

Financial Fitness for Life

MIDDLE SCHOOL TEST EXAMINER'S MANUAL

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National Council on Economic Education

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FOREWORD

The National Council on Economic Education (NCEE) is deeply committed to providing the highest quality products for teachers to use in their classrooms to help them give their students the economic tools and skills that are required for every student. Providing teachers with up-to-date assessments are part of the total package. This Examiner's Manual for the *Financial Fitness for Life: Middle School Test* provides the test administrator with information on giving the test to students and provides the teacher with information to compare his/her students' performance with that of similar students across the nation.

NCEE is truly indebted to many individuals who shared their multitude of talent and precious time to review, revise, and correlate the questions in the *Financial Fitness for Life: Middle School Test* to the Personal Finance and Economics Standards. Special thanks go to William Walstad and Ken Rebeck for undertaking and managing this work. Other members of the National Advisory Committee (acknowledged by name and institution on pp. 1-2 and in Appendix 1) prepared and reviewed questions in their various stages of development and assisted with the field testing of items.

In all and through all, NCEE gratefully acknowledges the generous funding and magnanimous support of the Bank of America Foundation for making this accomplishment possible.

Robert F. Duvall, Ph.D.
President and Chief Executive Officer
National Council on Economic Education (NCEE)

FINANCIAL FITNESS FOR LIFE: MIDDLE SCHOOL TEST EXAMINER'S MANUAL

The *Financial Fitness for Life: Middle School Test* (FFFL-MS Test) is a standardized test for measuring the achievement of middle school students in courses that use the *Financial Fitness for Life* curriculum materials and in other courses that emphasize instruction in personal finance. The test should be a valuable tool for assessing what middle school students know about the basics of personal finance and related concepts in economics and business education.

The purposes of this *Financial Fitness for Life: Middle School Test Examiner's Manual* are threefold. First, it provides test users with a detailed description of the personal finance and economics content on the test so they are fully informed about test coverage and rationale for each item. Second, it explains how the test should be administered to students and also discusses the possible uses of the test for assessment and instruction. Third, it presents statistical evidence documenting the reliability and validity of the test as an achievement measure of middle school personal finance. The manual should provide test users with the information they need to administer the test and interpret the results.

1. TEST DEVELOPMENT

In 2001, the National Council on Economic Education (NCEE) published a *Financial Fitness for Life: Teacher Guide* and also the *Financial Fitness for Life: Student Workouts* for grades 6–8 (Flowers and Gallaher, 2001). These materials contained 17 lessons on topics in personal finance that were organized around five major themes. At the time of publication, no standardized test was available to assess student knowledge and understanding of the personal finance and economics content presented in these instructional materials. The NCEE decided to complete this curriculum package by developing such a test in the fall 2002, after securing the necessary funding from the Bank of America Foundation.

The work on the FFFL-MS Test began in late fall 2002 and continued through the fall of 2004. The first part of this work was the preparation of the FFFL-MS Test by the test developers and a national committee. The second part of the work was the trial administration of test items and the creation of the final version of the new test.

National Advisory Committee. In late fall 2002, a National Advisory Committee (NAC) was formed for all FFFL tests (high school, middle school and upper elementary). The NAC was composed of 12 members with expertise in teaching personal finance, teacher training in personal finance, and in the development of national tests (see Appendix 1 for a list of the NAC members).

On the NAC were five teachers who had experience with using the FFFL materials and also with teaching personal finance to students at different grade levels: Charles Collier (Harmony Elementary School, Bellingham, Washington); Karen Pappas (Fruit Cove Middle School, Jacksonville, Florida); Debbie Poole (Fernway Elementary School, Orland Park, Illinois); Jeffrey Redmon (Kinlock Park Middle School, Miami, Florida); and Kathleen Simmons (Canyon High School, Comal I.S.D., New Braunfels, Texas).

Also on the NAC were four representatives from the NCEE's affiliated centers and state councils for economic education. Each of these individuals had extensive experience with FFFL materials either by serving as authors of FFFL teacher guides or student workouts or by conducting teacher workshops on FFFL materials. They included: John Clow, center director at the Leatherstocking Center for Economic Education, State University of New York at Oneonta; Barbara Emery, program coordinator at the Center for Economic Education and Entrepreneurship, University of Delaware; Sarapage McCorkle, who at the time this work began was the director of the Center for Entrepreneurship and Economic Education at the University of Missouri at St.

Louis (and now with Junior Achievement, St. Louis); and Amy Willis, director of the Arizona Council on Economic Education and previously a high school teacher in Arizona.

Three other individuals completed the NAC. Each had participated in the development of national tests in economics. William Walstad, a professor of economics at the University of Nebraska-Lincoln, directed this FFFL testing project and served as NAC chair. His past test experience includes the preparation of the NCEE's *Test of Economic Literacy* (high school), *Test of Economic Knowledge* (middle school), and the *Basic Economics Test* (upper elementary). The other test developer serving on the NAC was Ken Rebeck, Assistant Professor of Economics at St. Cloud State University. He had worked with William Walstad on the development of the third edition of the *Test of Economic Literacy* (2001) and had also conducted FFFL workshops for teachers through the Minnesota Council on Economic Education. The NCEE representative on the NAC was Claire Melican, NCEE Vice President for Program Administration. She previously worked at the Educational Testing Service where she directed the development and yearly administration of the Advanced Placement Tests in Economics.

The meeting of the NAC was held in mid-January, 2003, in Orlando, Florida. Several decisions were made prior to or at that meeting that would affect the shape and content of the new test. First, the test would be designed to assess student understanding of the middle school materials contained in the *Financial Fitness for Life* curricula as presented in the *Teacher Guide* and *Student Workouts* for grades 6–8. The content of questions would be primarily targeted to cover the objectives listed in the lessons for these materials (see Table 1 for a list of lessons and themes and Appendix 5 for a list of objectives).

Second, a multiple-choice format would be used for the test so it could more widely sample the extensive content found in the FFFL materials. This decision was important because it per-

mitted a sufficient number of test items to be evenly distributed across each of the five themes. This design would mean that the test user would have the flexibility to administer one or more theme subtests in case the full FFFL materials could not be covered in the available instructional time.

Third, the FFFL-MS Test was designed as an achievement test and not a speed test. A decision was made to limit the test to 50 questions so that it could be completed in the typical 40-minute time period. This period was well within the length of most class periods in middle schools and would allow ample time for teachers to make arrangement within a classroom for testing, present the instructions, and administer the test. The content for most questions would not be overly complex so that test items could be easily answered in less than a minute, on average. Also, in case the whole test could not be administered in a class period, students could be tested by FFFL theme.

Each NAC member was responsible for supplying 30 questions for review at the meeting based on assigned grade levels. The NAC then reviewed and rated the pool of about 150 middle school items using three categories: accept as is or with minor revision, needs major revision, or reject. Questions for revision were either revised at the meeting or suggestions were made for further revision by the two test developers. The NAC also rated the importance of each of the instructional objectives that were listed in the *FFFL Teacher Guide* for each lesson so the content of the test would best reflect what was considered important FFFL content to be tested. Assignments were also made for new questions to be written to fill content gaps by FFFL theme.

The outcome from this meeting was Draft I of the FFFL-MS Test. This draft contained all questions except those rejected by the NAC plus the new questions submitted by NAC members to fill content gaps that had been identified at the meeting. These questions were sorted by FFFL theme and objective to evaluate content coverage.

The two test developers then revised these questions to produce Draft II that contained a pool of 73 possible items. This revised set of questions was sent to the NAC members for review in early February, 2003. Enclosed with the mailing to the committee members was a description of how test items covered the content outlined in the *FFFL Teacher Guide*. The committee was asked to rate items by whether they approved of the use of an item if selected from the item pool, whether they thought an item should be revised but left in the pool, or whether an item should be dropped from the pool.

The test developers then prepared Draft III based on the item pool and a few more new test items that were submitted to fill content gaps. Draft III was a 50-item test with 10 items per theme. The test developers selected items for the draft from NAC-approved items, newly submitted items, or items they revised.

This draft was then sent to the NAC for further review in March, 2003. The NAC evaluated it for coverage of personal finance content based on FFFL themes. They also checked wording of questions for potential problems with reading or item bias, and assessed the suitability of the test items for middle school students. Minor revisions were then made to produce the field-test version (Draft IV) of the FFFL-MS Test.

Field-Testing. This version of the test was field-tested in April and May, 2003, with about 681 middle school students in Arizona, Florida and New York. The members of the NAC arranged this testing and provided feedback on any problems with test length or administration. NAC members Karen Pappas (Fruit Cove Middle School, Jacksonville, Florida) and Jeffrey Redmon (Kinloch Park Middle School, Miami, Florida) field-tested in their classes. Five other teachers were recruited to assist with this work, one from Arizona (Gale Glassy, Flagstaff Middle School, Flagstaff, AZ), two from Florida (Cathy Crowe, Fruit Cove Middle School, Jacksonville, FL and Ronald Redmon, Kinloch Park Middle

School, Miami, FL) and two from New York (Bonnie Jones and Therese Pentaris, both at Oneonta Middle School, Oneonta, NY). Comments received from teachers indicated that the test could be completed in a 40-minute class period.

The test developers then reviewed the test data from the field-testing. Items were retained for the test that showed reasonable difficulty levels and the ability to discriminate between students of greater or lesser understanding of personal finance. Items were also revised based on the content reviews of the test supplied by the NAC members. The results from the field-testing and subsequent revision produced the pretest and posttest version (Draft V) of the FFFL-MS Test.

Final Version. This version of the test was used for pre- and posttesting during the 2003–2004 school year. The student sample that participated in this testing was primarily from Texas. A decision was made to recruit Texas teachers who would be willing to attend a two-day training session in Houston on the use of the FFFL materials. These teachers would then return to their schools and teach the FFFL materials either during the fall 2003 semester or the spring 2004 semester and give the FFFL-MS Test as a pretest and posttest. These teachers also recruited a “control” teacher at each school who tested students who had not received FFFL instruction. A list of the FFFL teachers who participated in the testing is found in Appendix 2.

Section 6 reports the data results from that student testing. Although pretests were administered, these data were not used for the examiner’s manual because they were not considered to be reliable. Some teachers gave the pretest after instruction had begun and it was difficult to match pre- and posttest data in many cases. The results reported in this manual are based on posttest data gathered from 1060 middle school students during the fall 2003 and spring 2004 semesters.

After analyzing the posttest results and receiving final reviews from the NAC, a final version of the FFFL-MS Test was approved by the

test developers. The last section of the manual presents the 50 test items. As will be discussed in the next section, there was good coverage of the personal finance concepts to establish the content validity of the test. Other sections of this manual discuss results from the analysis of test validity and reliability. This information shows that the FFFL-MS Test is a valid and reliable measure of middle school student understanding of personal finance.

2. THE CONTENT AND STRUCTURE OF THE TEST

The content of the *Financial Fitness for Life: Middle School Test* is based on three documents. They served as the primary guides to content validity for the development of the FFFL-MS Test.

Content. The first document was the *FFFL Teacher Guide* (Flowers and Gallaher, 2001). The *FFFL Teacher Guide* provides a description and outline of what experts in personal finance and economics consider as core concepts and topics in personal finance that should be taught to middle school students. All lessons in this guide were written by content and pedagogy experts, field-tested by teachers, and reviewed by other experts.

As shown in Table 1, this publication contains 17 lessons are organized into five content themes:

- The Economic Way of Thinking
- Earning Income
- Saving
- Spending and Using Credit
- Money Management

Associated with each lesson are specific student objectives (see Appendix 5). The themes, lessons and student objectives served as a primary content guide for development of the FFFL-MS Test.

The FFFL-MS Test has 50 questions. The right side of Table 1 shows the distribution of the 50 items across the five themes and the 17 lessons. Each theme contains ten questions distrib-

uted across related lessons. Each theme represents 20 percent of the test. This distribution of test items suggests that the test is a measure of personal finance because it samples the content domain as described by the theme, lessons, and objectives in the *FFFL Teacher Guide*.

