



# COMPASS<sup>®</sup>

Guide to Enhancing  
Developmental Education  
with COMPASS<sup>®</sup>  
Diagnostics

Setting the Right Course for College Success

---

ACT<sup>®</sup>

## **Contents**

Introduction _____	3
COMPASS™ Diagnostics and Models for Usage _____	5
1. Placement / Diagnostic Combination Test Package	
2. Independent Diagnostic Test Package	
3. Imbedded in Developmental Courses	
Identifying Students in Need of Developmental Education _____	7
1. On-Campus Orientation	
2. High School Outreach	
3. Remote Testing	
Creating a Diagnostic Test Package with Prescriptive Messages _____	9
Step 1. Provide the Test Data Used by Test Packages	
Step 2. Create the Diagnostic Test Package	
Step 3. Specify Demographic Items	
Step 4. Specify Local Measures	
Step 5. Create Prescriptive Messages for Each Designated Score Range	
Measuring Student Improvement _____	21



## Introduction

It has been estimated that more than 40 percent of students entering college for the first time are in need of developmental education. This creates an enormous burden on colleges and a demand for tools to help make developmental education programs as effective and efficient as possible. That is where COMPASS™ Diagnostic Tests can help.

Unlike COMPASS Placement Tests, which are designed to help admissions and advising personnel accurately place students into courses appropriate to their skill levels, the COMPASS Diagnostic Tests help verify the strengths and weaknesses of borderline and at-risk students in specific subject areas. With this extra information, developmental educators can formulate appropriate interventions to help these students achieve their academic goals.

Specifically, COMPASS Diagnostics are designed to help you:

- **Determine Students' Developmental Needs Quickly and Accurately** — As a Web-based, computer-adaptive assessment, COMPASS reduces the number of test items and time spent testing, while maintaining a high degree of accuracy. Students' score reports are available immediately after testing. Customizable routing rules allow you to route marginal students from placement tests directly into diagnostic tests, eliminating the need for re-testing at a later date.
- **Create Diagnostic Tests to Match Your Students' Developmental Needs** — COMPASS allows you to create unique test packages that cover specific subject areas, and align with your developmental curriculum. The software allows you to establish your own cut-off scores and create appropriate diagnostic messages that inform students of recommended interventions and support services available to them.
- **Enhance Academic Advising** — COMPASS includes an optional demographics section that provides your academic advisors with a comprehensive understanding of your students' backgrounds and academic support needs.
- **Reach Students Before They Arrive on Campus** — As an Internet-based assessment, COMPASS can be used in high school outreach programs. The COMPASS Internet National Remote Testing Network allows you to administer COMPASS diagnostic tests at over 500 proctored test sites across the country. Early intervention helps reduce the need for developmental coursework once students are enrolled.
- **Evaluate Developmental Program Impact** — The COMPASS program offers post-testing to help you document the performance gain of students who participated in a developmental program.

This guide is intended to address the key assessment and advising needs of developmental educators, and demonstrate how the COMPASS program can be customized and used to greatest effect. The guide features actual screen shots from the COMPASS software with explanatory text and it takes you through each step with specific examples.

If you would like additional information on COMPASS diagnostics, please visit our Web site at [www.act.org/compass](http://www.act.org/compass), or contact one of our regional COMPASS representatives listed on the back of this guide.



## **COMPASS Diagnostics and Models for Usage**

COMPASS offers a total of 26 diagnostic tests. Each diagnostic test is adaptive (generally administering about 8 to 12 items in a specific content area). Results are reported on a scale of 0–99, representing the percent of items in that specific content area that the student is estimated to be able to answer correctly. COMPASS offers seven diagnostic tests in Pre-Algebra, eight in Algebra, three in Reading, and eight in Writing Skills, as shown in the table below.

