A New Model for Remediation and Student Success

Dr. Jan Case, Jacksonville State University

The problem of readiness

Nearly half of all incoming college students are not ready for college-level math or English.

Most of these students will not graduate.

Think Different

We asked our selves: how can we reduce barriers to readiness and completion?

And…increase the focus on student success…not just placement.

Think Different

Traditional Placement	
Cut scores – pass/fail	Target scores with a way to improve
One-time assessment	Unlimited 12 month use to improve
Focus on placement	Focus on readiness, and completion
High stakes placement exams	Low-stakes non proctored diagnostic exam with customized study path
Another gate for students	A way to bridge gaps without delay

We wanted a student success and learning tool… not simply a placement tool

- Step 1: Inventory/diagnose math (19) (also just added English (10) skills diagnosed)
- Step 2: Follow customized path to readiness
  - Target Score or better = college ready = no study path needed
  - Any other scores = personalized study path = chance to retest to demonstrate mastery of skill

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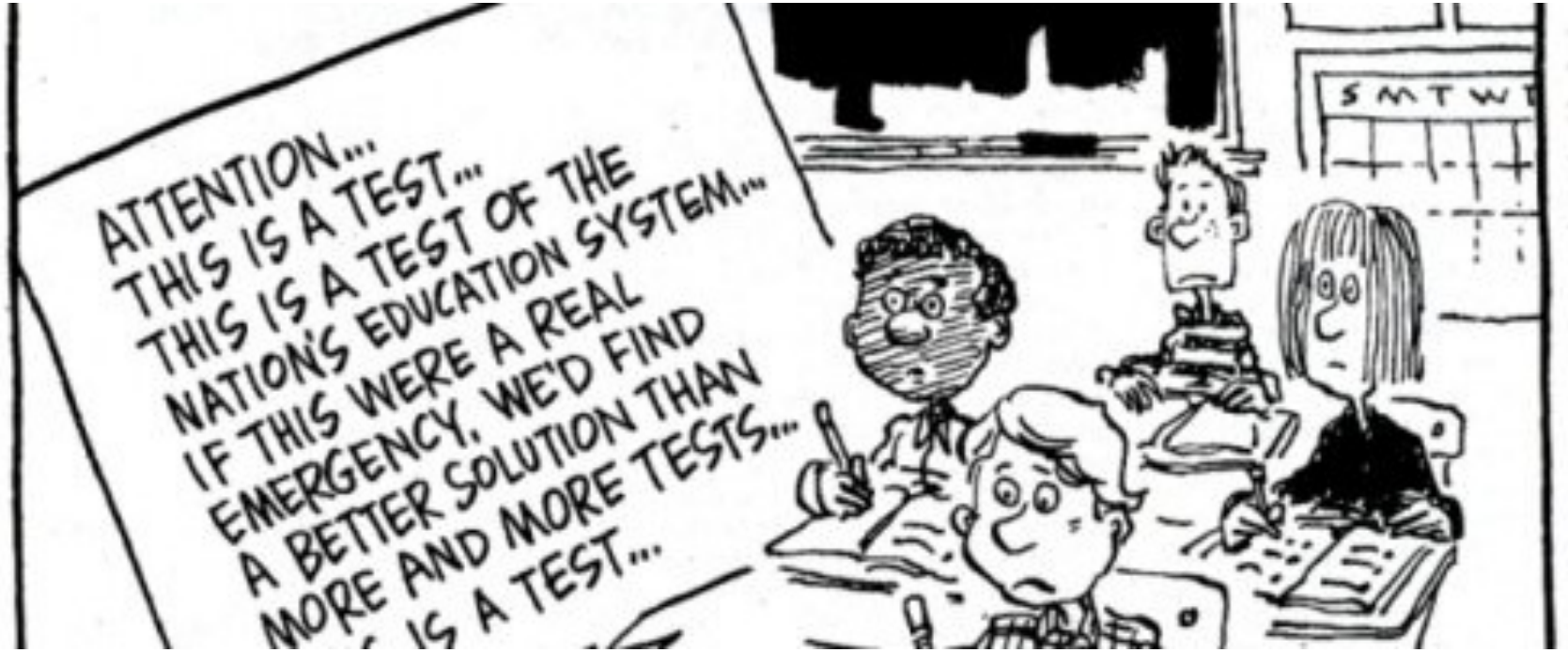
- Goal 1: **student is prepared** for college-level coursework for math and English prior to registration
- Goal 2: increases current college students chances to succeed and accelerates their pathway to degree/certification completion

High-Stakes Testing



Jacksonville State University

- *8151 Students Fall 2017*
- *83% on Financial Aid*
- *Almost a third are first generation college students*

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Jacksonville State University

- *Admission Standards:*
  - *Conditional Acceptance*
    - *18-19 ACT Composite*
    - *870-942 SAT (Reading/Math)*
  - *Unconditional Acceptance*
    - *20+ ACT Composite*
    - *950+ SAT (Reading/Math)*

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The Need

The State Department of Education in Alabama reports that over 75% of the state's 8th graders and over 80% of 10th graders are in need of remediation in mathematics.

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JSU's Situation

- 50% Failure Rate in Developmental Mathematics followed by a 50% failure rate in College Algebra
- Attempts at placement:
  - Departmental Test
  - Compass
  - ACT
  - Replace a high stakes test with personalized learning materials.

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JSU EdReady Collaboration

1. **NROC built the EdReady software.**

2. **JSU MCIS Department and Learning Services:**
    1. **Chose the Learning Objectives to fit our courses**
    2. **Assisted EdReady in designing assessments with these objectives**
    3. **Piloted EdReady**
    4. **Redesigned Developmental Algebra**
    5. **Coordinated with administration, Orientation, student services, dual enrollment, IT, & more.**
    6. **Implemented the program Summer 2015**

The NROC Project (aka Hippocampus)

- **A non-profit, open educational resource project of The Monterey Institute for Technology and Education**
- Funded by
  - **The William and Flora Hewlett Foundation**
  - **The Bill and Melinda Gates Foundation**
  - **Supporting Institutional Members from the Academic Community**

    (JSU has been a member institution since 2011.)

EdReady as Low Stakes Placement

JSU EdReady Powered by NROC

If you want to improve your math skills, place into a higher math, save time and money, JSU EdReady is for you!

Who Takes JSU EdReady?
All incoming freshmen and transfer students who have not completed their first required math take JSU EdReady (Students with AP credit and dual enrollment may be exempt).

What Does the JSU EdReady Math Placement Score Mean?
A passing score places you in the first math required for your major. If you do not attain a passing score initially, you can work through your individual study path until you reach the target score for your course.

For more information and directions to take the JSU EdReady Math Placement Exam, scan the QR Code, or visit
www.jsu.edu/mcis/mathplacement.html

How do I take the placement test?

Mathematics Placement by Score

What math do I need for my major?

Other Frequently Asked Questions

Q. My Math Placement Test score isn't as high as I expected. Can I keep working to improve my score?

A. Yes. Once you complete the initial placement, EdReady generates an individual study path for you. You must complete your study path that includes watching videos, reading the topic text, completing practice problems and passing the quizzes. Once you reach the placement score for your target class, you will be eligible to enroll in the math required for your major.