The second major document used to establish the content validity of the FFFL-MS Test is the *National Standards in Personal Finance* (Jump\$tart Coalition, 2002). It identifies what K–12 students should know and be able to do in personal finance. This publication contains 26 standards that are organized into four topics:

- Income
- Money Management
- Spending and Credit
- Saving and Investing

There are 3 income standards, 8 money management standards, 8 spending and credit standards, and 7 saving and investing standards.

The introductory material for the *FFFL Teacher Guide* for grades 6–8 shows that the lessons and content of this publication are highly correlated with *National Standards in Personal Finance*. Therefore, the content of the FFFL-MS Test should also be highly correlated with these personal finance standards. The right side of Table 2 shows the approximate distribution of FFFL-MS Test items across the 26 personal finance standards and four major topics. About 24 percent of the FFFL-MS Test items would meet the income standards, about 36 percent would meet the money management standards, 20 percent would meet spending and credit standards, and 20 percent would meet saving and investment standards. The results clearly show the FFFL-MS Test covers most of the national standards in personal finance as identified by content experts.

The third document used to establish the content validity of the FFFL-MS Test was the *Voluntary National Content Standards in Economics* (NCEE, 1997). The left side of Table 3 shows major economic concepts or topics related to each standard. A complete listing of the 20 standards statements can be found in Appendix 4.

TABLE 1. *Financial Fitness for Life Guide*: Content Coverage for FFFL-MS Test

Themes and Lessons	Items	Total	Percent
There is No Such Thing as a Free Lunch (<i>The Economic Way of Thinking</i>)		10	20.0
1. The Economic Way of Thinking	1, 2, 3, 4, 5, 6	6	
2. Consumer Decision Making	7, 8, 9, 10	4	
Education Pays Off: Learn Something (<i>Earning Income</i>)		10	20.0
3. Career Choice Making	11, 12, 13, 14	4	
4. Productivity	15, 16, 17, 18	4	
5. Why Stay in School?	19, 20	2	
Tomorrow's Money: Getting to the End of the Rainbow (<i>Saving</i>)		10	20.0
6. Why Save?	21	1	
7. Types of Savings Plans	22, 23	2	
8. Who Pays and Who Receives?	24, 25, 26	3	
9. Stocks and Mutual Funds	27, 28, 29	3	
10. Let Lenders and Borrowers Be			
11. Saving and Investing Are Risky Business	30	1	
Spending and Credit Are Serious Business (<i>Spending and Using Credit</i>)		10	20.0
12. Cash or Credit?	31, 32, 33, 34	4	
13. Establishing Credit	35, 36, 37, 38	4	
14. Comparison Shopping	39, 40	2	
Get a Plan: Get a Grip on Life (<i>Money Management</i>)		10	20.0
15. Managing Cash	41, 42, 43	3	
16. Choosing and Using a Checking Account	44, 45, 46, 47	4	
17. What Taxes Affect You?	48, 49, 50	3	
Total Number of Questions Percent of Total		50	100.0

TABLE 2. National Standards in Personal Finance: Content Coverage for FFFL-MS Test

Standard Selected Key Concepts*	Items	Total	Percent
A. INCOME		12	24.0
1. Sources of income			
2. Determinants of income	11, 12, 13, 14, 16, 17, 18, 19, 20	9	
3. Taxes and transfer payments	48, 49, 50	3	
B. MONEY MANAGEMENT		18	36.0
1. Limited resources and choice	1, 2	2	
2. Opportunity cost	3, 4	2	
3. Personal financial responsibility			
4. Financial decision making	5, 6, 7, 8, 9, 10	6	
5. Inflation and investing	33	1	
6. Insurance, risk management			
7. Budgeting	41, 42, 43	3	
8. Use of money management tools	44, 45, 46, 47	4	
C. SPENDING AND CREDIT		10	20.0
1. Benefits and cost of spending	40	1	
2. Information on products	15	1	
3. Costs and benefits of payment methods	31, 32, 34	3	
4. Risk and credit	35, 37	2	
5. Sources of credit			
6. Credit history and records	36, 38	2	
7. Managing financial difficulties			
8. Rights and responsibilities of buyers, sellers, and creditors	39	1	
D. SAVING AND INVESTING		10	20.0
1. Saving and investing	21	1	
2. Reasons for saving and investing	22, 24	2	
3. Risk, return and liquidity investment	29, 30	2	
4. Buy and sell investments	27, 28	2	
5. Rate of return on investments	23, 25, 26	3	
6. Sources of investment information			
7. Government and saving and investment			
Total Number of Questions	50	50	100.0

Note: *For a complete description of each standard, see Appendix 3 or Jump\$tart Coalition (2002).

TABLE 3. National Standards in Economics: Content Coverage for FFFL-MS Test

Standard Selected Key Concepts*	Items	Total
1. Scarcity, choice, productive resources	1, 2	2
2. Decision-making, marginal analysis	3, 4, 20, 21, 34	5
3. Economic systems & allocation mechanisms		
4. Economic incentives — prices, wages, profits, etc.	5, 6	2
5. Voluntary exchange & trade		
6. Specialization & comparative advantage		
7. Markets & price		
8. Supply & demand		
9. Competition		
10. Economic institutions		
11. Money & money supply		
12. Interest rates	24, 25, 26	3
13. Labor markets & income	11, 12	2
14. Entrepreneurship	13, 14	2
15. Physical & human capital investment	15, 16, 17, 18	4
16. Economic role of government		
17. Government failure, special interest groups	49, 50	2
18. Output, income, employment, & the price level		
19. Unemployment & inflation	19, 33	2
20. Fiscal & monetary policy		
Total Number of Questions		24

Note: *26 of the 50 items on the FFFL-MS Test (7, 8, 9, 10, 22, 23, 27, 28, 29, 30, 31, 32, and 35–48) focus on personal finance topics. For a complete description of each standard, see Appendix 4 or NCEE (1997).

The FFFL materials include some economics content because that content serves as a foundation for developing understanding of personal finance. The introductory material for the *FFFL Teacher Guide* also shows that some FFFL lessons are correlated with economics standards. This economics connection, however, is supplementary because the primary focus of FFFL is personal finance.

The right side of Table 3 shows the classification of those FFFL-MS Test items that address some aspect of the economics standards, although the connection in some cases is minor. About 24 items (or 48 percent) of the test address some economics content. The other 26 items are not included in the table because their content is solely personal finance.

Several points should be remembered in evaluating coverage of the test across personal finance or economics standards in Tables 1–3. First, the FFFL-MS Test is not designed as a test of each FFFL lesson in Table 1, each standard for personal finance in Table 2, or each economic standard in Table 3. There are too few test items per lesson or standard to make a sound judgment about mastery of a particular lesson or standard. It was not feasible for the test to include the number of items needed to assess all the FFFL lesson objectives or all the benchmarks associated with each personal finance or economics standard.

Second, the classification of a test item by lesson or standard is not exact. Some items may fit into more than one lesson or standard, or may not be a good fit. Some items might not fit any standard (as with economics). The distribution in Tables 1–3 reflects the best judgment of the test developers and NAC on the placement of an item.

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 middle school based on the content outlined by FFFL materials and the national standards in personal finance and economics. The weights for the test content were determined on the basis of consultation with members of the NAC.

TABLE 4. Cognitive Levels for the FFFL-MS Test

Level	Emphasis
I Knowledge	recognition and recall—ability to remember facts in a form close to the way they were first presented
II Comprehension	grasp the meaning and intent of information—ability to tell or translate in own words
III Application	use of information—ability to apply learning to new situations and circumstances

Cognitive Levels. Test items can also be classified by cognitive level. Although many taxonomies for the cognitive domain have been proposed, the most widely used was the one developed by Bloom (1956). This work has six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. Only the first three levels were used to classify test items for the FFFL-MS Test. A description of these cognitive levels is found in Table 4.

One reason for this change is that test experts have found Bloom’s *Taxonomy* to be more useful for classifying instructional objectives than it is for classifying test items (Ebel & Frisbie, 1991, pp. 51-52). This problem applies to the FFFL-MS Test because cognitive ratings of test items can be arbitrary, especially at the three highest levels—analysis, synthesis, and evaluation. To address this problem, the number of levels was reduced to the first three (knowledge, comprehension and application) because they were the ones most well-defined and justified. FFFL-MS Test items that could be classified as analysis or evaluation could be considered application items, so they were placed in the application category in the three-level taxonomy. Educators have found it easier to work with these three levels, or a modification of them, rather than the entire six that were described by Bloom (Davis, 2001, p. 242).

Table 5 displays the distribution of FFFL-MS Test items across the three cognitive levels. There are 11 knowledge, 25 comprehension, and 14 application items. In percentage terms, 72 percent of the items fall into the knowledge or comprehension levels, and 28 percent of the items are application. These results show that the test contains several cognitive levels, but the cognitive specification is weighted at the lower levels of Bloom's *Taxonomy*.

3. USES OF THE TEST

To Measure Student Understanding

The *Financial Fitness for Life: Middle School Test* was designed primarily to aid teachers in assessing and improving the quality of middle school teaching of personal finance. There are several ways of using it to achieve this objective.

AS A PRETEST

The FFFL-MS Test can be administered as a pretest at the outset of a unit of instruction using FFFL materials or at the beginning of a semester to assess the students' prior knowledge of personal finance concepts. This use is important to middle school teachers because some school districts now provide instruction in personal finance—sometimes only on a limited basis—before the middle school grades. If this prior instruction in personal finance has been effective, many students will have acquired some knowledge of personal finance. Thus, the wise middle school teacher will want to know the students' areas of strength and weakness to balance the course's content appropriately.

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. The relevant scores for comparison with those *without FFFL* are found later in the manual (Sec-

tion 6, Tables 6–8, 10). 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, however, may prove useful. For instance, if the average score of students on the test as a whole 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. The manual also provides brief rationales for each question (Section 7). Teachers might want to examine these rationales before deciding whether the particular concept tested deserves greater attention in the classroom. If still in doubt, the teacher should refer to the relevant pages of the *Financial Fitness for Life: Teacher Guide* or *Student Workouts* (see page numbers listed with item rationales).

Teachers can group their students' responses by content as shown in Tables 1–2. This work will enable the teacher to compare scores in several different areas of personal finance content. For example, the scores of students in a given class can be compared with these published for FFFL themes. Students' incorrect responses often tend to cluster about specific topics; the identification of such topics may lead teachers to give these topics greater emphasis in their instruction. Whether a comparison is made with individual items or broad categories, the FFFL-MS Test can be used to discover the areas in which students have strengths and weaknesses before formal teaching begins so that the teacher can make appropriate adjustments in the time and emphasis given to various topics in personal finance.

AS A POSTTEST

The FFFL-MS Test 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 appropriate published scores for students in the ta-

TABLE 5. *Financial Fitness for Life: Cognitive Level Coverage for FFFL-MS Test*

Themes and Lessons	I Knowledge	II Comprehension	III Application
There is No Such Thing as a Free Lunch (<i>Economic Way of Thinking</i>)	2	4	4
1. The Economic Way of Thinking	4	1, 2, 5	3, 6
2. Consumer Decision Making	8	7	9, 10
Education Pays Off: Learn Something (<i>Earning Income</i>)	1	8	1
3. Career Choice Making		12, 13, 14	11
4. Productivity	15	16, 17, 18	
5. Why Stay in School?		19, 20	
Tomorrow's Money: Getting to the End of the Rainbow (<i>Saving</i>)	2	5	3
6. Why Save?		21	
7. Types of Savings Plans		22	23
8. Who Pays and Who Receives?	24	25	26
9. Stocks and Mutual Funds		27, 28	29
10. Let Lenders and Borrowers Be			
11. Saving and Investing Are Risky Business	30		
Spending and Credit Are Serious Business (<i>Spending and Using Credit</i>)	3	4	3
12. Cash or Credit?	33	31	32, 34
13. Establishing Credit	35, 36	37, 38	
14. Comparison Shopping			39, 40
Get a Plan: Get a Grip on Life (<i>Money Management</i>)	3	4	3
15. Managing Cash	42	43	41
16. Choosing and Using a Checking Account		44, 46, 47	45
17. What Taxes Affect You?	49, 50	48	
Total Number of Questions	11	25	14
Percent of Total	22%	50%	28%

Note: For cognitive levels, I = Knowledge; II = Comprehension; and III = Application. See Table 4.

bles presented later in this manual. A pretest and posttest use of the FFFL-MS Test should help to provide evidence of the effect of *Financial Fitness for Life* in improving knowledge and understanding of personal finance.