<b>Pre-Algebra</b>	<b>Algebra</b>	<b>Reading</b>	<b>Writing Skills</b>
Integers	Substitution	Vocabulary	Punctuation
Fractions	Setting Up Equations	Comprehension	Spelling
Decimals	Basic Operations / Polynomials	Reader Profile	Capitalization
Exponents, Square Roots, and Scientific Notation	Factoring Polynomials		Usage
Ratios and Proportions	Linear Equations / One Variable		Verb Formation / Agreement
Percentages	Exponents and Radicals		Relationships of Clauses
Averages	Rational Expressions		Shifts in Construction
	Linear Equations / Two Variables		Organization

(For more detailed information on the COMPASS diagnostic tests, please refer to Chapters 5 through 7 of the COMPASS Reference Manual.)

As you become more familiar with the COMPASS program, you will discover that it offers a rich set of features with a great degree of flexibility, so that you can customize your assessments to meet the specific needs of your institution’s developmental education program. For instance, the COMPASS Diagnostic Tests can also include an extensive demographics section to provide a comprehensive picture of your students’ backgrounds and needs.

### **There are three basic models for using COMPASS Diagnostics:**

#### **1. Placement / Diagnostic Combination Test Package**

Institutions that use COMPASS Placement Tests can route borderline students directly into Diagnostics, thereby providing a more detailed picture of a student’s ability levels in specific content areas and avoiding the need for additional testing at a later date.

For example, a student who scores 35 to 45 on the COMPASS Pre-Algebra Placement Test could be assigned a diagnostic test covering Pre-Algebra Basic Operations (Integers, Fractions, and Decimals). The Standard Individual Report for this student will show both the Pre-Algebra Placement Test score and the resulting Course Placement Message. The scores the student attained on each Pre-Algebra diagnostic test will also be specified, along with the prescriptive recommendations for each diagnostic.

Students scoring above the level specified by the college for activating the diagnostics will not be tested with the diagnostics. While this “instant” approach will lengthen the testing experience for the particular student, all testing will be accomplished in a single session,

and the student will see the full set of college recommendations on his/her Standard Individual Report.

### **1. Independent Diagnostic Test Package**

In this model, advisors or admissions personnel have previously identified at-risk students in need of developmental coursework, and those students are given Diagnostic Tests only. The institution will determine which specific content areas are to be evaluated by selecting the diagnostics to include in a test package. Students will receive a score and prescriptive message for each diagnostic measure included in the test package.

### **2. Imbedded in Developmental Courses**

Teachers of developmental courses frequently administer diagnostic tests to their students to identify their strengths and weaknesses, and develop customized study plans that map to the students' developmental needs. In many cases the diagnostic test will be administered at the beginning and end of the course to document the students' performance gain and demonstrate they are ready to proceed to the next level. The COMPASS program includes a post-test feature, and each post-test costs only one half-unit each.

## **Identifying Students in Need of Developmental Education**

A convenient way to identify students in need of developmental education is to evaluate their scores on the Explore, Plan, ACT, or COMPASS Placement tests in relation to the ACT College Readiness Benchmarks, i.e. the minimum test scores required for students to have a high probability of success in credit-bearing college courses.

<b>Subject Area</b>	<b>ACT College Readiness Benchmarks</b>			
	<b>Explore</b>	<b>Plan</b>	<b>ACT</b>	<b>COMPASS</b>
English / Writing Skills	13	15	18	77
Math	17	19	22	52*
Reading	15	17	21	88

\* COMPASS Algebra Test

It would be helpful to have those students who score below the benchmark in a particular subject area take COMPASS diagnostic tests to determine what type of developmental intervention would be most appropriate for them.

The COMPASS software offers three options for administering diagnostic tests: on-campus testing, high school outreach programs, or the COMPASS Internet National Remote Testing Network.

### **1. On-Campus Diagnostic Testing**

Most colleges administer diagnostic tests to their borderline or at-risk students on campus at their college testing center. The COMPASS tests must always be given in a proctored environment. Test results and prescriptive messages are available immediately upon completion of testing.