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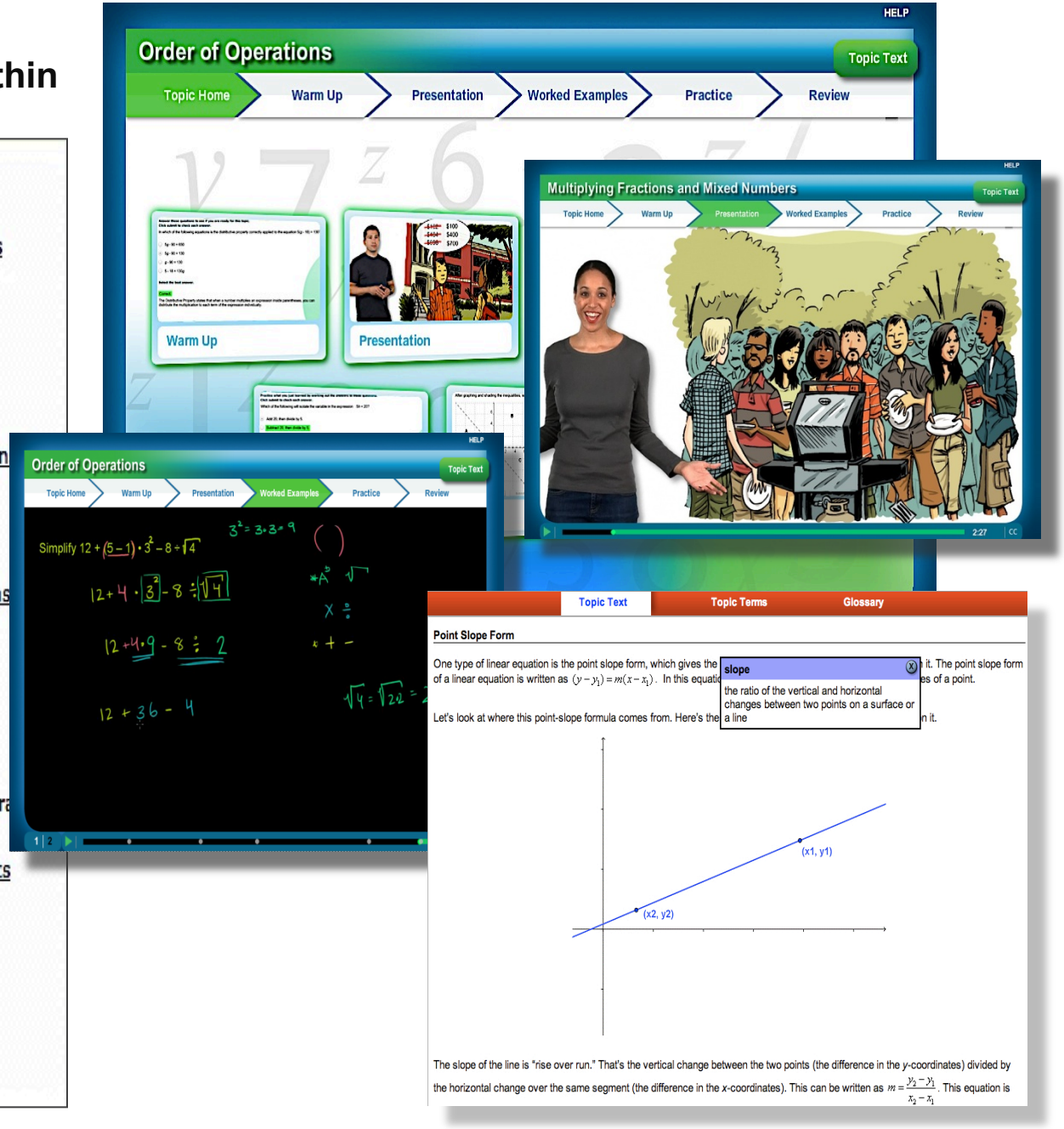
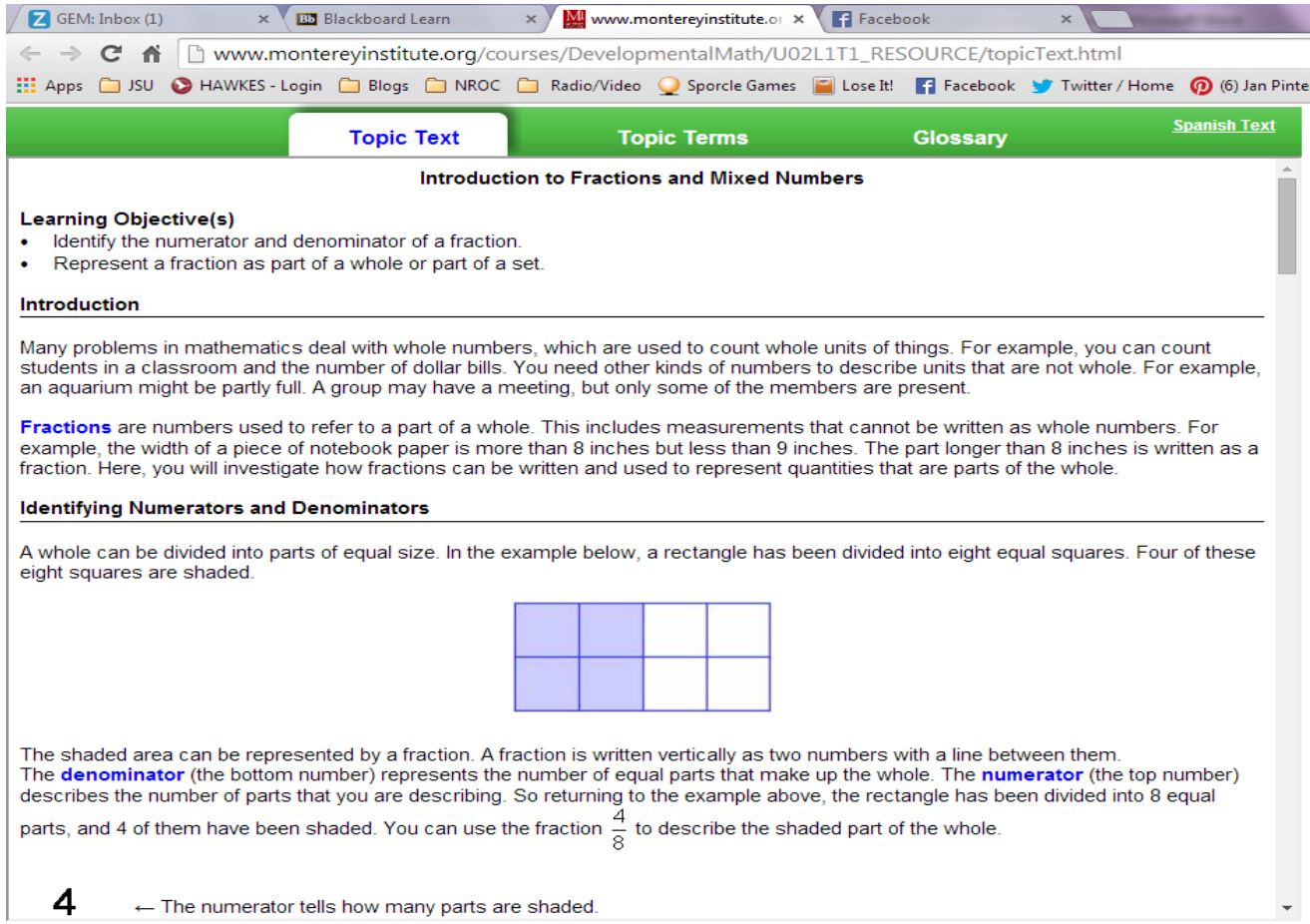
Example: Unit Overview within LMS

Unit 1 - Whole Numbers
- Lesson 1: Introduction to Whole Numbers
  - Learning Objectives
  - Topic 1: Place Value and Names for Whole Numbers
  - Topic 2: Rounding Whole Numbers
  - Topic 3: Comparing Whole Numbers
- Lesson 2: Adding and Subtracting Whole Numbers
  - Learning Objectives
  - Topic 1: Adding Whole Numbers and Applications
  - Topic 2: Subtracting Whole Numbers and Application
  - Topic 3: Estimation
- Lesson 3: Multiplying and Dividing Whole Numbers
  - Learning Objectives
  - Topic 1: Multiplying Whole Numbers and Applications
  - Topic 2: Dividing Whole Numbers and Applications
- Lesson 4: Properties of Whole Numbers
  - Learning Objectives
  - Topic 1: Properties and Laws of Whole Numbers
  - Topic 2: The Distributive Property
- Lesson 5: Exponents, Square Roots, and the Order of Opera
  - Learning Objectives
  - Topic 1: Understanding Exponents and Square Roots
  - Topic 2: Order of Operations
- Tutor Sim: Shopping for Office Supplies
- Puzzle: Which Comes First?
- Team Project: Open for Business

Unit 1 Quiz - not available in this preview
- Unit 1 Glossary





JSU has developed a workbook with corresponding practice problems to be worked out with pencil and paper. This resource has been shared with the NROC community.

The Process

Students take an un-proctored, online mathematics evaluation before their scheduled orientation.

A personalized study plan is created and students are given the opportunity (if needed) to improve their initial score to the mastery level required for their college math class.

If unable to complete the mastery, they may enroll in a developmental math course (once!) and receive assistance from instructors.

If mastery is not achieved by the end of the semester, students continue in an Emporium setting to complete the process.

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How’s It Working?

- Students placed by EdReady were significantly more likely to pass their subsequent college math class with a grade of C or better than students placed by prior methods ($p=0.011$).

- Students placed by EdReady were significantly less likely to withdraw or receive grades of Incomplete for their college math class ($p=0.008$).

How Much Better?

- Before: STEM majors who completed developmental math passed college math at a rate of 52.6%
- After: STEM majors who completed the EdReady placement path passed college math at a rate of 74.3% the first year and 79.3% the second year.

Basis for comparison Fall 2015		EdReady placement	Traditional placement
Passing grades (A-C)	Combined	74.3%	66.3%
	STEM	76.1%	63.0%
	Non-STEM	68.4%	72.2%
Withdraw or Incomplete	STEM	6.2%	10.9%
	Non-STEM	8.9%	10.6%

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Basis for comparison Fall 2016		EdReady placement
Passing grades (A-C)	Combined	79.3%
	STEM	67.9%
	Non-STEM	81.9%

Of the STEM majors who passed, 42.6% made As.

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Initial vs Worked Placement

(both low stakes, un-proctored)

- 12% of students who took college algebra achieved an adequate initial placement score
- 88% started with an inadequate initial placement score and worked independently to raise their score
- There was no significant difference in the percentage who passed with a grade of C or better ($p=0.334$)

Current Status

Low stakes placement is now the norm at JSU and the majority of students are able to avoid taking a developmental math course, thus saving time and money.

JSU has reduced the number of developmental math courses offered each year from 35 to 15.

STEM majors are experiencing greater success in College Algebra.