Such assessment will be particularly useful if the test is administered on both a pre- and posttest basis to classes in which varying degrees of emphasis are placed on personal finance and different teaching approaches are employed. When used in this way, the FFFL-MS Test can measure the effects of varying teaching treatments on student performance in personal finance. Such research of this kind can contribute significantly to the improvement of teaching effectiveness of personal finance in middle schools. Researchers employing the FFFL-MS Test in experimental and non-experimental settings should pay particular attention to the technical data reported in this manual to make sure that the FFFL-MS Test serves as a reliable and valid measure for their specific applications and research needs.

When used as a posttest, the FFFL-MS Test should be administered early enough to allow one or two class periods to be used for discussion of test scores and results by FFFL themes. 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 FFFL training.

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 or refer students to the pages in the *FFFL Student Workouts* as listed in the item rationale. Discussion can then continue be-

tween students and teacher, using the FFFL booklets and supplementary materials on personal finance for further information. The FFFL-MS Test can become a powerful teaching tool if used in this way.

Caution should be used in reading or paraphrasing item answers from item rationales, 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 FFFL-MS Test is to administer one of its forms 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.

The FFFL-MS Test is also flexible. One worthwhile use of the FFFL-MS Test is to give FFFL theme tests after the teacher has completed instruction on those FFFL themes. Student scores can then be used to evaluate whether additional instruction is needed on the FFFL theme before the teacher begins instruction on the next FFFL theme (see Section 6, Tables 12–14).

It should be remembered if whole or parts of the FFFL-MS Test 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 *Financial Fitness for Life: Middle School Test* was designed for middle school teachers or administrators to use with middle school students taking courses or units in personal finance that use the *Financial Fitness for Life* materials for instruction. It is also possible to use this test in personal finance courses and units that do not use FFFL materials because the test covers concepts that would typically be taught in many personal finance courses. The decision, however, about whether the FFFL-MS Test should be used to measure student achievement in these other courses or units should be based on a careful review of test items and course content.

Those individuals who administer the FFFL-MS Test should be familiar with the test procedures that are described below. Specific directions for the student are provided in the student test booklet. Although these instructions will be adequate for most situations, it is suggested that the examiner carefully look over the test and the answer sheet before the testing session begins to anticipate any problems. Unless standard procedures are followed when the FFFL-MS Test is given to middle school students, the results obtained at different times may not be strictly comparable with the published results in this manual. For most uses, the FFFL-MS Test should be easy to administer and it may be scored by hand or machine.

Materials

The FFFL-MS Test booklets are reusable, provided students follow instructions and do not write in the booklets. After each testing session, you should inspect the booklets for pencil marks. Either erase any marks completely before using the booklets again or discard them.

The test questions may be answered on a facsimile of the blank answer sheet provided in Ap-

pendix 6, or on a machine-readable answer sheet having at least 50 answer positions, each with at least four options. If answers are to be machine scored, the teacher must use answer sheets that are compatible with the scoring equipment to be used, and the students must mark the answer sheets with the appropriate pencils (usually No. 2 lead). In any event, students should be cautioned not to use a ballpoint pen. Use of a pen will make it difficult to change responses, and most machines will not score ballpoint markers. For machine scoring, it is advised to have additional pencils of the appropriate type on hand.

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 accommodate both the test booklet and answer sheet. Students should be seated so as to minimize opportunities to see each other's answers (unless the group-testing method is used).

All test materials should be counted and assembled prior to the testing session. Placing an answer sheet under the front cover of every test booklet so that both answer sheet and test booklet can be distributed together saves testing time. Students should receive only one booklet.

Timing the Test

The FFFL-MS Test requires about 40 minutes of testing time for middle school students, depending on the group. If testing is done in a class period that is shorter than 40 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 FFFL-MS Test 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 40 minutes. Since many class periods are set at 45 to 50 minutes, the testing should begin as soon as possible after the start of class. To ensure that students do not arrive late, it may be helpful to remind them in the class prior to the test to try hard to be on time and to bring No. 2 pencils.

It is also possible for the teacher to administer the FFFL-MS Test by theme or subtest portions of the entire FFFL-MS Test. For example, if more time is needed for testing than the class period permits, then just three FFFL theme tests could be administered one day and the remaining two FFFL theme tests could be administered the second day.

In the instructions that follow, it is assumed that the teacher will administer the entire test in one class setting. If the testing is to be conducted in subparts or by FFFL theme, then some modification of these general directions will be necessary for the shortened test. Students will also need to be told that they should stop their testing work as they complete the specified FFFL theme or set of themes that are to be tested.

Directions for the Examiner

If the test booklets and answer sheets are passed out together (with No. 2 pencils if necessary), instruct those students taking the test to fill in the requested information on the answer sheet before opening the test booklet. If the test booklets and answer sheets are not passed out together, distribute the booklets while the students are filling out the preliminary information on the answer sheet. In either case, test booklets should remain face up and closed until the examiner gives the signal to begin.

When everyone has received all the necessary materials, say:

Read the directions to yourselves as I read them aloud:

1. Please fill out the information requested on the answer sheet before beginning your test.
2. Do not write in this booklet or make other marks in it unless your teacher tells you to do so.
3. When marking your answer sheet, use *only* a regular No. 2 pencil. **DO NOT USE A BALLPOINT PEN.** Do not make any stray marks on the answer sheet. If you make a

mistake, erase completely the answer you wish to change.

4. 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, browsing the Internet, or from some other source. These questions will measure how well you understand the principles of personal finance and their application.
5. This FFFL test of 50 questions is broken into five parts called themes. Each FFFL theme has 10 questions. After you complete the 10 questions on one theme, you should move to the next theme and answer those questions. Continue this work until you complete all questions. After you are finished you can return to questions to check or complete any answers.
6. 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 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 50 questions or incomplete statements, for which you should choose the **one best answer**. With some items more than one answer may appear to be correct, but your task is to choose the *best* answer.

After reading the directions say:

“Sample questions 1 and 2 on the front cover of the test booklet give examples of a properly marked answer. Notice that response C on question 1 and response A on question 2 have been completely filled in. When you begin the test, read each question carefully and choose your answer. Then use your pencil to blacken the lettered space *on the answer sheet* that corresponds to the letter of the answer you have chosen.”

If answer sheet will be machine scored, say:

“The test will be scored by machine, so be sure that you use only a No. 2 pencil to mark your answers on your answer sheet. Fill in the space under the letter that corresponds to the letter of the answer you have chosen. Be certain to make each mark heavy and black. If you change an answer, be sure to erase your first mark completely before making another mark. Erase all stray marks on your answer sheet.”

Whether the sheets are to be scored by hand or by machine, say:

“When you finish the test, go back and check your answers. If you have any questions, raise your hand now. I cannot answer *any* questions about the test content after it has begun. However, if your pencil breaks or if you find you have a faulty booklet or answer sheet, raise your hand.”

When you have answered all questions, say:

“You will have 40 minutes for the test. Remember: Make no marks on the test booklet itself. All right. Begin.”

During the first minutes of the test, check to see if the students are marking their answer sheets properly. When testing is completed, collect all materials. Verify that all materials have been collected before students leave the room.

5. SCORING THE TEST

The score for the *Financial Fitness for Life: Middle School Test* is the number of correct responses. The maximum possible score is 50. A single answer sheet should be used, and this 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 6. 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. To use the scoring key, punch out the blackened circles and place the key over the answer sheet. The raw score is the total number of answer

marks showing through the holes minus any multiple-marked items.

After the tests have been graded and returned to the students, the teacher should read each test item aloud (as the students read silently from their test booklets and take note of their responses), asking those who answered correctly to raise their hands. The number of correct responses divided by the number of students taking the test and multiplied by 100 is the class percentage correct for that item. This percentage may be compared with the test data (see Section 6, Table 8).

Most middle schools are equipped to machine score tests. In such cases, a special answer sheet is required that is compatible with the scoring machine available. Usually, No. 2 pencils *must* be used to mark answers. If machine scoring will be used, check with the scoring service in advance about required answer sheets and pencils.

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.

6. TECHNICAL DATA

Student Sample

The *Financial Fitness for Life: Middle School Test* was administered to a sample of middle school students during the 2003–2004 school year. Some of these middle school students had received instruction in personal finance using the FFFL materials. Another group of middle school students was also tested in the same schools. These “control” students had not received FFFL or personal finance instruction during that school year.

The test data in this manual provides results from this large sample of middle school students, both those who had received FFFL instruction and those students who had not received such in-

struction. Test users can inspect these samples and compare them to the scores of their students when they administer the FFFL-MS Test. In addition, data from this sample was used to judge the technical adequacy of the FFFL-MS Test.

Table 6 reports the aggregate statistics obtained from the 1060 middle school students who took the test. These results are shown by type of instruction (with or without FFFL). The sample data were collected from classes in the six middle schools listed in Appendix 2. Five of these middle schools were in Texas and one was in Minnesota. All of the FFFL teachers participated in training sessions on using the FFFL curricula and were familiar with the content of the FFFL materials. Each FFFL teacher then taught students using the FFFL materials. They also arranged for a similar group of students in their school who had not received FFFL instruction to be tested.

No claim is made that the group tested is *exactly* representative of the student population enrolled in middle schools throughout the nation because it was not possible to obtain a stratified, random sample of students. The data, however, are probably indicative of the results that would be obtained if a teacher trained in the use of FFFL materials provided personal finance instruction to students and compared those results to students who have not received FFFL instruction.

These data were collected from students and teachers so that information was available for judging the characteristics of the FFFL sample and the test results. Data supplied later in this section contain scores broken down across subsample characteristics by gender, grade level, race and ethnic origin, household income level, poverty level and type of community.

The sample data should not be considered as indicating the absolute standard of achievement in FFFL or personal finance instruction. Rather, the sample results provide a relative standard. They can aid teachers in comparing their students with others. The comparisons will be meaningful to the extent that composition of the student body in any class is similar to the sample tested.

TABLE 6. Aggregate Statistics for the Student Sample Taking the FFFL-MS Test

Sample Size	
Number of Students	1060
Percent with FFFL	66%
Reliability	
Coefficient alpha	.87
Standard error of measurement	3.11
Means	
<i>With FFFL</i> (n = 698)	25.82 (8.66)
<i>Without FFFL</i> (n = 362)	17.19 (4.97)

Note: Standard deviations are in parentheses.

Percentile Tables

Table 7 presents the raw test scores and corresponding percentile ranks from the samples of middle school students with and without FFFL instruction. 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 have had prior instruction in personal finance. The *with FFFL* column shows the results for those students who received FFFL instruction from teachers who had received FFFL training. The *without FFFL* column shows the results from the sample of middle school students who had not received FFFL instruction.

Percentile ranks allow comparisons to be made among students in different groups. For example, a student who receives FFFL instruction and obtains a raw score of 32 on the FFFL-MS Test has a percentile rank of 75 among those students who also received FFFL instruction. A raw score of 32 for a student who has not had FFFL instruction would be the equivalent of a percentile rank of 99. Therefore, a student with FFFL instruction and a raw score of 32 is performing as well as, or better than, 99 percent of students with the same score who have not received FFFL instruction.

**TABLE 7. Percentiles for FFFL Scores:
FFFL-MS Test**

Raw Score	With FFFL (n = 698)	Without FFFL (n = 362)
50		
49		
48		
47		
46		
45		
44		
43	99	
42	98	
41	97	
40	96	
39	94	
38	92	
37	90	
36	87	
35	84	
34	81	
33	78	
32	75	99
31	72	99
30	68	99
29	64	
28	60	97
27	57	96
26	54	96
25	50	95
24	46	94
23	41	91
22	38	87
21	35	83
20	31	76
19	27	70
18	23	63
17	19	56
16	16	47
15	13	38
14	11	30
13	7	24
12	5	18
11	4	13
10	2	8
9	2	4
8	1	2
7	1	1
6		
5		
4		
3		
2		
1		

Item Difficulty and Discrimination

Test administrators may want to know how their students performed on certain items of the FFFL-MS Test. 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 8 shows the percentage of correct responses on each item for students with and without FFFL instruction. This percentage is an estimate of the difficulty of an item for a particular group of students. Theoretically, this percentage can range from 0 to 100 percent, but most items will fall in the 40 to 80 percent correct range for those students with FFFL instruction. Students without FFFL instruction will generally have a lower percentage correct for each item.