### **2. High School Outreach**

High School Outreach Programs are increasingly being used by large numbers of community colleges to help high school students transition from high school to college. These types of programs have been proven as an effective means of increasing college-going rates and helping students better prepare for college. There are three standard models for high school outreach:

- **Early Intervention** — where high school sophomores or juniors are informed of the educational and career opportunities available to them, and evaluated as to their readiness for college-level work. Early intervention helps students become better prepared while they are still in high school, thereby reducing the need for developmental work after they enroll in college.
- **Dual Enrollment** — where qualified high school juniors and seniors can take college-level courses while still in high school.
- **College Transition** — where high school seniors receive college orientation and take placement and/or diagnostic tests so they can pre-register for appropriate college courses.



### 3. Remote Testing

The COMPASS Internet National Remote Testing Network is a nationwide network of more than 500 proctored, remote test sites that allows you to test your in-coming students (including the use of the diagnostics as desired) wherever they happen to be physically located. Borderline and at-risk students can be advised of what type of “brush-up” work may help them avoid developmental courses once they enroll.

For additional information on how COMPASS can be used in High School Outreach programs, please contact ACT for a free copy of the ***COMPASS Guide to Successful High School Outreach***. To learn more about Remote Testing for Distance Students, please contact ACT for a free copy of the ***COMPASS Internet National Remote Network Guide***

## **Creating a Diagnostic Test Package with Prescriptive Messages**

Once you have identified the borderline and at-risk students who may need developmental work, you will need a more detailed understanding of their ability levels in specific content areas before you can develop an appropriate developmental plan.

COMPASS offers seven diagnostics in Pre-Algebra, eight in Algebra, three in Reading, and eight in Writing Skills. Each diagnostic can be eight to 12 questions in length, so in most cases it would not be practical to have a student take all of the diagnostics in one content domain. A better approach would be to develop diagnostic test packages limited to two or three diagnostics and assign students to take specific diagnostic test packages based on their placement test results. For example, students scoring below 40 on the COMPASS Pre-Algebra Placement Test could be assigned a diagnostic test covering Pre-Algebra Basic Operations (Integers, Fractions, and Decimals).

In addition to the diagnostic measures, COMPASS allows you to develop a thorough understanding of students' background characteristics, which can be used to recommend development interventions that match specific needs. COMPASS also allows you to tailor messages to the students during testing and in their score reports, so that the most appropriate information goes directly to the students to prescribe developmental interventions.

The basic procedure to develop a Diagnostic Test Package entails a five-step process:

Step 1 - Provide the Data Used by Test Packages

Step 2 - Create the Diagnostic Test Package

Step 3 - Specify Demographic Items




Step 4 - Specify Local Measures

Step 5 - Create Prescriptive Messages for Each Designated Score Range

Each of these steps is explained in detail in the following sections.

Step 1: Provide the Data Used by Test Packages

The first step is to provide the data used by test packages. There are seven data fields that you need to fill in. Each is summarized as follows:

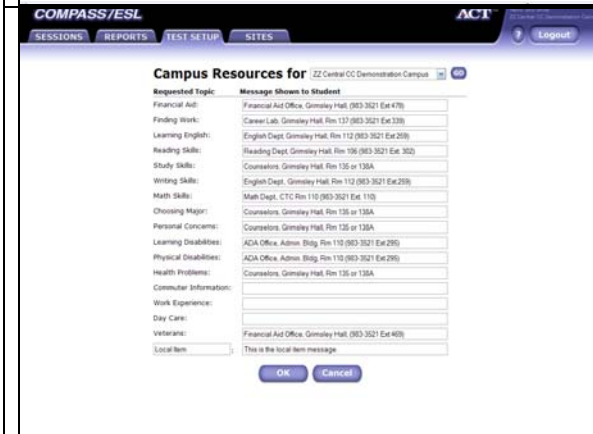
 <p>The screenshot shows the 'TEST SETUP' tab in the COMPASS/ESL interface. On the left, there is a sidebar menu with options: 'Test Packages', 'Placement Messages', 'Diagnostic Messages', 'Local Measures', and 'Import Test Setup'. The main content area is titled 'Data used by Test Packages' and lists several data fields: 'Bulletin Boards', 'Majors &amp; Major Groups', 'Local Demographic Items', 'Multiple Choice', 'Numeric Response', 'Campus Resources', 'Transfer Institutions', and 'High Schools'.</p>	<p>In the “Test Setup” tab, refer to the items under the heading “Data Used by Test Packages.”</p>
 <p>The screenshot shows the 'Bulletin Boards for' page in the COMPASS/ESL interface. It features a search bar with 'ZZ Central CC Demonstration Campus' selected. Below the search bar, there are buttons for 'New...', 'Preview', and 'Delete'. A 'Back to Test Setup' button is located at the bottom of the page.</p>	<p>Bulletin Boards are messages you create that can be shown to students before and/or after they take a test package.</p>
 <p>The screenshot shows the 'Majors &amp; Major Groups for' page in the COMPASS/ESL interface. It features a search bar with 'ZZ Central CC Demonstration Campus' selected. Below the search bar, there is a list of majors and major groups, including 'General Recommendations (Major Group)', 'Nursing (20000)', 'Liberal Studies (20000)', 'ACCOUNTING (AA OPTION) (24010)', 'ACCOUNTING (AS OPTION) (24010)', 'ACCOUNTING TECHNOLOGY (24010)', 'ADULT BASIC EDUCATION (10000)', 'ADULT LITERACY (PRISON ONLY) (10000)', 'AGRICULTURE (24100)', 'AGRICULTURE (24104)', 'ARTS CONDITIONING / HEATING (10201)', 'ANIMAL SCIENCE (AS OPTION) (24100)', and 'ANIMAL SCIENCE (AS OPTION) (24106)'. There are buttons for 'New...', 'Edit...', and 'Delete'. A 'Back to Test Setup' button is located at the bottom of the page.</p>	<p>Majors and Groups of Majors allow you to create a list of majors students can use to identify themselves with when they take the COMPASS test.</p>



Local Demographic Items: Multiple Choice - allows you to add items to help describe characteristics of your students that are unique to your college.



Local Demographic Items: Numeric Response - allows you to add items to help describe characteristics of your students that are unique to your college.



The "Campus Resources for" page allows you to ask students if they would like to receive information on a variety of services available at your institution. This information is included in a student's Standard Individual Report.



The "Transfer Institution for" page allows you to list all transfer institutions from which students can select in the demographics section.

	<p>The “High Schools for” page allows you to list all high schools from which students can select in the demographics section.</p>
--	--

**Step 2: Create the Diagnostic Test Package**

The second step is to create the diagnostic test package by specifying which content areas to include. The procedure is outlined as follows:

	<p>In the “Test Setup” tab, click “Test Packages.”</p>
	<p>In the “Test Packages for” window, click “New.”</p>

In the “New Test Package” window, select the “Math Diagnostics Only” radio button, then click “Continue.”

In the “Setup Test Package” window you will name the diagnostic test package, select demographic questions to be included, select which diagnostics to administer, activate the feature to automatically print Standard Individual Reports, and select which test centers can administer this test package. More advanced features are available as well.

Be sure to give the new diagnostic test package a concise, descriptive name. In this case we will name the test package “Pre-Algebra Basic Operations Diagnostics.”

Under the “Before Each Test Session” heading you can select which demographic questions to include in the test. A screen will open with a list of standard demographic items. Review this list carefully and select those items that will be most helpful to meet the students’ developmental needs. Once you have made your selections, click “OK” and the software will take you back to the Setup Test Package page.

Under the “Tests to Administer” heading, select the diagnostic tests you wish to administer. In this case we will select Integers, Fractions, and Decimals. You can also specify the length of each diagnostic (8, 10, or 12 questions).