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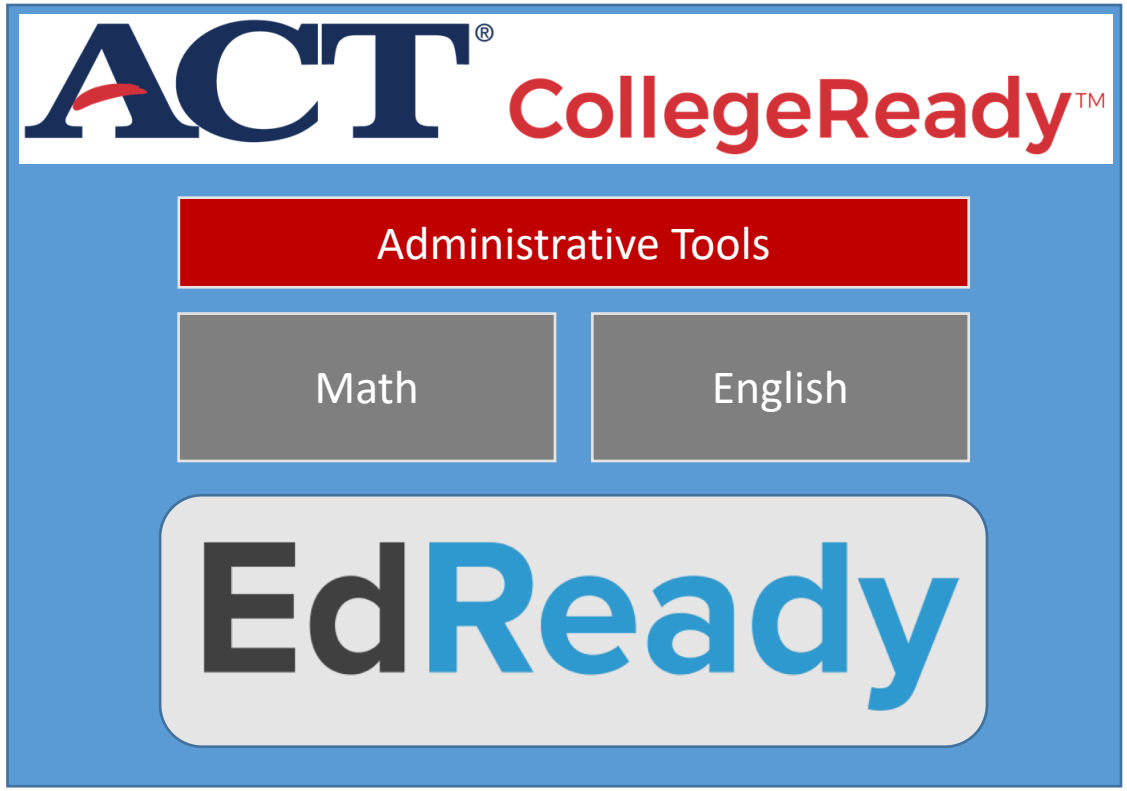
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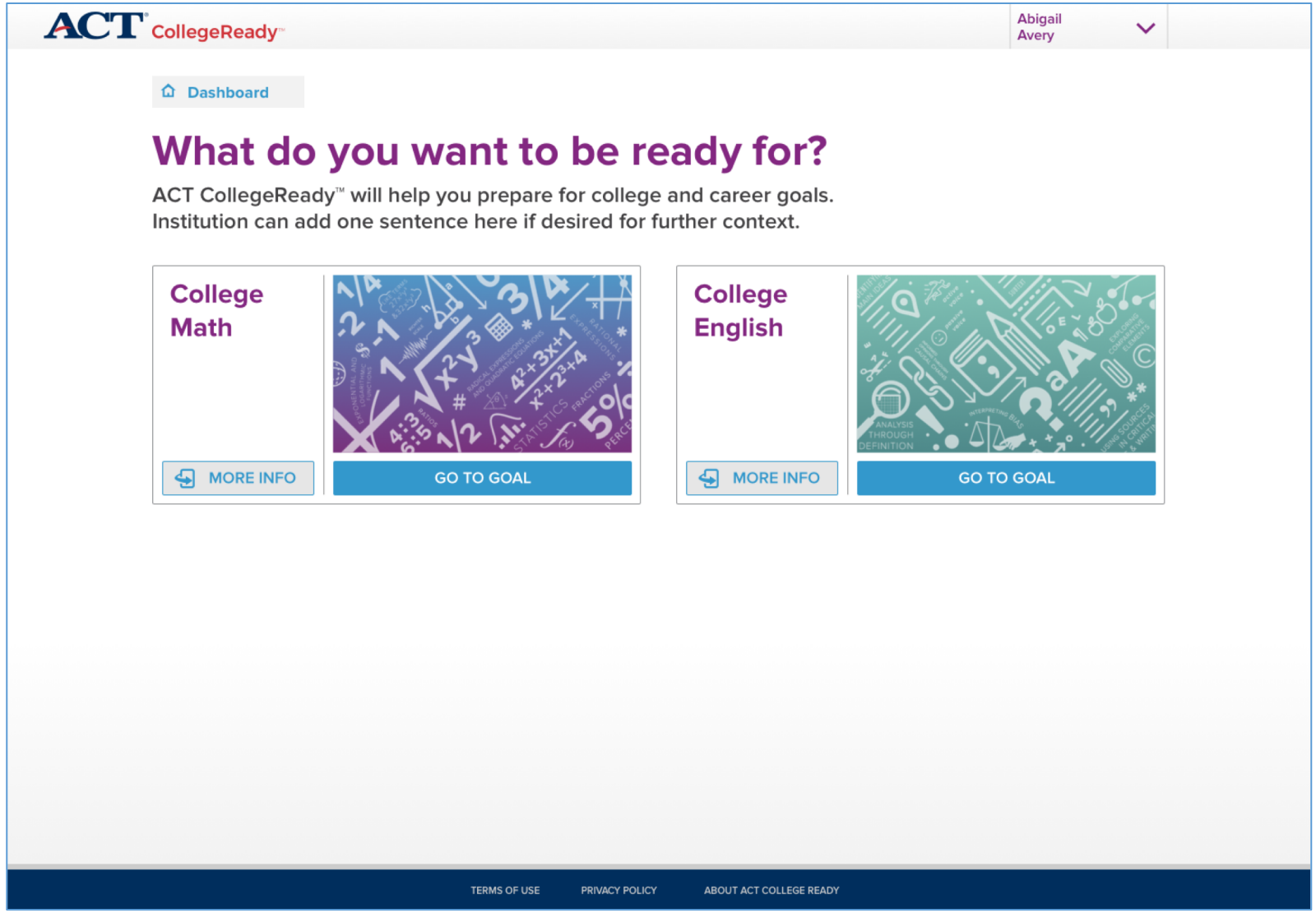
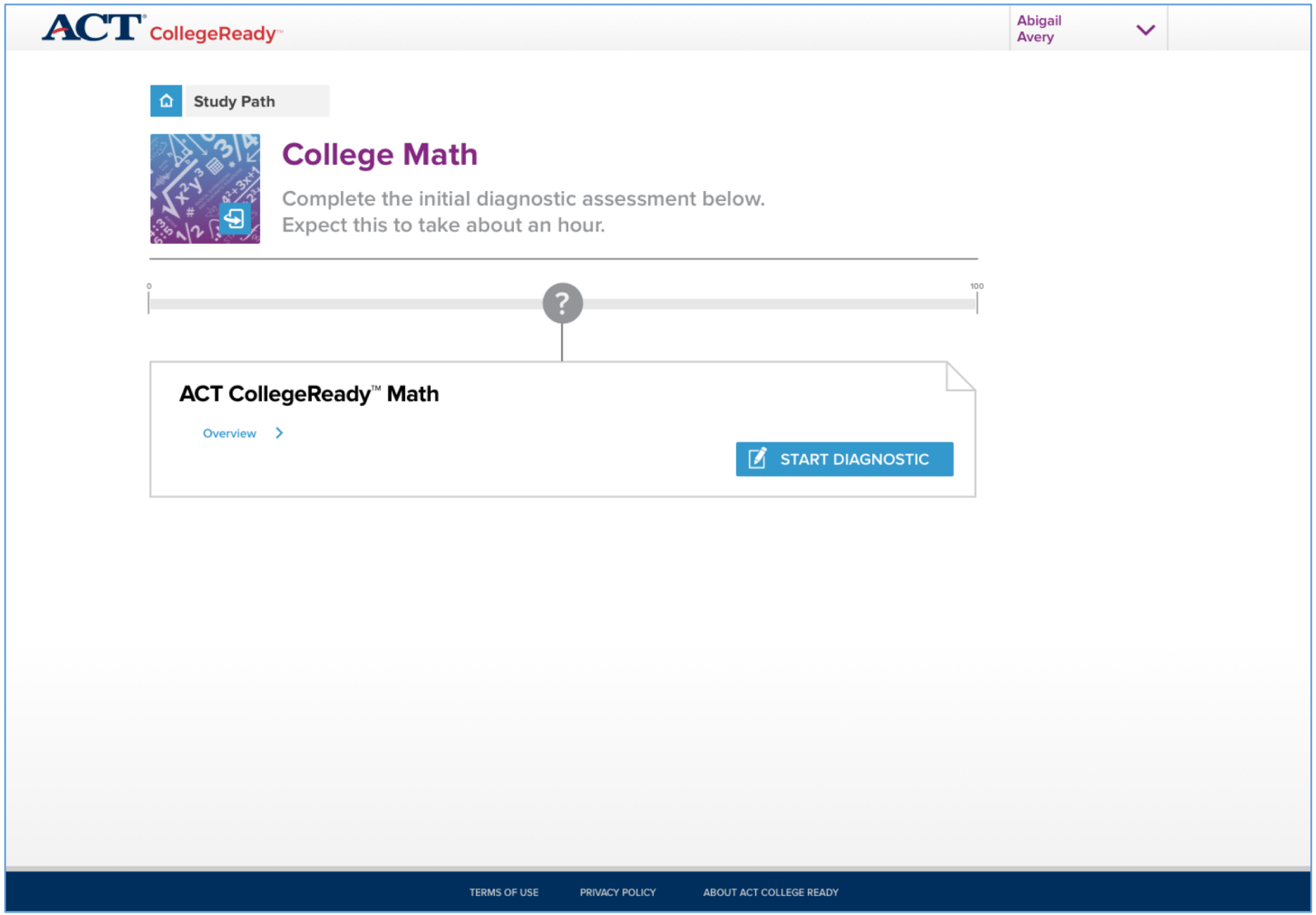
CollegeReady™
Administrative Tools
Math
English
EdReady

Student & Administrator Experience


ACT CollegeReady
Abigail Avery
Dashboard
What do you want to be ready for?
ACT CollegeReady™ will help you prepare for college and career goals.
Institution can add one sentence here if desired for further context.
College Math
MORE INFO
GO TO GOAL
College English
MORE INFO
GO TO GOAL
TERMS OF USE
PRIVACY POLICY
ABOUT ACT COLLEGE READY