Data on item difficulty should be interpreted with care. Item difficulty (percentage of correct responses) depends on many things besides the complexity of the fact, concept, or principle being tested. Such matters as classroom emphasis on the specific point in question, 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, therefore, 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 FFFL-MS Test 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 with FFFL instruction score below 25 percent on the test (or about 12 or less correct answers), their answer sheets in particular should be carefully checked for systematic errors in test marking, scoring, or test administration.

Item Discrimination. Also reported in Table 8 is the discrimination coefficient for each FFFL test item. It is the corrected item-to-total score correlation or point-biserial correlation. The coefficient measures the correlation between the students' total test scores (less the particular item) and their scores on a particular item. It is an assessment of the functioning of that item with the students who were tested.

This correlation coefficient ranges from 0 to 1. The *higher* the value of 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 as measured by their total score.

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 are *reverse discriminators* (indicating that more lower-scoring students get the question right than do higher-scoring students). Teachers should be aware that the item discrimination coefficient does *not* adjust for the reading level or general ability of students. Thus, higher ability students may do well on a given question regardless of whether or not they have had FFFL or personal finance instruction.

Item Responses

Tables 9 and 10 show the percentages of students responding to the four options on an FFFL test item, with the percentage for the correct response in bold face and with an asterisk. An analysis of item responses can be useful. For example, if a substantial percentage of students answered A when the correct answer was C, the teacher would do well to study distractor A to determine the reason why students selected the incorrect response. It should also help to consult the Item Rationale (Section 7) for explanations.

TABLE 8. Item Discrimination and Percentage of Correct Responses: FFFL Middle School Test

Item	Correct Answer	Corrected Item—Total Correlation (n = 1060)	Percent Correct	
			With FFFL (n = 698)	Without FFFL (n = 362)
1	C	.39	.50	.26
2	A	.31	.85	.69
3	C	.39	.70	.43
4	C	.41	.53	.17
5	B	.35	.55	.33
6	A	.02	.45	.46
7	D	.33	.70	.56
8	B	.30	.48	.36
9	D	.29	.56	.45
10	C	.38	.77	.64
11	A	.36	.85	.75
12	B	.35	.81	.64
13	C	.43	.76	.34
14	D	.30	.64	.34
15	C	.27	.25	.12
16	D	.45	.53	.33
17	B	.35	.54	.32
18	B	.11	.46	.38
19	C	.40	.41	.15
20	A	.20	.29	.16
21	B	.27	.40	.17
22	C	.42	.62	.41
23	A	.13	.27	.26
24	C	.46	.71	.45
25	D	.30	.49	.29
26	C	-.01	.18	.22
27	D	.00	.28	.27
28	B	-.10	.23	.25
29	A	.11	.30	.20
30	B	.29	.59	.44
31	D	.44	.57	.27
32	A	.41	.41	.17
33	C	.18	.32	.27
34	A	.14	.43	.37
35	A	.31	.35	.21
36	B	.45	.57	.33
37	D	.40	.65	.44
38	B	.40	.56	.36
39	D	.50	.58	.34
40	C	.33	.44	.28
41	D	.32	.33	.11
42	D	.48	.55	.28
43	A	.31	.49	.27
44	B	.43	.65	.47
45	B	.41	.65	.48
46	C	.39	.48	.29
47	A	.47	.57	.39
48	C	.24	.60	.43
49	D	.40	.40	.22
50	A	.34	.55	.36

TABLE 9. Percentage Response to Each Alternative: FFFL Middle School Test
FFFL Sample (n = 698)

Item	A	B	C	D	Blank
1	16	23	50*	11	0
2	85*	4	1	10	0
3	7	7	70*	15	0
4	22	8	53*	17	0
5	18	55*	11	16	0
6	45*	8	12	35	0
7	10	10	10	70*	0
8	21	48*	20	10	0
9	5	14	24	56*	1
10	11	7	77*	4	0
11	85*	4	4	7	0
12	7	81*	8	4	0
13	7	11	76*	6	0
14	8	15	13	64*	0
15	21	8	25*	46	0
16	9	16	22	53*	0
17	25	54*	13	8	0
18	9	46*	12	33	0
19	23	19	41*	17	0
20	29*	20	41	9	0
21	28	40*	12	20	0
22	16	11	63*	11	0
23	27*	30	27	16	0
24	11	11	71*	8	0
25	16	9	25	49*	0
26	27	35	18*	20	0
27	14	37	21	28*	0
28	13	23*	44	20	0
29	30*	43	12	15	0
30	18	59*	9	14	0
31	17	16	11	57*	0
32	41*	15	34	11	0
33	21	35	32*	12	0
34	43*	12	24	21	0
35	35*	17	31	16	0
36	17	57*	12	14	0
37	9	14	12	65*	0
38	18	56*	9	17	0
39	16	13	14	58*	0
40	17	21	44*	18	0
41	29	17	22	33*	0
42	13	25	8	55*	0
43	49*	11	26	14	0
44	12	66*	11	11	0
45	10	65*	8	17	0
46	16	19	49*	16	0
47	57*	17	12	13	0
48	15	15	60*	11	0
49	22	15	23	40*	0
50	56*	9	19	16	0

Note: *Correct answer

TABLE 10. Percentage Response to Each Alternative: FFFL Middle School Test
Control Sample (n = 362)

Item	A	B	C	D	Blank
1	22	20	26*	31	0
2	69*	10	7	14	0
3	11	19	43*	27	0
4	44	12	17*	26	0
5	32	33*	14	22	0
6	46*	19	9	25	0
7	14	15	15	56*	0
8	23	36*	27	13	1
9	13	20	22	45*	0
10	20	10	64*	6	0
11	75*	6	10	10	0
12	10	64*	18	8	0
13	19	25	34*	22	1
14	19	24	23	34*	1
15	32	17	12*	38	0
16	15	29	23	33*	0
17	40	32*	17	12	0
18	12	38*	22	26	0
19	43	27	15*	14	0
20	16*	22	40	21	0
21	41	17*	17	25	0
22	15	22	41*	21	0
23	26*	37	16	20	0
24	24	21	45*	9	0
25	20	19	32	29*	1
26	26	35	22*	16	1
27	24	25	24	27*	0
28	20	25*	33	22	0
29	20*	41	17	21	0
30	16	44*	12	27	0
31	26	25	22	27*	0
32	17*	14	57	11	0
33	27	31	27*	15	0
34	37*	17	21	24	0
35	21*	25	25	29	0
36	16	33*	20	30	1
37	15	26	15	44*	1
38	19	36*	19	25	1
39	24	19	23	34*	0
40	22	28	28*	22	1
41	46	25	17	11*	0
42	19	35	17	28*	0
43	27*	17	38	19	0
44	14	47*	18	21	0
45	14	48*	12	25	0
46	20	30	29*	20	0
47	39*	20	20	20	0
48	21	17	43*	18	0
49	25	26	27	22*	0
50	37*	13	24	25	0

Note: *Correct answer

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 perfectly (that is, obtain a student's "true" score).

SEM. Fortunately, it is possible to estimate the amount of variation in test scores that is 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 6, is an estimate of the amount of variation that can be expected in a test score (Linn & Gronlund, 2000, pp. 119-125). A raw score of 24 on a test with an SEM of 3.11 indicates about 67 percent certainty that a person's "true" score lies in a range from 20.89 to 27.11 (24 ± 3.11), or that we can be 95 percent certain that the "true" score lies in a range from 17.78 to 30.22 [$24 \pm (2 \times 3.11)$]. The smaller the SEM, the more accurate a test is as a measuring instrument. Individual test scores are best thought of as lying within a range, rather than as a single score, because of our inability to measure perfectly (the SEM is never zero).

Alpha. Another measure of overall test reliability is the coefficient alpha (Cronbach, 1951). It is a measure of the internal consistency among test items with a common focus, which for the FFFL-MS Test is personal finance. One way to conceptualize internal consistency is to think of splitting the test in half and correlating student

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 FFFL-MS Test indicates that there is good internal consistency among items and that the FFFL-MS Test is a highly reliable measure of personal finance achievement among middle school students.

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

Validity

Substantial evidence was collected for establishing the validity of the *Financial Fitness for Life: Middle School Test* as an achievement measure of understanding of personal finance in middle school. This evidence reported in this section consists of content and construct.

Content. One of the most important validity questions for an educational achievement test such as the FFFL-MS Test 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 FFFL-MS Test 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 two guidelines for the teaching of personal finance: (1) *Financial Fitness for Life: Teacher Guide for Grades 6–8* (Flowers and Gal-

laher, 2001); and (2) *National Standards in Personal Finance* (JumpStart Coalition, 2002). These documents served as the guide for the development and selection of test questions on the FFFL-MS Test. The results of this content validity work are shown in the content specification tables (Tables 1 and 2). 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 these two documents. Finally, the FFFL-MS Test includes some economic content that is considered to be important for instruction in personal finance.

The process used for test development also ensured that the items on the FFFL-MS Test would contain valid content as outlined in the *FFFL Teacher Guide* and *National Standards in Personal Finance*. This work was reviewed by a National Advisory Committee composed of five teachers and four directors of centers or councils for economic education. They had experience with the FFFL materials either in classroom use or teacher training programs. These committee members and the three test developers, who also served on the NAC, evaluated the content of questions for any potential bias or reading problems that would affect the performance by different types of middle school students. All items were also field-tested with students and then checked by NAC members before they were included on the FFFL-MS Test.

The content validity of the FFFL-MS Test was determined by comparing the test questions with the content specification determined to be important by authoritative experts in personal finance instruction for middle schools. Nevertheless, there is no one standard for content validity. Whether the FFFL-MS Test is a valid test often depends on the purpose for which it is used. Some teachers or test users may disagree with the personal finance content presented in the *FFFL Teacher Guide* or used for test questions by the NAC members. In those cases, the FFFL-MS Test may not be content valid for the purposes for which the test users want to use the test.

Construct. There is substantial evidence from the student sample on the *construct* validity of the FFFL-MS Test. Construct validity refers to the ability of the test to measure the underlying construct or focus of the test. The FFFL-MS Test is designed to measure understanding of personal finance among middle school students. One type of evidence for construct validity that is presented is whether the test performs well with different groups of students and in the expected direction.

As shown in Table 6, middle school students with FFFL instruction scored 8.63 points higher than students without FFFL instruction. This difference is statistically significant in the expected direction. The probability that this difference is due to chance is about zero (probability less than 0.001).

A further check on the construct validity of a test item may be made by reviewing the performance on each item for students with and without personal finance instruction (Table 8). By comparing the percent correct from each group, it is clear that the “with FFFL” group performed better on all but 3 of the 50 items on the FFFL-MS Test.

Criterion-related Validity. A third type of validity is criterion-related. This type correlates test performance with another valid and reliable instrument or criterion that measures the same construct. This evidence is often difficult to obtain because a good criterion measure is often not available, as was the case with the FFFL-MS Test. With a reliable and valid criterion, evidence on content and construct validity may be more convincing and important (Ebel & Frisbie, 1991).

Additional Construct Evidence. Table 11 presents some descriptive statistics from the student sample for the FFFL-MS Test. The data are broken down by gender, grade level, the race or ethnic composition of the school, the household income of the class, the free lunch composition of the school, and type of community. The mean FFFL-MS Test score, standard deviation, and sample sizes are given for each subgroup.