Under the “After Each Test Session” heading you can specify whether you want to automatically print the Standard Individual Reports, and at which Test Centers the test package may be administered. When finished, click “OK.”



The new test package will now appear in the list of test packages you can choose from in the “Test Package For” window.

### Step 3: Specify Demographic Items

The third step is to determine which demographic items to include in the test package. Demographic items can be administered before or after the diagnostic tests.



From the “Test Setup” window, click “Test Packages.”



Select the test package you already created—in this case “Pre-Algebra Basic Operations Diagnostics”—and click “Edit.”

	<p>You can design the test to ask demographic questions before or after the test session. In this case we have elected to ask them before the test session. To select which demographic questions to ask, click “Select Questions.”</p>
	<p>A list of the demographic items will appear. Simply select those items you wish to include in the test.</p>

## Demographic Items

To help you plan ahead for which demographic items to include, the following lists all of the categories and items. It is critical to consider why you need each item, and how the information will be used.

### 1. General Information

Required Questions: Name, Date of Birth, Student ID, Gender, Ethnicity  
 Is English your first (primary) language?  
 Address: Street, City, State, ZIP  
 Telephone Number  
 E-mail address

### 2. For ESL Students Only

What is your first language?  
 Have you ever studied English? Where and for how many years?  
 Do you have a high school degree? If so, from where?  
 Do you have a college degree from another country? If so, from where?  
 Do you usually speak English at home?

### 3. High School

What kind of high school certificate did you receive? During what year did (or will) you complete high school or equivalent? From which high school did (or will) you receive your certificate?  
 In what range was your overall high school grade point average?



For each subject, enter number of years studied and last grade received during high school: (subjects listed: English, Business Math, Algebra, Calculus, Science, Foreign Language, Computer Skills, Vocational Skills)

4. After High School

How many quarter and semester college credits have you earned since high school?  
What is the highest level of education you have earned since high school? [if any]  
From which institution did (or will) you receive a Certificate or Diploma?  
For each subject, enter number of years studied and last grade received after high school: (subjects listed: English, Business Math, Algebra, Calculus, Science, Foreign Language, Computer Skills, Vocational Skills)

5. Current Enrollment

For which term and year do you plan to enroll? When do you plan to take most of your classes? [Day, Evening, or Both] How many credits do you plan to take?  
What is the average grade you expect to receive during your next term?  
What is your educational program or major? How sure are you?  
Which of the following is the most important reason for attending classes this term?  
Do you plan to earn a certificate or degree at this institution?

6. Extracurricular Activities

Are you a veteran?  
How many hours a week do you plan to work while attending school?

7. Future Plans

How much education do you plan to obtain?  
If you are planning to transfer, what kind and which institution or college might this be?  
What is your interest region (from the ACT or DISCOVER®)?  
What is your career goal? How sure are you?

8. Campus Resources Setup Resource Messages

Financial Aid	Learning Disabilities
Finding Work	Physical Disabilities
Learning English	Health Problems
Reading Skills	Commuter Information (No Message has been set up)
Study Skills	Work Experience (No Message has been set up)
Writing Skills	Day Care (No Message has been set up)
Math Skills	Veterans
Choosing Major	Local Item
Personal Concerns	

9. Local Items

Numerical Response (NR) items (up to 9)  
Multiple Choice (MC) items (up to 30)



## 10. Release of Information

Ask for authorization to release this information and assessment results to student's High School.

Ask for authorization to release this information and assessment results to other Post-Secondary Institutions.

### Step 4: Specify Local Measures

The fourth step is to include any local measures that your institution has employed and feels would be helpful in identifying students' developmental needs. For example, if your institution has administered a locally-developed test and you would like these results included on the students' COMPASS Diagnostics report, you can include it as a local measure.