ACT CollegeReady
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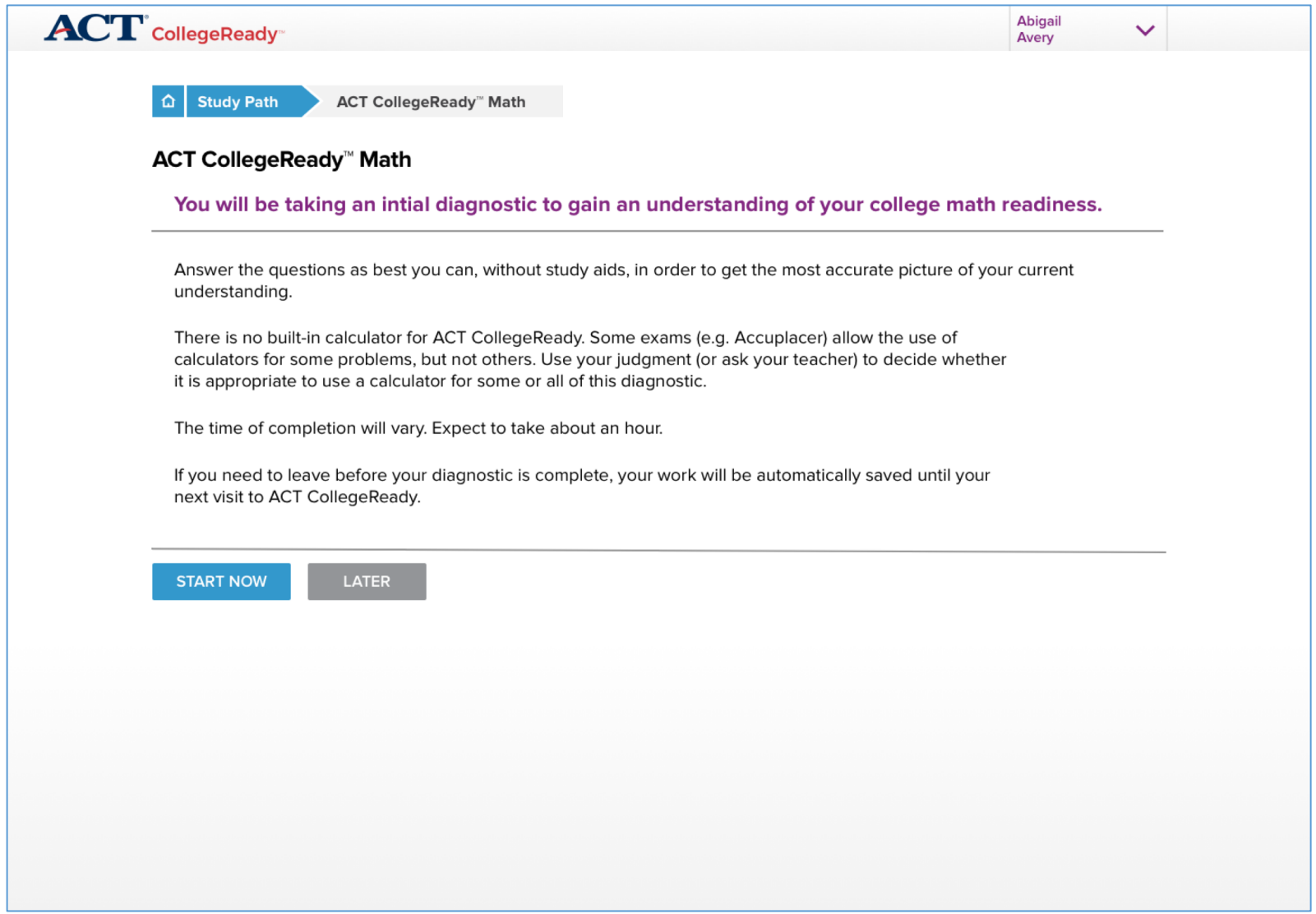
Study Path
College Math
Complete the initial diagnostic assessment below.
Expect this to take about an hour.
0
100
?
ACT CollegeReady™ Math
Overview
START DIAGNOSTIC
TERMS OF USE
PRIVACY POLICY
ABOUT ACT COLLEGE READY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Study Path
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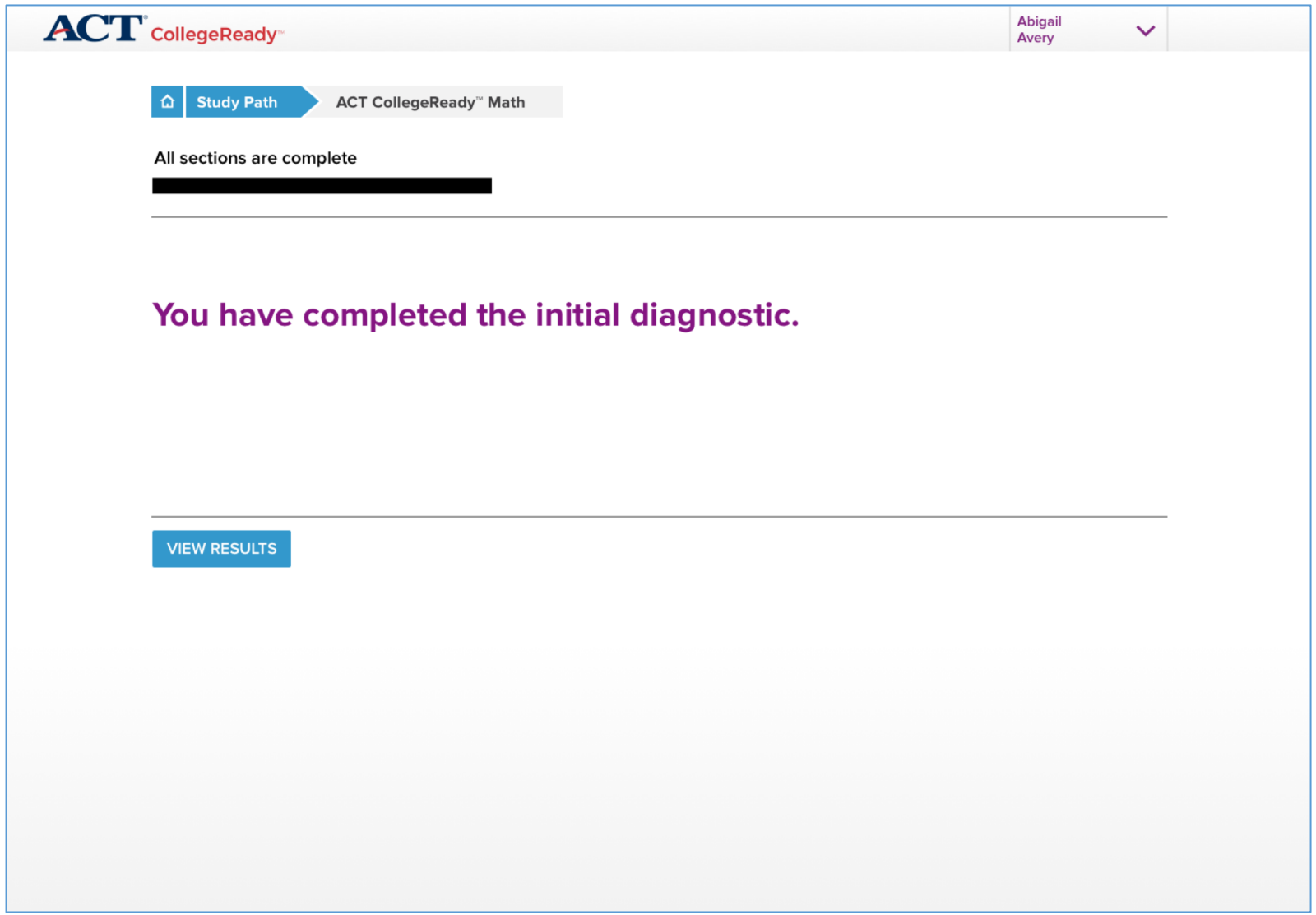
ACT CollegeReady™ Math
You will be taking an intial diagnostic to gain an understanding of your college math readiness.
Answer the questions as best you can, without study aids, in order to get the most accurate picture of your current understanding.
There is no built-in calculator for ACT CollegeReady. Some exams (e.g. Accuplacer) allow the use of calculators for some problems, but not others. Use your judgment (or ask your teacher) to decide whether it is appropriate to use a calculator for some or all of this diagnostic.
The time of completion will vary. Expect to take about an hour.
If you need to leave before your diagnostic is complete, your work will be automatically saved until your next visit to ACT CollegeReady.
START NOW
LATER