**TABLE 11. Descriptive Statistics for Middle School Students with and without FFFL Instruction:
FFFL-MS Test**

	With FFFL			Without FFFL		
	Mean	Std. Dev.	Number	Mean	Std. Dev.	Number
By student sex						
Females	26.13	8.25	321	16.88	4.64	159
Males	25.32	8.85	315	17.80	5.16	176
By grade level						
Grade 6	24.50	7.57	423	16.51	4.69	172
Grade 7	37.15	3.12	27	16.79	3.90	24
Grade 8	27.22	9.84	161	18.76	5.18	124
By % black in school						
0–20%	25.18	9.31	317	17.66	5.06	239
> 20%	26.35	8.06	381	16.26	4.66	123
By % Hispanic in school						
0–20%	27.31	9.59	292	17.98	5.01	222
> 20%	24.75	7.77	406	15.92	4.63	140
By income level in school						
Low	26.65	8.61	537	16.38	4.74	180
Middle	23.04	8.28	161	17.98	5.07	182
By % free lunch in school						
0–50%	25.80	9.45	248	18.11	5.14	198
> 50%	25.83	8.21	450	16.07	4.52	164
By type of community						
Rural	28.82	9.71	233	18.46	5.02	150
Suburban	20.34	6.34	41	16.09	4.57	55
Urban	24.70	7.69	424	16.35	4.80	157
All students	25.82	8.66	698	17.19	4.97	362

As Table 11 shows, there are higher scores for those students with FFFL instruction compared to the scores for those students without FFFL instruction across *all* categories. What these results indicate is that performance on the test is responsive to instruction in personal finance, regardless of other personal, social, or environmental characteristics listed in the table. These breakdown data indicate that there is *construct* validity to the FFFL-MS Test.

The data on gender and grade level were obtained from student replies on the answer sheets. The data on household income and type of community were obtained from teacher surveys. The data on the composition of schools by race (percent black), ethnicity (percent Hispanic), or estimate of poverty level (percent free lunch) were obtained from school information in a U.S. Department of Education database.

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 characteristics without control over other characteristics. 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.

FFFL Theme Tests

The reliability and validity evidence so far has focused on the entire 50-item test. Some teachers, however, may want to administer and score each 10-item FFFL theme test separately. Some teachers may also not have time to complete instruction on all five FFFL themes during a course or unit. Instead of administering the entire test, these teachers might opt to give a FFFL test covering fewer than the five FFFL themes for which students received direct instruction. This part of the manual explains the interpretation of results from administering FFFL theme tests.

Separate Use. It is possible for teachers to give and score the FFFL theme tests after providing instruction on that theme, but such test use should be treated with caution. The problem is that there are only 10 items to test each theme. These few items limit the reliability and validity of the FFFL theme tests. The alpha reliability of each theme test (.32 to .71) is well below the reliability for the overall test (.87). The differences in mean scores are also small.

Table 12 presents the mean scores for the FFFL theme tests. These mean scores can easily be converted to percent correct because there are 10 items on each test. Thus a mean score of 6.08 for the FFFL students on the 10 items for FFFL theme one (economic way of thinking) indicates that students had an average score of 60.8 percent correct. A review of the theme scores show that students performed best on FFFL theme one and worst on FFFL theme three (saving) at 40.7 percent correct. How well students performed on the other three FFFL themes can be evaluated separately or in comparison to other theme scores. Comparisons can also be made with the mean scores of those students without FFFL instruction. Percentiles are not reported, however, for the theme tests because of the few test items.

TABLE 12: Theme Scores: FFFL-MS Test

Theme	With FFFL (<i>n</i> = 698)	Without FFFL (<i>n</i> = 362)
1. Economic Way of Thinking		
Mean	6.08	4.35
S.D.	(2.23)	(1.79)
2. Income		
Mean	5.51	3.52
S.D.	(2.05)	(1.51)
3. Saving		
Mean	4.07	2.97
S.D.	(1.73)	(1.47)
4. Spending/Credit		
Mean	4.88	3.03
S.D.	(2.47)	(1.68)
5. Money Mgmt.		
Mean	5.27	3.31
S.D.	(2.68)	(1.70)

Combined Use. It is expected that some classes will not attempt to cover all themes included in the FFFL materials. Table 13 reports the test results for the “with FFFL” and “without FFFL” groups on the first four themes. Table 14 reports the test results for the “with FFFL” and “without FFFL” groups on the first three themes.

Each table supplies the mean and standard deviation of the test score for those students with and without FFFL instruction. In each case the mean score is an expected higher score for the FFFL group that is statistically significant. Each subtest grouping (themes 1–4 or themes 1–3) shows a respectable reliability for the shortened version of the full test. The alpha reliability is .82 for a 40-item test covering themes 1–4 and .76 for a 30-item test covering themes 1–3. Also shown in each table are the percentile rankings for students who have received FFFL instruction and students who have not. These percentile ranks can be useful for comparing achievement when less than the full FFFL test is used with students.

Conclusion

A standardized test such as the FFFL-MS Test has much to offer teachers and school administrators who are responsible for instruction in personal finance. This test instrument was carefully designed and developed to cover the subject matter that *ought* to be taught (and tested) when using the FFFL curriculum materials. The sample data provided statistical evidence on the reliability and validity of the test measure. The use of the FFFL-MS Test as a standardized measure of FFFL achievement has many advantages and should be a valuable resource.

TABLE 13: Themes 1–4: FFFL Middle School Test

	With FFFL (n = 698)	Without FFFL (n = 362)
Mean	20.55	13.88
S.D.	(6.68)	(4.17)
Percentiles		
Raw Score		
40		
39		
38		
37		
36		
35		
34	99	
33	98	
32	97	
31	94	
30	92	
29	90	
28	87	
27	83	
26	79	
25	76	
24	71	
23	67	
22	62	
21	55	
20	49	99
19	44	99
18	39	98
17	34	98
16	30	97
15	24	93
14	21	87
13	17	79
12	13	67
11	10	58
10	7	46
9	4	37
8	3	25
7	2	16
6	1	9
5		5
4		3
3		1
2		
1		
0		
Reliability = .82		SEM = 2.86

TABLE 14: Themes 1–3: FFFL Middle School Test

	With FFFL <i>(n = 698)</i>	Without FFFL <i>(n = 362)</i>
Mean	15.66	10.84
S.D.	(4.84)	(3.32)

Percentiles

Raw Score

30		
29		
28		
27		
26		
25	98	
24	97	
23	95	
22	92	
21	88	
20	83	99
19	79	99
18	72	98
17	62	98
16	56	97
15	48	93
14	40	87
13	33	79
12	27	67
11	21	58
10	16	46
9	11	37
8	7	25
7	4	16
6	3	9
5	2	5
4	1	3
3		
2		
1		
0		

Reliability = .76

SEM = 2.42

7. ITEM RATIONALE: FINANCIAL FITNESS FOR LIFE - Middle School Test

THEME 1

ITEM	RATIONALE
<p>1. Choices have to be made because:</p> <ul style="list-style-type: none"> a. costs are limited. b. wants are limited. c. resources are limited. d. consequences are limited. 	<p>Choices have to be made because resources are limited for meeting economic wants, which are unlimited. Costs and consequences may be limited or unlimited depending on the circumstances, but these options are not reasons for making choices. [Lesson 1: TG pp. 8-9; SW pp. 4-5]</p>
<p>2. The phrase “There’s no such thing as a free lunch,” refers to the fact that:</p> <ul style="list-style-type: none"> a. the use of resources has a cost. b. shortages are good for consumers. c. discount coupons reduce prices to zero. d. wants are limited and resources are unlimited. 	<p>The phrase “there’s no such thing as a free lunch” refers to the opportunity cost of resource use for one purpose rather than another. When limited resources are used to provide a “free” lunch, then a choice to use resources for one purpose means that these resources are not available for other uses, so there is an opportunity cost. [Lesson 1: TG pp. 1-6, 9; SW pp. 1-2, 4]</p>
<p>3. Suppose a local government decides to spend more of its funds on public school education and less on roads. This situation illustrates which point about the economic ways of thinking?</p> <ul style="list-style-type: none"> a. People’s resources are unlimited. b. People’s wants are relatively limited. c. Every choice involves an opportunity cost. d. The cost of a choice is greater than the benefit. 	<p>The government must make choices about how to use its limited resources. Each of these choices involves an opportunity cost because time, space, and money are limited, and government cannot have everything it wants. In this case, spending more on public school education means that there is an opportunity cost in the form of less spending on roads. [Lesson 1: TG pp. 2-3, 8-9; SW pp. 1-2]</p>
<p>4. The opportunity cost of a decision is the:</p> <ul style="list-style-type: none"> a. money spent making the decision. b. worst choice that could have been made. c. value of the next best alternative not chosen. d. total benefits expected from all forgone opportunities. 	<p>Opportunity cost is the next best alternative that is given up when a choice is made. For example, the opportunity cost of deciding to watch a movie for two hours is what would have been the next best use of the two hours of time. None of the other options are correct definitions of opportunity cost. [Lesson 1: TG pp. 2-3, 8; SW pp. 3-4]</p>
<p>5. Which is an example of the effect of an economic incentive?</p> <ul style="list-style-type: none"> a. assisting the poor to help others b. buying something because it is on sale c. exercising at the gym to feel physically fit d. giving up a part-time job to have more time with friends 	<p>Economic or monetary incentives motivate and influence human behavior in predictable ways. People respond to incentives, such as sale prices and discounts, and will buy a product. They make this purchase because they can pay less for it than without the incentive. The other options focus on personal goals such as helping the poor or stay fit, or spending time with friends. [Lesson 1: TG pp. 3-4, 9-10; SW pp. 3-4, 7-10]</p>

ITEM	RATIONALE
<p>6. A \$400 tax is placed on all sports cars and this increases the price of sports cars. The economic way of thinking suggests that:</p> <p>a. fewer sports cars will be sold. b. more sports cars will be sold. c. the production of sports cars will cease to exist. d. the production of sports cars will be more profitable.</p>	<p>The increase in the price of sports cars will give some consumers less economic incentive to buy sports cars because they are now too expensive, and fewer will be sold. The other consumers will still be able to afford to buy cars even with the small tax, so car production will not cease to exist. For carmakers, the tax is like an increase in the cost of production, so a higher tax reduces the profitability from car production. [Lesson 1: TG pp. 3-4; SW p. 4]</p>
<p>7. Which is a primary reason for planning and thinking before buying something?</p> <p>a. to reduce your income b. to encourage impulse spending c. to make decisions in the fastest way possible d. to get the item that best satisfies your wants</p>	<p>There are costs and benefits to every decision. Costs are what are given up when a choice is made. Benefits are what are gained when a choice is made. Planning and thinking before buying helps a person better consider the costs and benefits of a decision. Such decision-making is likely to result in a choice that best satisfies wants. Planning and thinking discourages impulse spending, is not fast, and does not reduce income. [Lesson 2: TG pp. 15-17; SW pp. 13-15]</p>
<p>8. Which is the first step on the decision making process?</p> <p>a. Identify the goals. b. State the problem. c. List the alternatives. d. Evaluate the alternatives.</p>	<p>The five steps in the decision making process can be remembered with the acronym PACED. The process begins by stating the Problem, then listing the Alternatives, followed by identifying the Criteria, then Evaluating alternatives based upon criteria, and finally making a Decision. [Lesson 2: TG pp. 13-18; SW pp. 15-17]</p>
<p>9. Roxie ordered a hamburger after quickly looking at the menu. Later, she found out the restaurant offered Reuben sandwiches, and she wished she had ordered one. Which step of the decision making process did Roxie do a poor job of following?</p> <p>a. knowing the problem b. identifying the criteria c. evaluating the alternatives d. identifying the alternatives</p>	<p>Roxie did a poor job with the second step in the decision-making process. She did not carefully evaluate her possible alternatives and as a consequence was unhappy with her final choice. [Lesson 2: TG pp. 13-18; SW pp. 15-16]</p>

ITEM	RATIONALE
<p>10. <i>Sally can shop at two grocery stores. The closest one to her has less variety and higher prices, while the farther one has more variety and lower prices. Sally shops at the closest one. Which factor did Sally give the most weight to in her decision?</i></p> <p>a. <i>low prices</i> b. <i>more variety</i> c. a near location d. <i>the number of stores</i></p>	<p>Decisions often involve trade-offs (giving up a little of something in order to get more of something else). Sally was willing to pay the higher price on her groceries because they are at a nearer location. In this case she gave the most weight in her decision to location over variety or price. [Lesson 2: TG pp. 13-18; SW p. 16]</p>