	<p>Local Measures allow you to use the scores from tests or measures that are not a part of COMPASS to determine student placement. Examples of local measures include a student's score from a campus-created test, high school GPA, or ACT scores.</p>
	<p>Assign the local measure a concise, descriptive name. You will also need to fill in the mean and standard deviation for the local measure.</p>

## Step 5: Create Prescriptive Messages for Each Designated Score Range

The final step is the assignment of diagnostic prescriptive messages for each designated score range. These messages will appear on each student's score report. A common practice is to assign three levels of messages to students for each diagnostic. Each message should include references to specific units or chapters of educational materials (such as a developmental text book, PLATO, etc.) to help develop needed skills. Suggestions can also be made regarding the location of campus academic support services, Web-based tutorials, and other resources. Cut scores for the three levels are locally determined (although the following suggestions may be helpful as possible starting points):

### Low-range (0 – 40)

Fully work through the related units/chapters; use the high school or college learning center tutoring services.



### Mid-range (41 – 75)

Take chapter quiz in the related units/chapters; work through sections needing review; use the high school or college learning center-tutoring services.

### Upper-range (76 – 100)

Review materials or go on to next area needing additional work.

The basic procedure for assigning diagnostic prescriptive messages follows:

	<p>From the “Test Set Up” window, select “Diagnostic Messages.”</p>
	<p>In the “Diagnostic Messages” window, select the diagnostic test package for which you wish to establish messages, then click “Edit.”</p>

	<p>You can specify the score ranges and diagnostic prescription. Click “OK” when finished. It is a good idea to monitor the performance of students assigned to each score range and make adjustments as needed over time.</p>
--	--

After you have completed these five steps, your test package is complete and you are ready to begin testing students. The new test package will automatically appear on the COMPASS test launcher located on the workstations’ desktops.

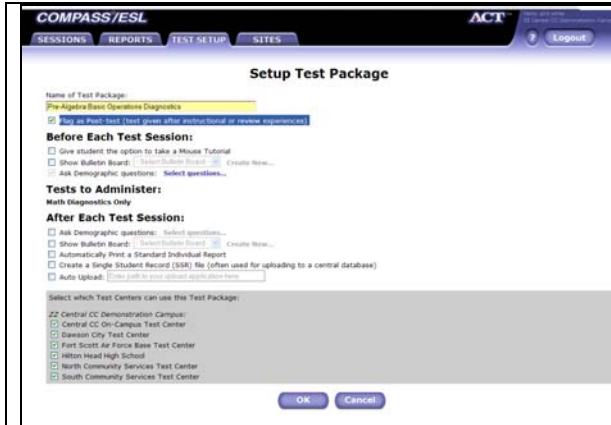
The COMPASS program can be set up to print the students’ score reports immediately upon completion of testing. The Standard Individual Report includes the student’s identification, background and education plans, local demographic items, help requested, choice of programs, and diagnostic scores with prescriptive messages. Academic advisors may share the results with their students and review the prescriptive recommendations with them in detail.

In those cases where it is not possible to review the diagnostic test results with the students in person, advisors may still get in touch with their developmental students by using the Reports tab in the COMPASS software to generate a list of students’ contact information (including e-mail addresses) or mailing labels.



## Measuring Student Improvement

Many institutions wish to post-test their students to measure how much their skills have improved as a result of the developmental intervention. With COMPASS this is a simple procedure, and post-tests only cost half a unit per test.