ACT CollegeReady
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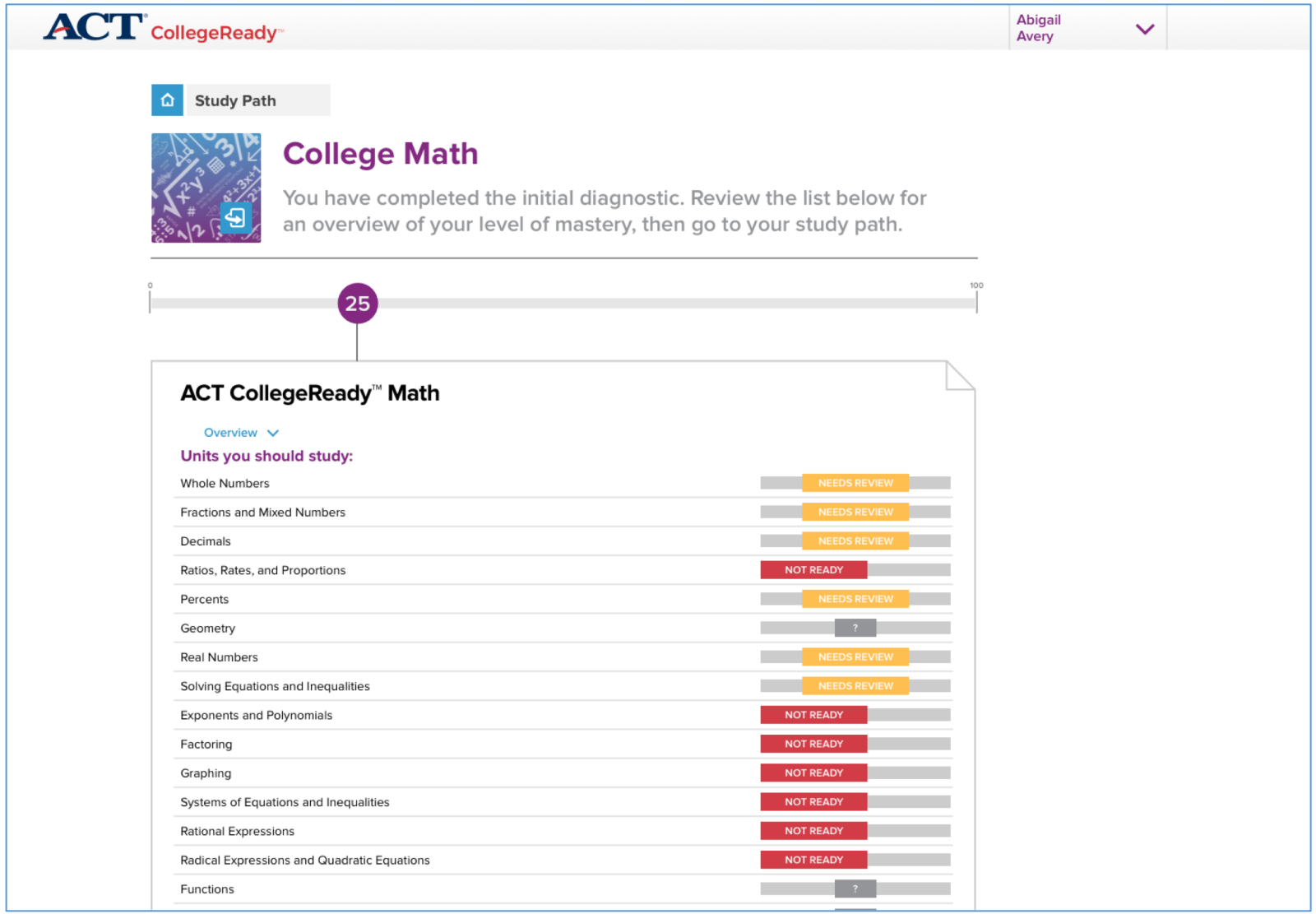
Study Path
ACT CollegeReady™ Math
All sections are complete
[redacted]
You have completed the initial diagnostic.
VIEW RESULTS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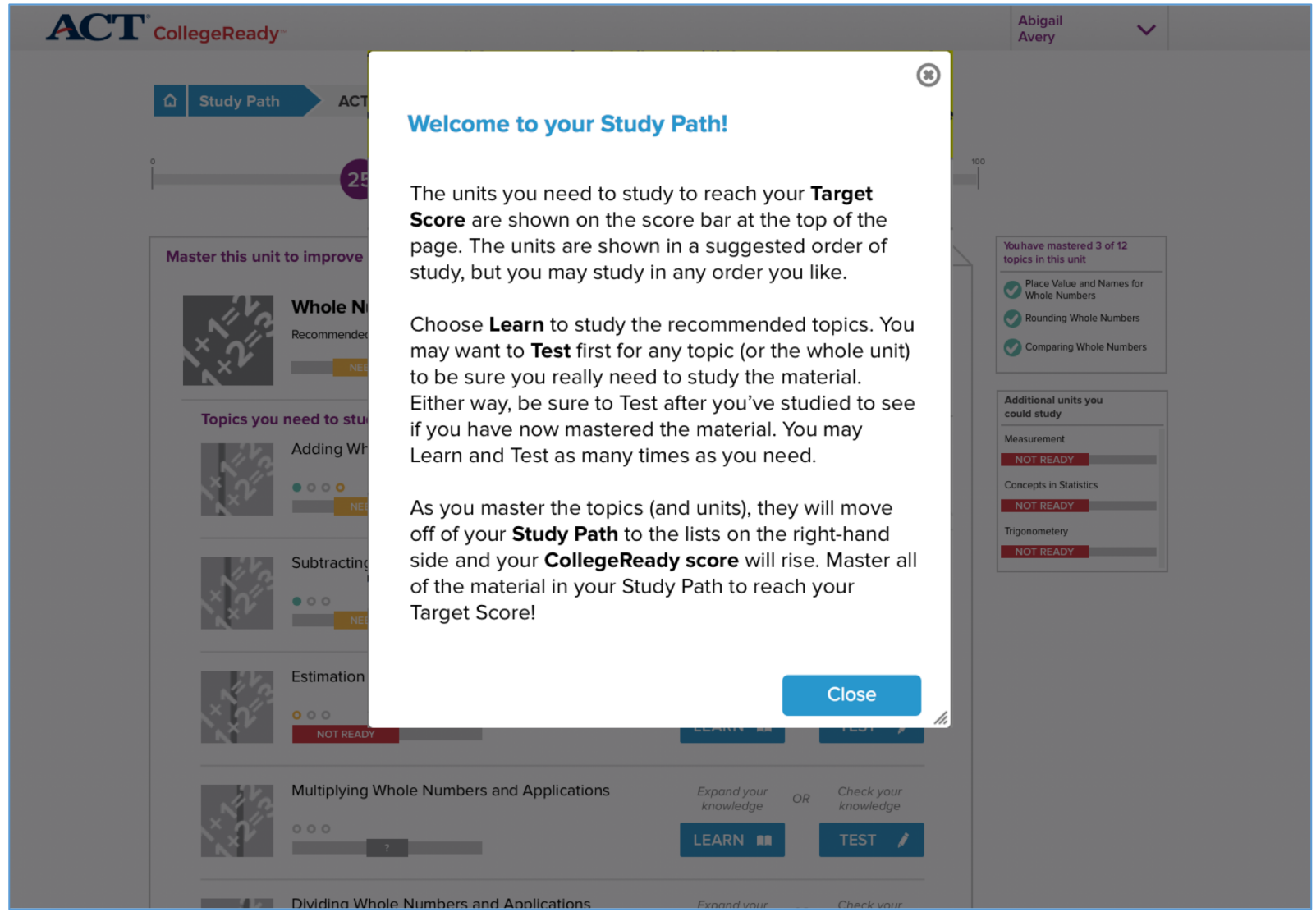
Study Path
College Math
You have completed the initial diagnostic. Review the list below for an overview of your level of mastery, then go to your study path.
0
100
25
ACT CollegeReady™ Math
Overview
Units you should study:
Whole Numbers NEEDS REVIEW
Fractions and Mixed Numbers NEEDS REVIEW
Decimals NEEDS REVIEW
Ratios, Rates, and Proportions NOT READY
Percents NEEDS REVIEW
Geometry ?
Real Numbers NEEDS REVIEW
Solving Equations and Inequalities NEEDS REVIEW
Exponents and Polynomials NOT READY
Factoring NOT READY
Graphing NOT READY
Systems of Equations and Inequalities NOT READY
Rational Expressions NOT READY
Radical Expressions and Quadratic Equations NOT READY
Functions ?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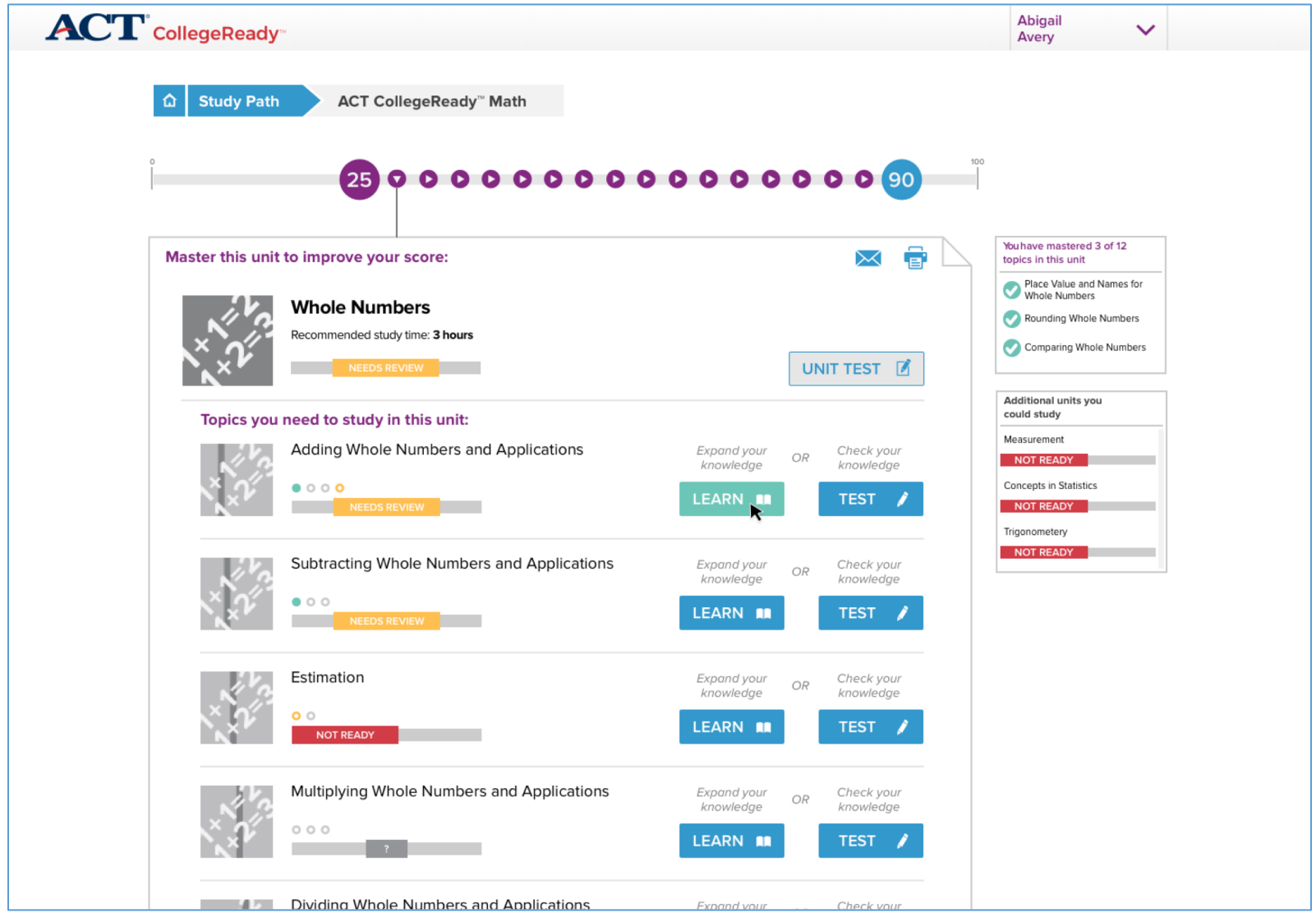
Study Path
Welcome to your Study Path!
The units you need to study to reach your Target Score are shown on the score bar at the top of the page. The units are shown in a suggested order of study, but you may study in any order you like.
Choose Learn to study the recommended topics. You may want to Test first for any topic (or the whole unit) to be sure you really need to study the material. Either way, be sure to Test after you've studied to see if you have now mastered the material. You may Learn and Test as many times as you need.
As you master the topics (and units), they will move off of your Study Path to the lists on the right-hand side and your CollegeReady score will rise. Master all of the material in your Study Path to reach your Target Score!
Close
Master this unit to improve
Topics you need to stu
Adding Wh
Subtracting
Estimation
NOT READY
Multiplying Whole Numbers and Applications
Expand your knowledge
OR
Check your knowledge
LEARN
TEST
Dividing Whole Numbers and Applications
You have mastered 3 of 12 topics in this unit
Place Value and Names for Whole Numbers
Rounding Whole Numbers
Comparing Whole Numbers
Additional units you could study
Measurement
NOT READY
Concepts in Statistics
NOT READY
Trigonometery
NOT READY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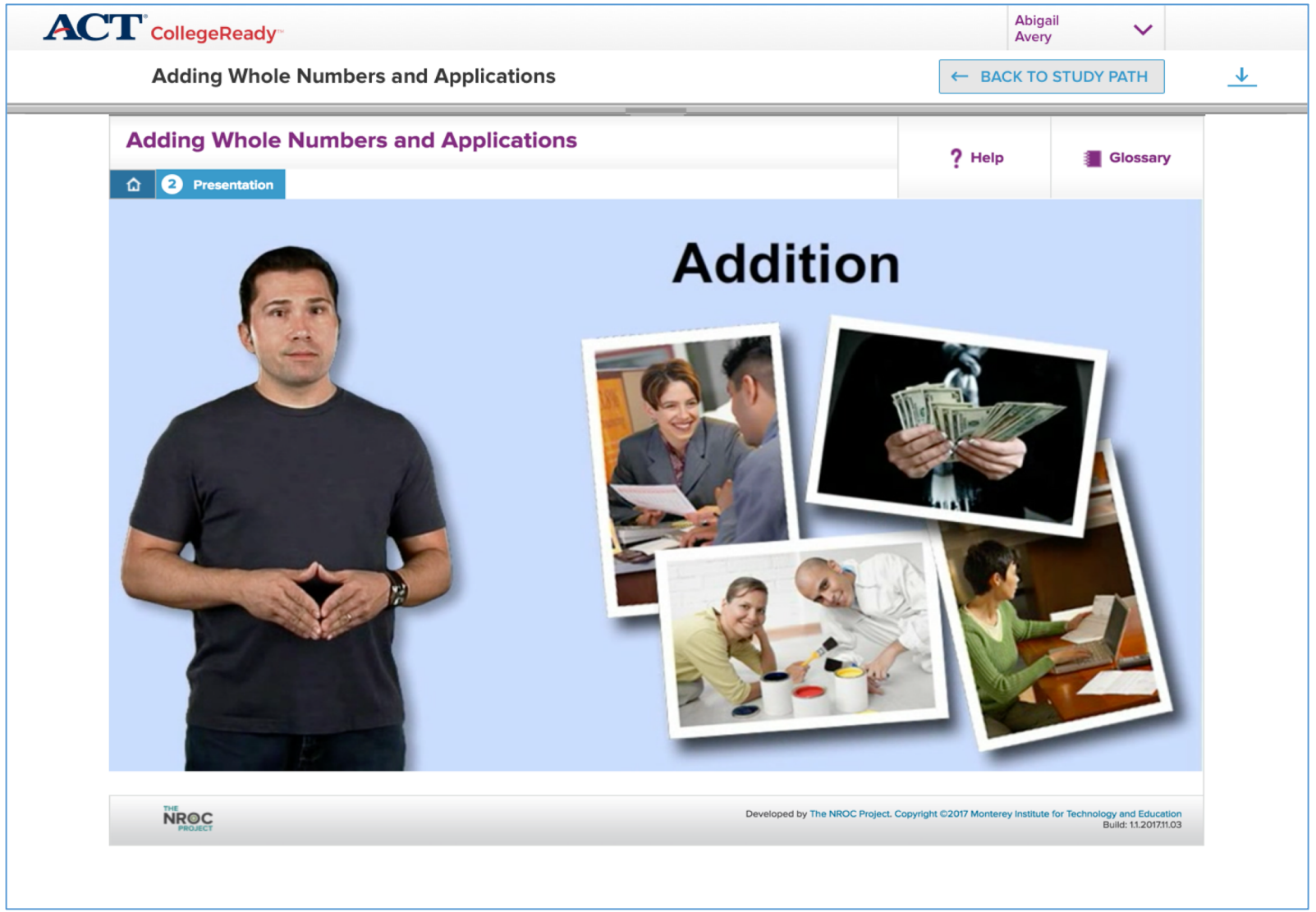
Study Path
ACT CollegeReady™ Math
0
25
90
100
Master this unit to improve your score:
Whole Numbers
Recommended study time: 3 hours
NEEDS REVIEW
UNIT TEST
Topics you need to study in this unit:
Adding Whole Numbers and Applications
NEEDS REVIEW
Expand your knowledge
OR
Check your knowledge
LEARN
TEST
Subtracting Whole Numbers and Applications
NEEDS REVIEW
Estimation
NOT READY
Multiplying Whole Numbers and Applications
Dividing Whole Numbers and Applications
You have mastered 3 of 12 topics in this unit
Place Value and Names for Whole Numbers
Rounding Whole Numbers
Comparing Whole Numbers
Additional units you could study
Measurement
NOT READY
Concepts in Statistics
NOT READY
Trigonometery
NOT READY