THEME 2

<p>11. <i>You are employed, but your income is low because you have few job skills. What would be the best action to take to increase your income?</i></p> <p>a. Get more training. b. <i>Apply for a credit card.</i> c. <i>Stay with the current job.</i> d. <i>Look for another similar job.</i></p>	<p>To gain a higher income, it is important to recognize the relationship between marketable skills and workplace success. Getting more training will improve job skills and make a worker more productive and valuable to a business. A business will typically reward that higher productivity with more income. Applying for a credit card will not increase income because credit card use is a short-term loan. Staying with a current job or securing another similar job generally does not increase a person's skill level, but getting more training does. [Lesson 3: TG pp. 20-21, 25; SW pp. 26-29]</p>
<p>12. <i>How do education and job experience generally affect the productivity of a worker?</i></p> <p>a. <i>Education and job experience have no effect on productivity.</i> b. Job experience and education generally increase productivity. c. <i>Education increases productivity but job experience does not.</i> d. <i>Job experience increases productivity but education does not.</i></p>	<p>Workers who have more education and who are better trained will have more skills. The greater skills will help workers be more productive at their jobs. Option b is completely correct. Option a is completely incorrect. Options c and d are only partially correct. [Lesson 3: TG p. 22; SW p. 27].</p>
<p>13. <i>Compared with most employees, entrepreneurs:</i></p> <p>a. <i>work fewer hours.</i> b. <i>work better in teams.</i> c. are more willing to take risks. d. <i>are more willing to take government aid.</i></p>	<p>When entrepreneurs start businesses they are willing to take risks that most employees are not willing to assume. Entrepreneurs typically are hard working and work more hours rather than fewer hours than most employees. They also tend to be independent and want to be their own bosses. They are no more willing to take government aid than are most employees. [Lesson 3: TG pp. 24, 30; SW pp. 27-28, 36-37]</p>

ITEM	RATIONALE
<p>14. <i>Entrepreneurs are considered innovators because they:</i></p> <p>a. <i>pay more taxes.</i> b. <i>work long hours.</i> c. <i>take dangerous jobs.</i> d. <i>create new products.</i></p>	<p>Entrepreneurs are considered innovators because they observe an opportunity, and create new goods and services, or improve existing products. None of the other options are valid reasons for calling entrepreneurs innovators. [Lesson 3: TG pp. 24-25; SW pp. 27-29]</p>
<p>15. <i>Goods produced for the purpose of making other goods and services are called:</i></p> <p>a. <i>stock goods.</i> b. <i>credit goods.</i> c. <i>capital goods.</i> d. <i>consumer goods.</i></p>	<p>Capital resources are goods produced for the purpose of producing other goods and services. Examples of capital goods would be factories, machines, tools, or technology that are used to produce other goods and services. [Lesson 4: TG pp. 37-40, 42; SW pp. 41-43]</p>
<p>16. <i>The main reason that businesses update their machinery and equipment is to:</i></p> <p>a. <i>keep their employees.</i> b. <i>impress their customers.</i> c. <i>raise their cost of production.</i> d. <i>increase worker productivity.</i></p>	<p>Capital resources help workers increase the amount of output per unit of labor resources. The main reason that businesses purchase new equipment and technology is so workers can produce more goods and services, which increases productivity and could decrease per unit production cost. [Lesson 4: TG pp. 37-40; SW pp. 41-43]</p>
<p>17. <i>Which is a way to increase productivity?</i></p> <p>a. <i>hiring workers</i> b. <i>training workers</i> c. <i>selling equipment</i> d. <i>decreasing wages</i></p>	<p>By definition, productivity is an increase in output per unit of input (labor). Training workers should increase their job skills, and thus increase their productivity. The other options are likely to decrease productivity, not increase it. [Lesson 4: TG pp. 38-40; SW pp. 41-43]</p>
<p>18. <i>One way to develop human capital is to:</i></p> <p>a. <i>purchase bonds.</i> b. <i>gain job experience.</i> c. <i>sell new equipment.</i> d. <i>increase worker wages.</i></p>	<p>Workers acquire many of their skills while working at their jobs. More job experience helps workers develop more job skills and contribute to the productivity of the business. None of the other options are valid ways to increase human capital. [Lesson 4: TG pp. 38-40; SW p. 43]</p>
<p>19. <i>Which is the correct general relationship between education level and unemployment?</i></p>	<p>The higher the educational attainment, the greater the level of income one can expect. Also, as people advance in their education, they are less likely to suffer unemployment. [Lesson 5: TG pp. 44-49; SW pp. 48-53]</p>
<p><u>Higher Unemployment</u></p>	<p><u>Lower Unemployment</u></p>
<p>a. <i>college graduate</i> b. <i>college graduate</i> c. <i>high school dropout</i> d. <i>high school diploma only</i></p>	<p><i>high school diploma only</i> <i>high school dropout</i> <i>college graduate</i> <i>high school dropout</i></p>

ITEM	RATIONALE
<p>20. <i>What is the opportunity cost of dropping out of school before your high school graduation?</i></p> <p><i>a. higher wages in the future</i> <i>b. freedom to do what you want right now</i> <i>c. what you earn working after you drop out</i> <i>d. no expenses for textbooks and school supplies</i></p>	<p>Opportunity cost is the next best alternative that is given up when a choice is made. Staying in school will often lead to more knowledge and skills and make a person a more valuable worker. These qualities will often give a person a better chance to earn higher wages or income. Options b, c, and d are what individuals get when they drop out of school, not what they give up. [Lesson 5: TG pp. 44-49; SW pp. 48-53]</p>
<p>THEME 3</p>	
<p>21. <i>What is the opportunity cost of saving money?</i></p> <p><i>a. the value of the interest on the savings</i> <i>b. the products that could be purchased now</i> <i>c. the possible loss of the savings in case of theft</i> <i>d. taxes that will have to be paid on the savings and earned interest</i></p>	<p>People can either save or spend money. The opportunity cost of saving money is foregoing purchasing products now. Saving for the future means giving up the chance to spend now. The other options are not correct. The value of interest is a benefit of saving, not a cost. The threat from a theft is a risk of saving, not an alternative to it. Taxes are a consequence of saving and also not an alternative choice. [Lesson 6: TG pp. 54-55; SW pp. 55-57]</p>
<p>22. <i>Juanita has a debit card, a credit card, a certificate of deposit (CD), and an automobile insurance policy. Which one of these is a savings instrument?</i></p> <p><i>a. the debit card</i> <i>b. the credit card</i> <i>c. the certificate of deposit</i> <i>d. the automobile insurance policy</i></p>	<p>A certificate of deposit is a savings instrument because interest is earned on the amount of savings on deposit in the CD. None of the other options can be considered savings instruments. A credit card is used to obtain a short-term loan to make purchases. A debit card is used similarly to a check to make payments. An automobile insurance policy provides protection for possible risks or negative events associated with driving. [Lesson 7: TG pp. 61-64; SW pp. 64-67]</p>
<p>23. <i>Sarah just inherited \$20,000. She wants to use this money for her college education in two years. Which of the following savings plans would be best for her to get the highest rate of return over the next two years, if interest rates were to fall after she invests?</i></p> <p><i>a. certificate of deposit</i> <i>b. a checking account</i> <i>c. money market account</i> <i>d. passbook savings account</i></p>	<p>A certificate of deposit has a higher interest rate than the other accounts. It generally requires that the money be kept on deposit for a specific time period to earn the fixed interest rate without a withdrawal penalty. The other accounts are more liquid and generally pay a lower rate of interest. They also generally pay a variable rate of interest rather than a fixed rate of interest. If interest rates fall, the interest paid on prior investments in these other savings instruments will fall but that will not be the case with a CD, which will pay a fixed rate of interest. [Lesson 7: TG pp. 63-64; SW pp. 66-70]</p>

ITEM	RATIONALE
<p>24. <i>What does the bank pay you for holding your savings?</i></p> <p>a. <i>loan</i> b. <i>profit</i> c. <i>interest</i> d. <i>dividend</i></p>	<p>A bank pays interest in return for the use of money that is deposited as savings at the bank. The savings depositor is actually lending money to the bank. Interest is the return paid on the loan of the savings to the bank. Profit and dividends are terms used to describe payments from ownership of a business. [Lesson 8: TG pp. 65-66, 75; SW pp. 72-74]</p>
<p>25. <i>The main difference between simple interest and compound interest is that compound interest is:</i></p> <p>a. <i>only received when you own bonds.</i> b. <i>expressed with fractions or decimals.</i> c. <i>only received when you have multiple accounts.</i> d. <i>paid on the principal and all interest previously earned.</i></p>	<p>Simple interest is interest earned on the principal and paid out to a depositor. Compound interest is interest computed on the sum of the principal and previously earned interest. Compound interest is received on many different debt instruments including savings accounts, and not just on bonds. Both simple and compound interest are expressed as fractions or decimals. Compound interest can be earned on one account. [Lesson 8: TG pp. 66-68, 74-79; SW pp. 73-74]</p>
<p>26. <i>About how many years would it take for \$100 to become \$200 if \$100 is deposited in a savings account with an interest rate of 7.2 percent?</i></p> <p>a. <i>1</i> b. <i>5</i> c. <i>10</i> d. <i>15</i></p>	<p>The Rule of 72 estimates how long it takes for money to double when it is left on deposit and interest compounds. This estimate is obtained by dividing 72 by the interest rate. In this case, 72 divided by 7.2 is 10. It will take 10 years for \$100 to become \$200 at a 7.2 percent annual interest rate. [Lesson 8: TG p. 74; SW pp. 73-74, 81]</p>
<p>27. <i>Which is true about stocks and bonds?</i></p> <p>a. <i>Stocks and bonds are both debt instruments.</i> b. <i>Stocks and bonds are both equity instruments.</i> c. <i>Stocks are debt instruments and bonds are equity instruments.</i> d. <i>Stocks are equity instruments and bonds are debt instruments.</i></p>	<p>Stocks show ownership or equity in a corporation. A firm will receive money from a stock when it is initially issued. U.S. Savings Bonds or corporate bonds, on the other hand, are debt. This means that the party issuing the bonds is borrowing the money for a period of time and will pay interest for the use of the borrowed funds until the bond expires and the borrowed funds are repaid. [Lesson 9: TG pp. 82-87; SW pp. 83-91]</p>
<p>28. <i>What are two main ways that an investor can get a return from stocks?</i></p> <p>a. <i>dividends and a government tax credit for purchasing the stock</i> b. <i>dividends and an increase in the price of the stock</i> c. <i>interest and an increase in the price of the stock</i> d. <i>dividends and interest from the stock</i></p>	<p>Stock owners receive their return in two ways. One is from the dividends they receive. The second is from selling a stock for more than the price paid for it. Stockholders never receive interest because stocks are not debt instruments. Government tax credits are not given for purchasing stock. [Lesson 9: TG pp. 82-87; SW pp. 83-91]</p>

