If an investor purchases a share of stock and the price of the stock significantly increases in value, the investor receives a high rate of return on the financial investment. The expectation of this increase in value is a major reason people make financial investments. People do not make financial investments with the expectation of increasing risk, costs or taxes. [5/4/1]</p>
<p>30. <i>A stockholder is an individual who</i></p> <p>A. <i>owns a portion of a business.*</i>            B. <i>borrow money from a bank.</i>            C. <i>provides loans to businesses.</i>            D. <i>manages the money of workers.</i></p>	<p>A share of stock represents ownership of a share in the corporation (a type of business) that issued the stock. People who own stocks are called stockholders. The other options do not define a stockholder. [5/4/2]</p>
<p>31. <i>When Madison keeps all her money in a box at home instead of putting it in a bank account she is</i></p> <p>A. <i>taking a risk.*</i>            B. <i>getting credit.</i>            C. <i>earning interest.</i>            D. <i>making an investment.</i></p>	<p>Banks are considered a very safe place to keep money. Relative to this safety, there are many ways Madison might lose some or all of her money if she keeps it all in a box at home. This potential for loss is called risk. She is not lending her money out, so it would not be considered credit nor earning interest. The box is not creating a return on her money, so it is not an investment. [6/4/1]</p>
<p>32. <i>Dominic pays an annual fee to a company. In exchange, the company agrees to pay for a future loss he might have that he didn't expect. What type of agreement is this?</i></p> <p>A. <i>mortgage</i>            B. <i>insurance*</i>            C. <i>investment</i>            D. <i>mutual fund</i></p>	<p>Insurance is an arrangement where risk, or the chance of loss or harm, is transferred from the buyer to a third party for a fee. Dominic's exchange with the company would be considered an insurance agreement. A mortgage is an agreement used to purchase a house on credit. An investment requires an expectation of an increase in an asset's value or an increase in income received from the financial asset. A mutual fund is a financial asset that pools investors' money into a portfolio of stocks, bonds or similar assets. [6/4/1]</p>
<p>33. <i>One of the unavoidable parts of daily life for people is</i></p> <p>A. <i>driving a car</i>            B. <i>buying clothing</i>            C. <i>a visit to a bank</i>            D. <i>a risk of an accident*</i></p>	<p>Risk is the chance of loss or harm. Regardless of people's actions, it is an unavoidable part of life. Even though most people drive a car, buy clothing and visit banks, these activities are avoidable. [6/4/2]</p>
<p>34. <i>Zach rides his bike and always wears a bike helmet. Blake rides his bike and does not wear a bike helmet. Which of the following is true about the risk of a head injury?</i></p> <p>A. <i>Zach and Blake both accept the risk.</i>            B. <i>Zach and Blake both reduce the risk.</i>            C. <i>Zach accepts the risk and Blake reduces the risk.</i>            D. <i>Zach reduces the risk and Blake accepts the risk.*</i></p>	<p>People can take actions that can increase, decrease or simply accept the risk associated with an activity. The harm that can be caused by a bicycle accident can be reduced by wearing a helmet, so Zach's action reduces risk while Blake's accepts it. [6/4/3]</p>

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ITEM	RATIONALE
<p>35. <i>The expression “saving for a rainy day” means that one reason people save is to have money</i></p> <ul style="list-style-type: none"><li>A. <i>in case there is a drought.</i></li><li>B. <i>to pay taxes to government.</i></li><li>C. <i>in case an emergency happens.*</i></li><li>D. <i>to buy something they want in the future.</i></li></ul>	<p>One way people can reduce the risk of not having the ability to pay for future emergencies is to keep money in savings to be used exclusively for this purpose. This is referred to as “saving for a rainy day.” [6/4/4]</p>

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## **Appendix 1. Personnel for the BFT Development**

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### **Project Director**

William B. Walstad, *University of Nebraska-Lincoln*

### **Associate Project Director**

Ken Rebeck, *St. Cloud State University (Minnesota)*

### **Council Officer**

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

### **National Advisory Committee**

William Bosshardt, *Florida Atlantic University*

Elizabeth Breitbach, *University of South Carolina*

Brenda Cude, *University of Georgia*

Andrew Hill, *Federal Reserve Bank of Philadelphia*

Bonnie Meszaros, *University of Delaware*

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## **Appendix 2. Schools Participating in BFT Testing**