ACT CollegeReady
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Adding Whole Numbers and Applications
BACK TO STUDY PATH
Adding Whole Numbers and Applications
Help
Glossary
2 Presentation
Addition
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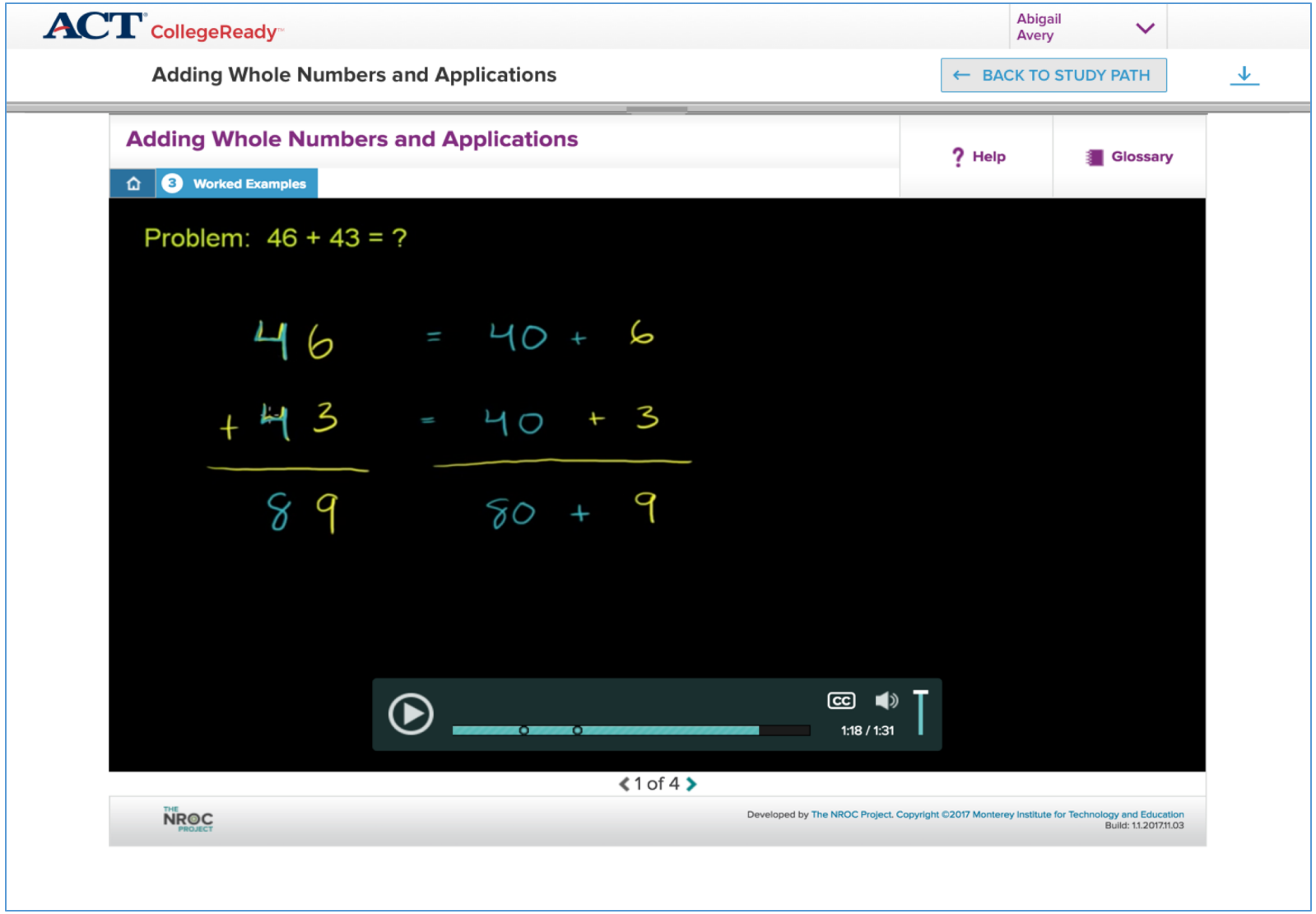
ACT CollegeReady
Abigail Avery
Adding Whole Numbers and Applications
BACK TO STUDY PATH
Adding Whole Numbers and Applications
Help
Glossary
3 Worked Examples
Problem: 46 + 43 = ?
46 = 40 + 6
+ 43 = 40 + 3
89 80 + 9
CC
1:18 / 1:31
1 of 4
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Adding Whole Numbers and Applications

← BACK TO STUDY PATH

Adding Whole Numbers and Applications

Help | Glossary

4 Topic Text | English | Spanish

Adding Whole Numbers and Applications

Learning Objective(s)

- Add whole numbers without regrouping.
- Add whole numbers with regrouping.
- Find the perimeter of a polygon.
- Solve application problems using addition.