ITEM	RATIONALE
<p>29. Which of the following is the most diversified investment?</p> <p>a. Stock mutual fund b. U.S. Savings bond c. General Motors stock d. passbook savings account</p>	<p>The most diversified investment is a stock mutual fund. Stock mutual funds typically own many stocks in the portfolio and also hold some cash, so there is less risk that a decline in any one stock will seriously hurt the portfolio. The buying of a U.S. savings bond, a share of stock in General Motors, or putting money into a savings account would be examples of single, non-diversified investments. [Lesson 9: TG pp. 85-86; SW pp. 83-86]</p>
<p>30. You buy stock in a large corporation. The risk of losing all of the money you invested in the stock is called:</p> <p>a. inflation risk. b. financial risk. c. liquidity risk. d. interest-rate risk.</p>	<p>Financial risk refers to the risk an investor faces because the price of a stock can decline or become worthless. Inflation risk is the risk that inflation will reduce the real value of the investment. The difficulty of converting investments into cash is liquidity risk. Interest-rate risk means that changes in interest rates can lower the value of an investment. [Lesson 11: TG pp. 97-104; SW pp. 99-102]</p>
<p>THEME 4</p>	
<p>31. Which form of payment for a purchase may incur fees if the balance is not paid by the due date?</p> <p>a. check b. currency c. debit card d. credit card</p>	<p>Credit cards are a form of short-term loan that may incur fees if the balance is not paid by the due date. Currency has no fees associated with it. Checks and debit cards are methods of direct payment and have no balance or due date. [Lesson 12: TG pp. 107-108; SW pp. 107-110]</p>
<p>32. Nasser used his credit card to buy a tie at The Shirt Shop for \$20. As a result of this transaction, the credit card company will:</p> <p>a. loan Nasser \$20. b. loan The Shirt Shop \$20. c. deduct \$20 from Nasser's checking account. d. deduct \$20 from The Shirt Shop's checking account.</p>	<p>When a credit card is used for a purchase, the money is loaned to the cardholder, not to the seller, to pay for the purchase. The card allows people to postpone paying for a product now and pay for it later with a payment to the credit card company using a check or electronic funds transfer. Options c and d have nothing to do with credit card transactions. A credit card company will not deduct money from a checking account for a purchase. With a debit card, money is deducted from a cardholder's checking account after a purchase. [Lesson 12: TG pp. 106-107; SW p. 109]</p>
<p>33. Inflation is the term used to describe:</p> <p>a. a decrease in interest rates. b. an increase in interest rates. c. a general increase in prices. d. a general decrease in prices.</p>	<p>Inflation is a general increase in the level of prices in an economy. The key word is "general" increase. Prices of certain products will rise and fall, but when prices rise for many goods and services, the economy is experiencing inflation. [Lesson 12: TG p.105, 120; SW p. 108, 114]</p>

ITEM	RATIONALE
<p>34. Hector bought a new television for \$500 and used his credit card to make the purchase. What is his opportunity cost from this purchase?</p> <p>a. less money for future uses b. more currency for making purchases c. the convenience of not having to carry cash d. interest that will be paid to Hector by the credit card company</p>	<p>Opportunity cost is the next best alternative that is given up when a choice is made. By purchasing the TV, Hector has less money to use in the future because he will be making payments on his credit card that will include the price of the TV and the interest cost for the borrowed money. Options b and c are what he receives after using credit. If there are unpaid balances or loans, he will pay interest to the credit card company for any loans, and will not receive interest from the company. [Lesson 12: TG pp. 105-107; SW pp. 108-109]</p>
<p>35. Character, capacity, and collateral are considered to be the three key factors:</p> <p>a. a lender uses for evaluating the risk of a loan. b. an investor uses for making a stock purchase. c. a borrower uses for determining the cost of a loan. d. a saver uses for establishing a checking account.</p>	<p>There are three Cs to credit: character, capacity, and collateral. Lenders have to be cautious when extending credit, so they look for these three characteristics. Character is judged based on a review of records of paying debts, and history of managing finances. Capacity is determined by looking at income from all sources, current debts, and net worth. Collateral is assessed by identifying assets such as cars, a house, or cash that could be obtained by the lender from a borrower. [Lesson 13: TG pp. 115-118; SW pp. 122, 132-134]</p>
<p>36. Your credit line is the:</p> <p>a. minimum amount available to borrow. b. maximum amount available to borrow. c. minimum monthly payment on a credit card. d. maximum monthly payment on a credit card.</p>	<p>Credit limit is the maximum amount a cardholder can borrow from a bank or credit card issuer. It is not the minimum amount available to borrow. Minimum and maximum monthly payments are the amount the credit cardholder pays on a credit card account. It does not refer to how much a cardholder can borrow on credit. [Lesson 13: TG pp. 116-118; SW pp. 121-122]</p>
<p>37. What will likely happen to collateral if a person fails to repay a loan?</p> <p>a. It will be loaned by the lender. b. It will be destroyed by the lender. c. It will be purchased by the lender. d. It will be repossessed by the lender.</p>	<p>Collateral is property or other valuables used as security to guarantee the repayment of a loan. The lender can claim collateral or repossess collateral if the borrower fails to repay. [Lesson 13: TG pp. 115-118; SW pp. 122, 133-134]</p>
<p>38. People with a poor credit history will usually pay a:</p> <p>a. higher inflation rate. b. higher interest rate. c. lower inflation rate. d. lower interest rate.</p>	<p>People with a poor credit history have a greater risk for default on a credit loan. To compensate for this greater risk, banks and other credit issuers charge higher interest rates on credit extended to people who have higher risk. The inflation rate focuses on the general level of prices and is not related to credit history. [Lesson 13: TG pp.117-118; SW p. 122, 132-134]</p>

ITEM	RATIONALE
<p>39. <i>Willie was lured to an electronics store that was advertising a great price for a DVD player the store knew it didn't have in stock. The clerk told him the store was out of that model, and showed him higher-priced models. What illegal marketing strategy was used in this case?</i></p> <p>a. <i>price fixing</i> b. <i>pyramid sales</i> c. <i>there and gone</i> d. <i>bait and switch</i></p>	<p>Deceptive practices are what a business may do to fool a customer and make a sale. Misleading prices, bait and switch, and false advertising are examples of deceptive and illegal practices. Bait and switch occurs when a company advertises a product at a low price as a way to get people in the store, but does not stock much of the product. The seller is "baiting" the consumer by offering a terrific sale item and then "switching" the consumer's attention to another, more expensive, product. [Lesson 14: TG pp. 122-124, 125; SW pp. 136, 149]</p>
<p>40. <i>Comparison shopping is most important when purchasing items that are:</i></p> <p>a. <i>simple and expensive.</i> b. <i>simple and inexpensive.</i> c. <i>complex and expensive.</i> d. <i>complex and inexpensive.</i></p>	<p>Comparison shopping requires time and money so the benefits need to be greater than the costs to make it worthwhile. Differences in characteristics of competing products are generally greater with items that are complex and expensive. That is why the benefits of comparison shopping typically will be greater than the costs with such items. [Lesson 14: TG pp. 121-122; SW pp. 136-137]</p>

THEME 5

<p>41. <i>For budgeting purposes, how would you classify the cost of repairing your car due to an accident?</i></p> <p>a. <i>fixed and planned expense</i> b. <i>fixed and unplanned expense</i> c. <i>variable and planned expense</i> d. <i>variable and unplanned expense</i></p>	<p>Car repairs fall under unplanned and variable categories as expenses. They are not usually foreseen, so they are unplanned. The amount of the expense can change based on the circumstances, so they are variable expenses. [Lesson 15: TG pp. 130, 133; SW pp. 153-156]</p>
<p>42. <i>A budget is a record of:</i></p> <p>a. <i>profits and losses.</i> b. <i>costs and benefits.</i> c. <i>assets and liabilities.</i> d. <i>income and expenses.</i></p>	<p>A budget offers a way to record and manage income and expenses incurred over a time period. Assets and liabilities are a statement of net worth. Profits and losses are shown on an income statement for a business. Costs and benefits are general terms and not specific to a budget. [Lesson 15: TG pp. 129-134; SW pp. 153-161]</p>
<p>43. <i>You decide that you want to save 10 percent of each paycheck. You tell your bank to place 10 percent of each paycheck into your savings account. This strategy is called:</i></p> <p>a. <i>"pay yourself first."</i> b. <i>"net worth analysis."</i> c. <i>"collateral planning."</i> d. <i>"living above your means."</i></p>	<p>"Pay yourself first" is taking a fixed percentage or amount of your income and having your bank direct deposit it into your savings account. This payment or deposit to savings is made before paying for expenses from a paycheck. [Lesson 15: TG pp. 128-131; SW p. 154]</p>

ITEM	RATIONALE
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<p>44. If Jill writes a check for \$500, but has only \$450 in her checking account, this would be an example of:</p> <p>a. a cash flow. b. an overdraft. c. a money order. d. an automatic withdrawal.</p>	<p>An overdraft is writing a check for an amount that is more than is in a checking account. This is also known as bouncing a check because the bank refuses to pay it, and it “bounces” back to the person who tried to cash it. Cash flow refers to the stream of income minus expenses. A money order is a type of check. An automatic withdrawal is a directive to a banking institution or company. [Lesson 16: TG pp. 136-138; SW pp. 162-164]</p>
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45. This is Sally’s checking account register.

Check #	Date	Item Description	Deposit	Withdrawal	Balance
	11/14/03	beginning balance			\$1800 00
400	11/15/03	Bob’s Bikes		100 00	1700 00
	11/28	paycheck	200 00		1900 00
401	12/2/03	Food Mart			

<p>If Sally writes a check for \$50 at Food Mart, what is her new balance?</p> <p>a. \$1800 b. \$1850 c. \$1900 d. \$1950</p>	<p>Sally would subtract the \$50 from the \$1900 balance and have a new balance of \$1850. [Lesson 16: TG pp. 136-140; SW p. 166]</p>
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<p>46. A debit card and a direct deposit both involve:</p> <p>a. selling and buying stocks in the marketplace. b. the securing of credit and payment of interest. c. electronic transfers to or from your checking account. d. transaction fees regardless of where the transaction occurred.</p>	<p>A debit card is like a plastic checking account: money is taken directly from it electronically when a debit card is used. Direct deposit is adding money electronically to an account. Using a debit card or a direct deposit have nothing to do with stock purchases, obtaining credit, the payment of interest, or transaction fees. [Lesson 16: TG pp. 138-140, 144; SW pp. 162-163]</p>
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<p>47. The PIN required for an ATM card and a debit card is a measure to:</p> <p>a. prevent fraudulent use of the card. b. transfer money from one account to another. c. allow you to compound interest more frequently. d. assure you make no overdrafts on your account.</p>	<p>A PIN is a Personal Identification Number, or a confidential code used to access private financial information or to make a transaction. The PIN is used as a security device to prevent any illegal or unauthorized use of a card. [Lesson 16: TG pp. 138-140; SW pp. 162, 170]</p>
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ITEM	RATIONALE
<p>48. Which is a deduction made from the wages you receive from a job?</p> <p>a. a sales tax b. an excise tax c. an income tax d. a property tax</p>	<p>An income tax is a payment made to government based on earnings or income. Every worker who earns a certain amount must pay federal income taxes. Income taxes are deducted from each paycheck, and it acts as a forced saving plan so a person has money to pay income taxes when they are due. Sales and excise taxes are applied to the price of a product that is purchased. Property taxes are assessed on the value of property, not wages. [Lesson 17: TG pp. 147-149; SW pp. 172-173]</p>
<p>49. A sales tax is a tax on:</p> <p>a. income. b. property. c. investment. d. consumption.</p>	<p>A sales tax is payment made to government based on spending or consumption. It is collected at the time the product is purchased and is usually a percentage of the price of the product. An income tax is levied on income earned, not consumption. A property tax is assessed on the value of real or personal property owned. Some investments are taxed as part of a property or income tax. [Lesson 17: TG pp. 148-149; SW p. 174]</p>
<p>50. A federal program to provide the elderly with some retirement income and to assist the minor children of a parent who has died is:</p> <p>a. Social Security. b. food stamps. c. Medicare. d. Medicaid.</p>	<p>Social Security contributions are redistributed to retired persons who have worked long enough to become eligible. They are also used to pay benefits to people who are disabled and to minor children of a parent who has died. Food stamps, Medicare, and Medicaid are also government programs, but focus on other needs and not on retirement income or direct assistance for minor children of a parent who has died. [Lesson 17: TG pp. 150-151; SW p. 174]</p>

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Appendix 3. National Standards in Personal Finance

■ INCOME

1. Sources of income
2. Determinants of income
3. Taxes and transfer payments

■ MONEY MANAGEMENT

1. Limited financial resources and choices
2. The opportunity cost of financial decisions
3. Responsibility for financial decisions
4. The decision-making process in financial choices
5. Inflation and spending and investing decisions
6. Insurance and other risk-management strategies
7. Plan for earning, spending, saving, and investing
8. Use of money-management tools

■ SPENDING AND CREDIT

1. Benefits and costs of spending decisions
2. Information about products and services
3. Advantages and disadvantages of payment methods
4. Benefits and costs of consumer credit
5. Sources of consumer credit
6. Credit history and records
7. Identify ways to avoid or correct credit problems
8. Describe the rights and responsibilities of buyers and sellers under consumer protection laws

■ SAVING AND INVESTING

1. Explain the relationship between saving and investing
2. Describe reasons for saving and reasons for investing
3. Compare the risk, return, and liquidity of investment alternatives
4. Describe how to buy and sell investments
5. Explain how different factors affect the rate of return of investments
6. Evaluate sources of investment information
7. Explain how agencies that regulate financial markets protect investors

Source: Jump\$tart Coalition (2002).