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### **CALIFORNIA**

*Acacia Elementary School  
Fullerton 92831*

*Kensington Elementary School  
Kensington 94708*

*Robert Down Elementary School  
Pacific Grove 93950*

*Von Renner Elementary School  
Newman 95360*

### **ILLINOIS**

*Areil Elementary Community Academy  
Chicago 60653*

*Broadmoor Junior High School  
Pekin 61554*

*George B. Armstrong School of International Studies  
Chicago 60645*

### **MARYLAND**

*Deer Park Elementary School  
Owings Mills 21117*

### **NORTH CAROLINA**

*Angier Elementary School  
Angier 27501*

### **OKLAHOMA**

*Dove Science Academy  
Tulsa 74112*

**Appendix 3. Answer Form and Scoring Key, BFT**

**Answer Form**

<b>1</b>	A B C D ○ ○ ○ ○	<b>11</b>	A B C D ○ ○ ○ ○	<b>21</b>	A B C D ○ ○ ○ ○	<b>31</b>	A B C D ○ ○ ○ ○
<b>2</b>	A B C D ○ ○ ○ ○	<b>12</b>	A B C D ○ ○ ○ ○	<b>22</b>	A B C D ○ ○ ○ ○	<b>32</b>	A B C D ○ ○ ○ ○
<b>3</b>	A B C D ○ ○ ○ ○	<b>13</b>	A B C D ○ ○ ○ ○	<b>23</b>	A B C D ○ ○ ○ ○	<b>33</b>	A B C D ○ ○ ○ ○
<b>4</b>	A B C D ○ ○ ○ ○	<b>14</b>	A B C D ○ ○ ○ ○	<b>24</b>	A B C D ○ ○ ○ ○	<b>34</b>	A B C D ○ ○ ○ ○
<b>5</b>	A B C D ○ ○ ○ ○	<b>15</b>	A B C D ○ ○ ○ ○	<b>25</b>	A B C D ○ ○ ○ ○	<b>35</b>	A B C D ○ ○ ○ ○
<b>6</b>	A B C D ○ ○ ○ ○	<b>16</b>	A B C D ○ ○ ○ ○	<b>26</b>	A B C D ○ ○ ○ ○		
<b>7</b>	A B C D ○ ○ ○ ○	<b>17</b>	A B C D ○ ○ ○ ○	<b>27</b>	A B C D ○ ○ ○ ○		
<b>8</b>	A B C D ○ ○ ○ ○	<b>18</b>	A B C D ○ ○ ○ ○	<b>28</b>	A B C D ○ ○ ○ ○		
<b>9</b>	A B C D ○ ○ ○ ○	<b>19</b>	A B C D ○ ○ ○ ○	<b>29</b>	A B C D ○ ○ ○ ○		
<b>10</b>	A B C D ○ ○ ○ ○	<b>20</b>	A B C D ○ ○ ○ ○	<b>30</b>	A B C D ○ ○ ○ ○		

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, BFT (Continued)**

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**Scoring Key**

1	A	B	C	D	11	A	B	C	D	21	A	B	C	D	31	A	B	C	D
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2	A	B	C	D	12	A	B	C	D	22	A	B	C	D	32	A	B	C	D
	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	A	B	C	D	13	A	B	C	D	23	A	B	C	D	33	A	B	C	D
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
4	A	B	C	D	14	A	B	C	D	24	A	B	C	D	34	A	B	C	D
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
5	A	B	C	D	15	A	B	C	D	25	A	B	C	D	35	A	B	C	D
	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
6	A	B	C	D	16	A	B	C	D	26	A	B	C	D					
	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
7	A	B	C	D	17	A	B	C	D	27	A	B	C	D					
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8	A	B	C	D	18	A	B	C	D	28	A	B	C	D					
	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>					
9	A	B	C	D	19	A	B	C	D	29	A	B	C	D					
	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>					
10	A	B	C	D	20	A	B	C	D	30	A	B	C	D					
	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					