Introduction

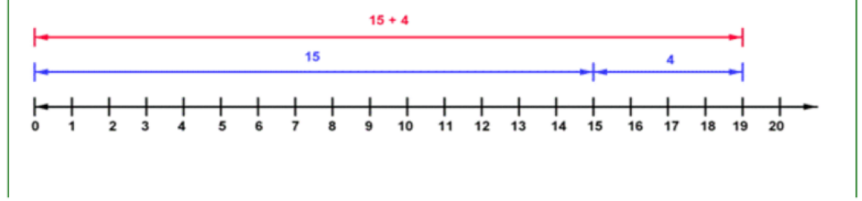
Adding is used to find the total number of two or more quantities. The total is called the **sum**, or the number that results from the addition. You use addition to find the total distance that you travel if the first distance is 1,240 miles and the second distance is 530 miles. The two numbers to be added, 1,240 and 530, are called the **addends**. The total distance, 1,770 miles, is the sum.

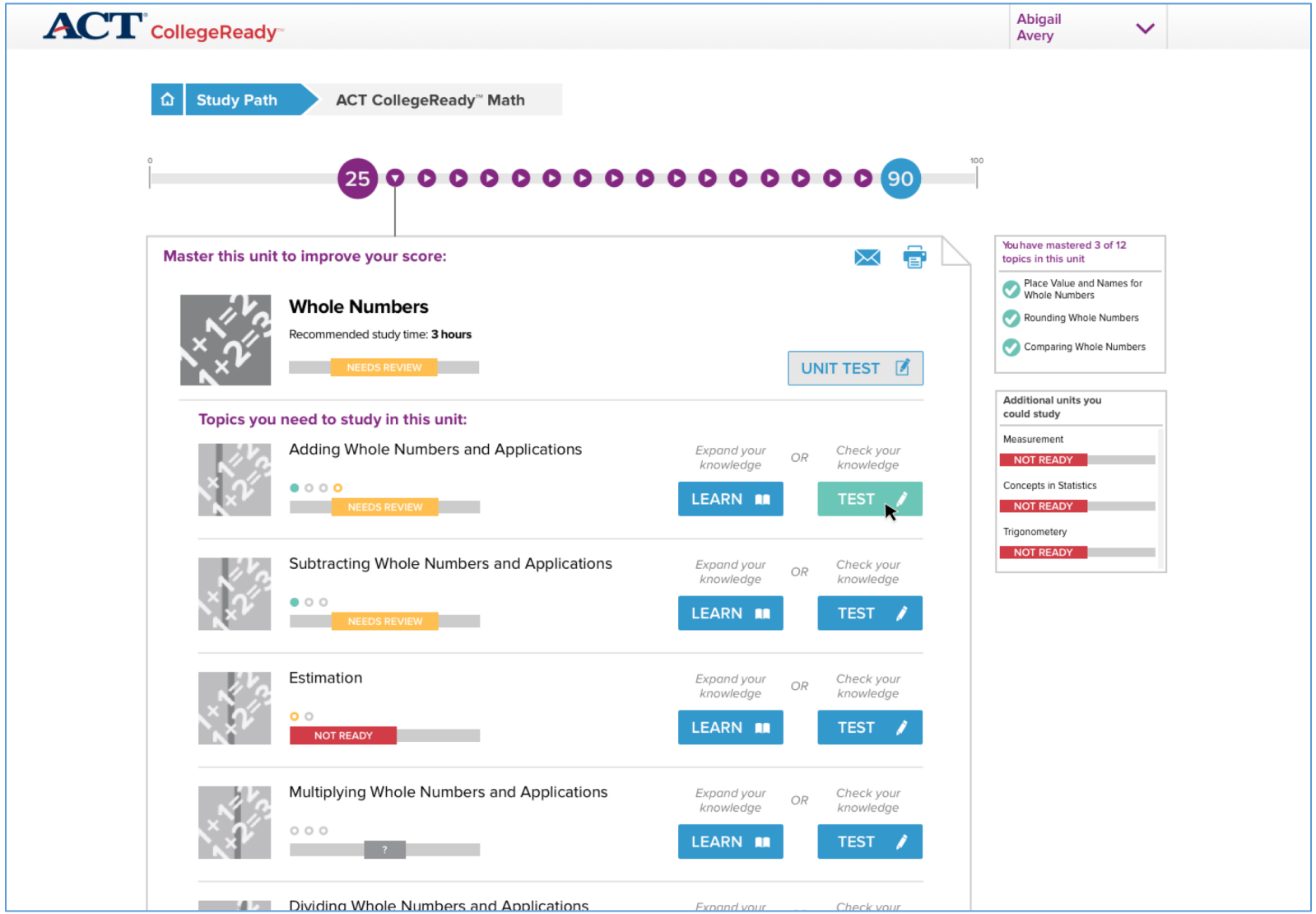
Adding Whole Numbers, without Regrouping

Adding numbers with more than one digit requires an understanding of **place value**. The place value of a digit is the value based on its position within the number. In the number 492, the 4 is in the hundreds place, the 9 is in the tens place, and the 2 is in the ones place. You can use a number line to add. In the example below, the blue lines represent the two quantities, 15 and 4, that are being added together. The red line represents the resulting quantity.

Example

Problem **15 + 4 = ?**

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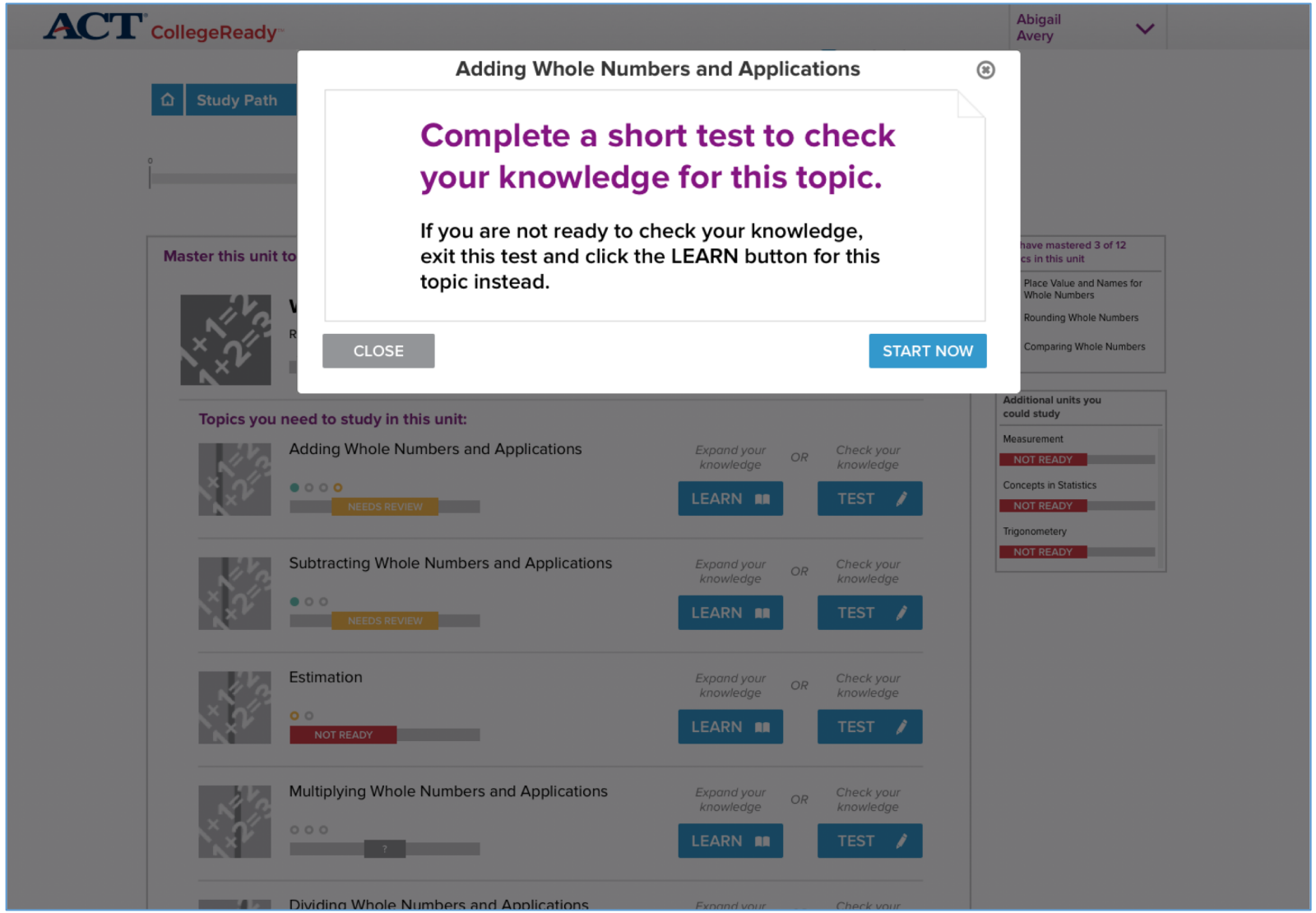
Study Path
ACT CollegeReady™ Math
0
25
90
100
Master this unit to improve your score:
Whole Numbers
Recommended study time: 3 hours
NEEDS REVIEW
UNIT TEST
Topics you need to study in this unit:
Adding Whole Numbers and Applications
NEEDS REVIEW
Expand your knowledge
OR
Check your knowledge
LEARN
TEST
Subtracting Whole Numbers and Applications
NEEDS REVIEW
LEARN
TEST
Estimation
NOT READY
LEARN
TEST
Multiplying Whole Numbers and Applications
?
LEARN
TEST
Dividing Whole Numbers and Applications
You have mastered 3 of 12 topics in this unit
Place Value and Names for Whole Numbers
Rounding Whole Numbers
Comparing Whole Numbers
Additional units you could study
Measurement
NOT READY
Concepts in Statistics
NOT READY
Trigonometery
NOT READY