Appendix 4. Voluntary National Content Standards in Economics

1. Productive resources are limited. Therefore, people can not have all the goods and services they want; as a result, they must choose some things and give up others.

2. Effective decision making requires comparing the additional costs of alternatives with the additional benefits. Most choices involve doing a little more or a little less of something: few choices are "all or nothing" decisions.

3. Different methods can be used to allocate goods and services. People acting individually or collectively through government, must choose which methods to use to allocate different kinds of goods and services.

4. People respond predictably to positive and negative incentives.

5. Voluntary exchange occurs only when all participating parties expect to gain. This is true for trade among individuals or organizations within a nation, and usually among individuals or organizations in different nations.

6. When individuals, regions, and nations specialize in what they can produce at the lowest cost and then trade with others, both production and consumption increase.

7. Markets exist when buyers and sellers interact. This interaction determines market prices and thereby allocates scarce goods and services.

8. Prices send signals and provide incentives to buyers and sellers. When supply or demand changes, market prices adjust, affecting incentives.

9. Competition among sellers lowers costs and prices, and encourages producers to produce more of what consumers are willing and able to buy. Competition among buyers increases prices and allocates goods and services to those people who are willing and able to pay the most for them.

10. Institutions evolve in market economies to help individuals and groups accomplish their goals. Banks, labor unions, corporations, legal systems, and not-for-profit organizations are examples of important institutions. A different kind of institution, clearly defined and enforced property rights, is essential to a market economy.

11. Money makes it easier to trade, borrow, save, invest, and compare the value of goods and services.

12. Interest rates, adjusted for inflation, rise and fall to balance the amount saved with the amount borrowed, which affects the allocation of scarce resources between present and future uses.

13. Income for most people is determined by the market value of the productive resources they sell. What workers earn depends, primarily, on the market value of what they produce and how productive they are.

14. Entrepreneurs are people who take the risks of organizing productive resources to make goods and services. Profit is an important incentive that leads entrepreneurs to accept the risks of business failure.

15. Investment in factories, machinery, new technology, and in the health, education, and training of people can raise future standards of living.

16. There is an economic role for government in a market economy whenever the benefits of a government policy outweigh its costs. Governments often provide for national defense, address environmental concerns, define and protect property rights, and attempt to make markets more competitive. Most government policies also redistribute income.

17. Costs of government policies sometimes exceed benefits. This may occur because of incentives facing voters, government officials, and government employees, because of actions by special interest groups that can impose costs on the general public, or because social goals other than economic efficiency are being pursued.

18. A nation's overall levels of income, employment, and prices are determined by the interaction of spending and production decisions made by all households, firms, government agencies, and others in the economy.

19. Unemployment imposes costs on individuals and nations. Unexpected inflation imposes costs on many people and benefits some others because it arbitrarily redistributes purchasing power. Inflation can reduce the rate of growth of national living standards because individuals and organizations use resources to protect themselves against the uncertainty of future prices.

20. Federal government budgetary policy and the Federal Reserve System's monetary policy influence the overall levels of employment, output, and prices.

Source: NCEE (1997).

Appendix 5. FFFL Student Objectives by Lesson and Theme: Middle School

Test Items

THEME 1: There is No Such Thing as a Free Lunch (The Economic Way of Thinking)

LESSON 1 — The Economic Way of Thinking

- S1. *Explain how limited resources necessitate choices* 1, 2
- S2. *Identify the costs and benefits of a choice*
- S3. *Define opportunity costs* 3, 4
- S4. *Identify and evaluate incentives* 5
- S5. *Analyze choices and predict consequences* 6

LESSON 2 — Consumer Decision Making

- S1. *Explain the purpose of a decision-making plan* 7
- S2. *Analyze a problem, using the PACED decision-making process* 8, 9
- S3. *Explain why some criteria have more weight than others when using the decision-making process* 10

THEME 2: Education Pays Off: Learn Something (Earning Income)

LESSON 3 — Career Choice Making

- S1. *Examine projected demand for a variety of occupations in relation to one's interests*
- S2. *Analyze how human capital is related to career choices and opportunities* 11
- S3. *Recognize the importance of investment in human capital*
- S4. *Explain the relationship of worker productivity to education and experience* 12
- S5. *Describe the characteristics of an entrepreneur* 13
- S6. *Explain how entrepreneurs benefit the economy* 14

LESSON 4 — Productivity

- S1. *Give examples of capital resources used in various careers* 15
- S2. *Explain in what ways the use of capital resources increases productivity* 16
- S3. *Explain ways in which productivity can be increased* 17
- S4. *State the human capital required for particular jobs*
- S5. *Explain how those skills are acquired* 18

LESSON 5 — Why Stay in School?

- S1. *Explain the benefits associated with levels of educational attainment*
- S2. *Explain the costs associated with levels of educational attainment* 19
- S3. *Define opportunity cost and explain the opportunity cost of dropping out of school* 20

Appendix 5. FFFL Student Objectives by Lesson and Theme: Middle School (continued)

Test Items

THEME 3: Tomorrow's Money: Getting to the End of the Rainbow (Saving)

LESSON 6 — Why Save?

- S1. *Recognize the importance of goal-setting*
- S2. *Define short-term, medium-term, and long-term goals*
- S3. *Use math to project savings goals*
- S4. *Identify the opportunity cost of saving* 21

LESSON 7 — Types of Savings Plans

- S1. *Define savings instruments* 22
- S2. *Name the advantages and disadvantages of various savings instruments*
- S3. *Select a savings instrument which best meets one's needs at a particular time* 23
- S4. *Explain why it is important to shop around for savings instruments*

LESSON 8 — Who Pays and Who Receives?

- S1. *Explain how banks make a profit* 24
- S2. *Calculate simple and compound interest*
- S3. *Explain the opportunity cost of not allowing interest to compound; explain the opportunity cost of not taking interest as it is earned*
- S4. *Analyze the difference between simple and compound interest* 25
- S5. *Explain the factors that affect how money grows*
- S6. *Apply the Rule of 72* 26

LESSON 9 — Stocks and Mutual Funds

- S1. *Explain that stocks are ownership in a corporation* 27
- S2. *Explain the risk associated with stock ownership*
- S3. *Compare and contrast an investment in stocks with an investment in savings plans*
- S4. *Explain two ways in which stocks provide a return to owners* 28
- S5. *Differentiate between the primary and secondary markets for stocks*
- S6. *Define mutual funds and cite different types*
- S7. *Define diversification* 29

Appendix 5. FFFL Student Objectives by Lesson and Theme: Middle School (continued)

Test Items

LESSON 10 — Let Lenders and Borrowers Be

- S1. *Define and describe the different types of financial intermediaries*
- S2. *State that the price of money is interest and explain that the rate of interest is determined by supply and demand*
- S3. *State the functions of institutional investors operating in the stock market*
- S4. *State the opportunity cost incurred by savers, borrowers, stockholders, corporations issuing stocks, and banks*

LESSON 11 — Saving and Investing Are Risky Business

- S1. *Explain that all savings plans and investments carry risk*
- S2. *Match the types of risk with the savings plans and investments* 30
- S3. *State the opportunity cost associated with saving and investment*

THEME 4: Spending and Credit Are Serious Business (Spending and Using Credit)

LESSON 12 — Cash or Credit?

- S1. *Differentiate between forms of cash payment and credit* 31, 32
- S2. *Compare the advantages and disadvantages of using credit* 33
- S3. *Explain how interest is calculated*
- S4. *Analyze the opportunity cost of using credit and various forms of cash payments* 34

LESSON 13 — Establishing Credit

- S1. *Define the three “Cs” of credit* 35
- S2. *Explain borrowers’ rights when obtaining credit* 36
- S3. *Explain borrowers’ rights when managing credit* 37
- S4. *Describe ways a young person may establish credit* 38

LESSON 14 — Comparison Shopping

- S1. *State the seven steps in a purchase-making decision*
- S2. *Explain why each step is important*
- S3. *Make a purchase decision using the seven steps and the decision-making grid*
- S4. *Describe three illegal or deceptive practices found in the marketplace* 39
- S5. *Name the advantages and disadvantages of comparison shopping* 40
- S6. *Name at least two not-for-profit or government agencies who will help the consumer*

Appendix 5. FFFL Student Objectives by Lesson and Theme: Middle School (continued)

Test Items

THEME 5: Get a Plan: Get a Grip on Life (Money Management)

LESSON 15 — Managing Cash

S1. *Distinguish between fixed and variable expenses as well as planned and unplanned expenses* 41

S2. *Record and analyze one’s expenses*

S3. *Develop a budget* 42

S4. *Evaluate how well a budget is kept based on expenses and income for a period* 43

LESSON 16 — Choosing and Using a Checking Account

S1. *Identify major features, benefits, and costs of checking accounts*

S2. *Explain the responsibilities of having a checking account* 44

S3. *Write a check correctly* 45

S4. *Describe ATM cards, debit cards, direct deposit, and automatic withdrawals* 46

S5. *Identify safety precautions when using ATM machines* 47

LESSON 17 — What Taxes Affect You?

S1. *Define and explain income, property, and sales taxes* 48, 49

S2. *Explain what goods and services government provides at the local, state, and federal levels* 50

S3. *Explain why government provides some goods and services, but not others*

Appendix 6. Answer Form and Scoring Key, FFFL Middle School Test

Answer Form

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

RAW SCORE

PERCENTILE SCORE

NAME _____ DATE _____
month day year

AGE _____ DATE OF BIRTH _____ SEX M F
month day year (circle one)

SCHOOL OR TEST CENTER _____

ADDRESS _____
number and street city state zip

INSTRUCTOR _____ GRADE OR YEAR _____ SEMESTER _____

Appendix 6. Answer Form and Scoring Key, FFFL Middle School Test (Continued)

Scoring Key

1	A B C D ○ ○ ● ○	11	A B C D ● ○ ○ ○	21	A B C D ○ ● ○ ○	31	A B C D ○ ○ ○ ●	41	A B C D ○ ○ ○ ●
2	A B C D ● ○ ○ ○	12	A B C D ○ ● ○ ○	22	A B C D ○ ○ ● ○	32	A B C D ● ○ ○ ○	42	A B C D ○ ○ ○ ●
3	A B C D ○ ○ ● ○	13	A B C D ○ ○ ● ○	23	A B C D ● ○ ○ ○	33	A B C D ○ ○ ● ○	43	A B C D ● ○ ○ ○
4	A B C D ○ ○ ● ○	14	A B C D ○ ○ ○ ●	24	A B C D ○ ○ ● ○	34	A B C D ● ○ ○ ○	44	A B C D ○ ● ○ ○
5	A B C D ○ ● ○ ○	15	A B C D ○ ○ ● ○	25	A B C D ○ ○ ○ ●	35	A B C D ● ○ ○ ○	45	A B C D ○ ● ○ ○
6	A B C D ● ○ ○ ○	16	A B C D ○ ○ ○ ●	26	A B C D ○ ○ ● ○	36	A B C D ○ ● ○ ○	46	A B C D ○ ○ ● ○
7	A B C D ○ ○ ○ ●	17	A B C D ○ ● ○ ○	27	A B C D ○ ○ ○ ●	37	A B C D ○ ○ ○ ●	47	A B C D ● ○ ○ ○
8	A B C D ○ ● ○ ○	18	A B C D ○ ● ○ ○	28	A B C D ○ ● ○ ○	38	A B C D ○ ● ○ ○	48	A B C D ○ ○ ● ○
9	A B C D ○ ○ ○ ●	19	A B C D ○ ○ ● ○	29	A B C D ● ○ ○ ○	39	A B C D ○ ○ ○ ●	49	A B C D ○ ○ ○ ●
10	A B C D ○ ○ ● ○	20	A B C D ● ○ ○ ○	30	A B C D ○ ● ○ ○	40	A B C D ○ ○ ● ○	50	A B C D ● ○ ○ ○



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