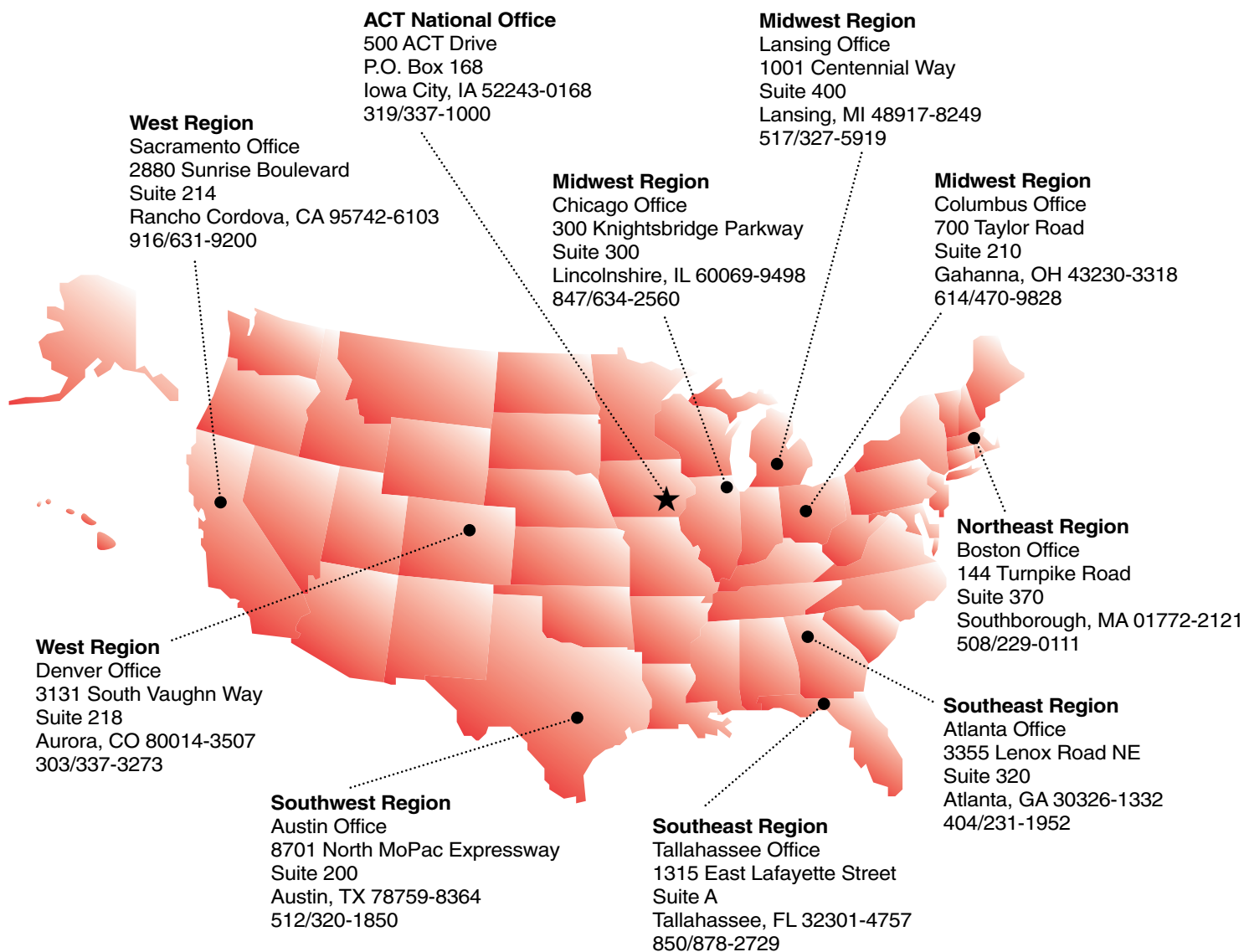


In the "Setup Test Package" window, select the "Flag as Post-test (test given after instructional or review experiences)" option under the "Test Package Name."

To help with overall program evaluation, COMPASS offers the Entering Student Descriptive Report, which describes the characteristics, needs, plans, and skills of students. This report is available free of charge, and it includes options for creating subgroup reports for smaller groups of students of special interest.

# ACT Offices

## Postsecondary Services—Assessment Programs



ACT is an independent, not-for-profit organization that provides assessment, research, information, and program management services in the broad areas of education and workforce development. Each year we serve millions of people in high schools, colleges, professional associations, businesses, and government agencies, nationally and internationally. Though designed to meet a wide array of needs, all ACT programs and services have one guiding purpose—helping people achieve education and workplace success.

Contact your regional office to find out how to put ACT solutions and services to work for you.

Visit ACT's website at [www.act.org](http://www.act.org).