ACT CollegeReady
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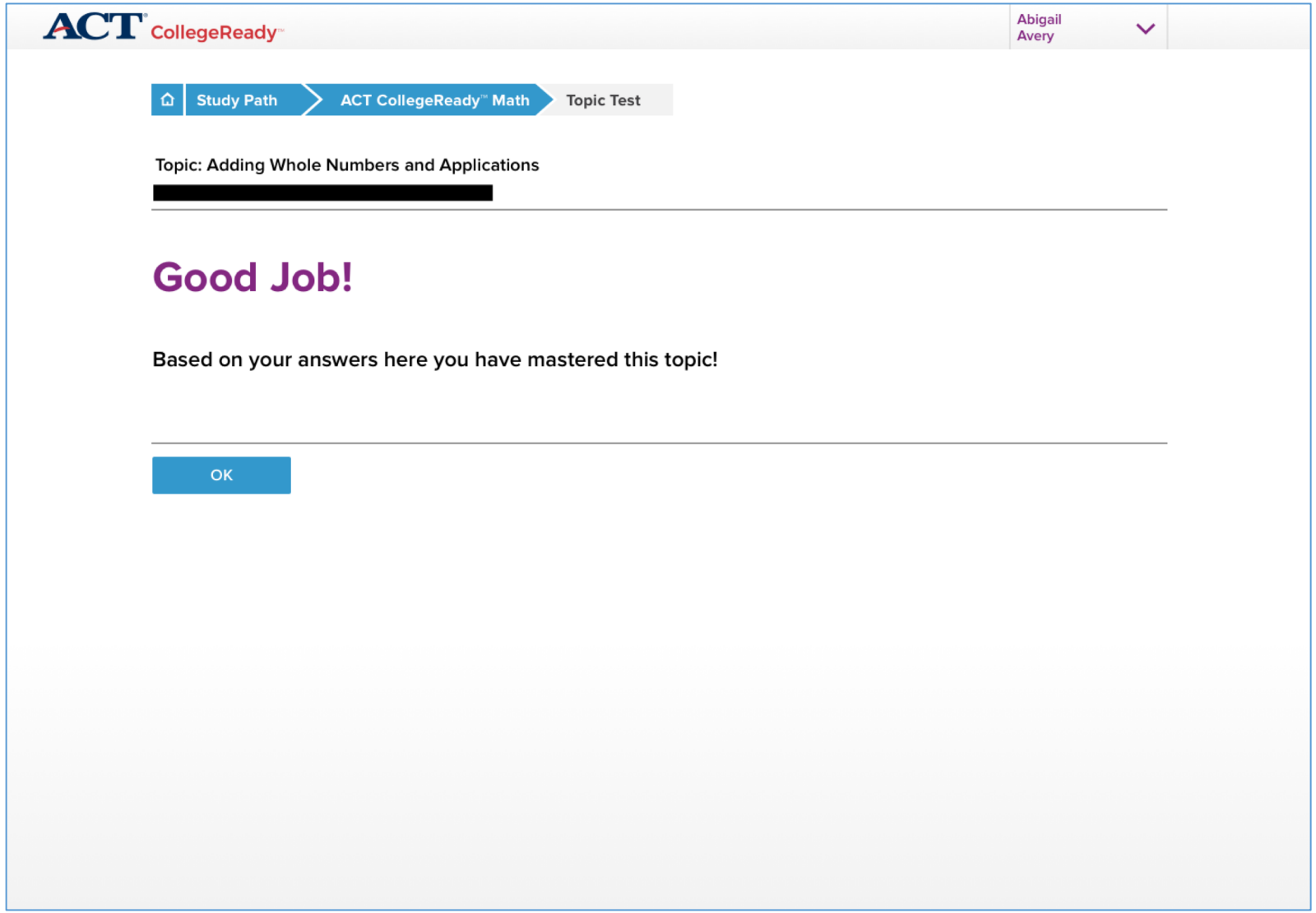
Study Path
Adding Whole Numbers and Applications
Complete a short test to check your knowledge for this topic.
If you are not ready to check your knowledge, exit this test and click the LEARN button for this topic instead.
CLOSE
START NOW
Master this unit to
Topics you need to study in this unit:
Adding Whole Numbers and Applications
NEEDS REVIEW
Expand your knowledge
OR
Check your knowledge
LEARN
TEST
Subtracting Whole Numbers and Applications
NEEDS REVIEW
Estimation
NOT READY
Multiplying Whole Numbers and Applications
Dividing Whole Numbers and Applications
have mastered 3 of 12 cs in this unit
Place Value and Names for Whole Numbers
Rounding Whole Numbers
Comparing Whole Numbers
Additional units you could study
Measurement
NOT READY
Concepts in Statistics
NOT READY
Trigonometery
NOT READY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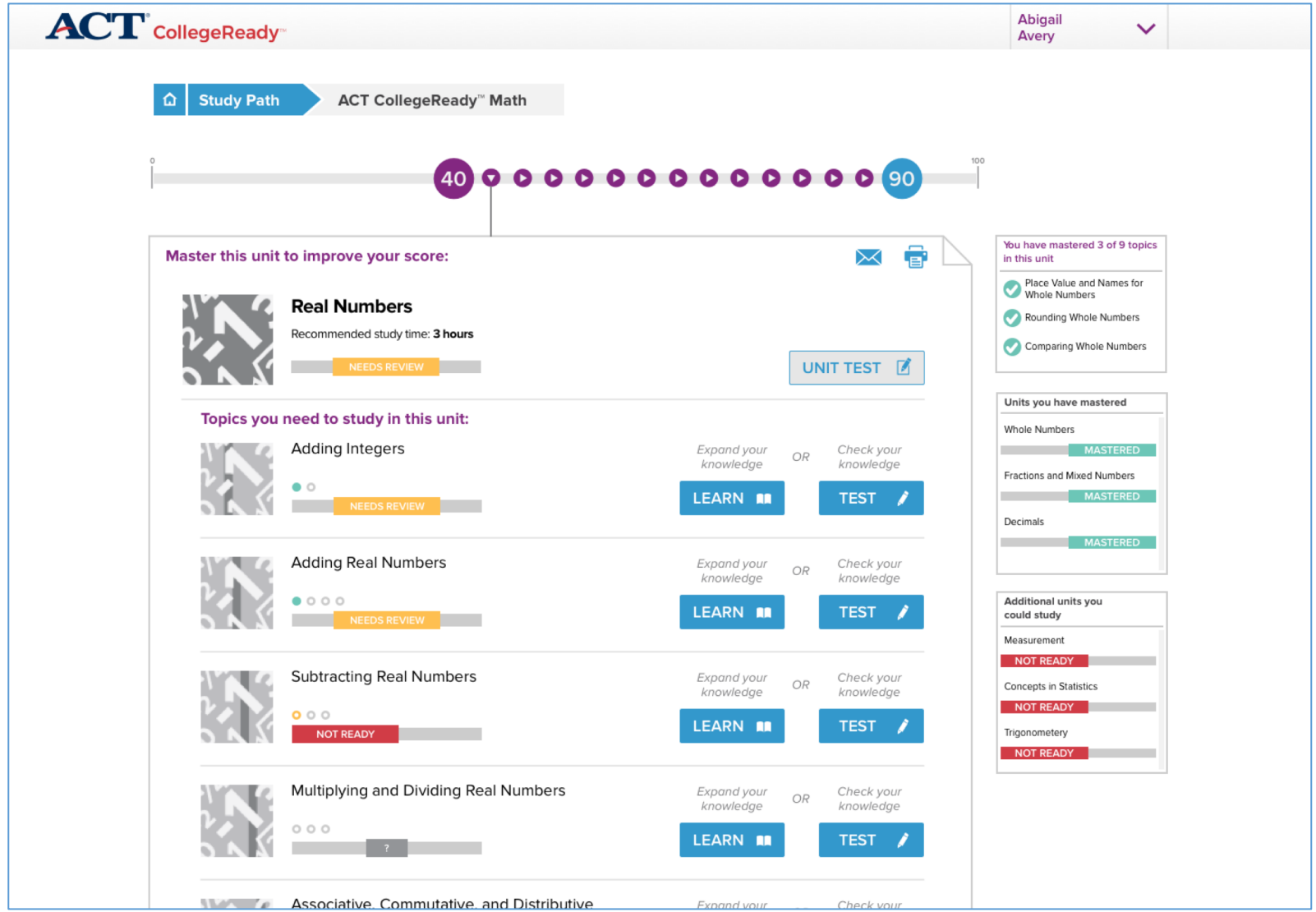
Study Path
ACT CollegeReady™ Math
Topic Test
Topic: Adding Whole Numbers and Applications
[redacted]
Good Job!
Based on your answers here you have mastered this topic!
OK


ACT CollegeReady
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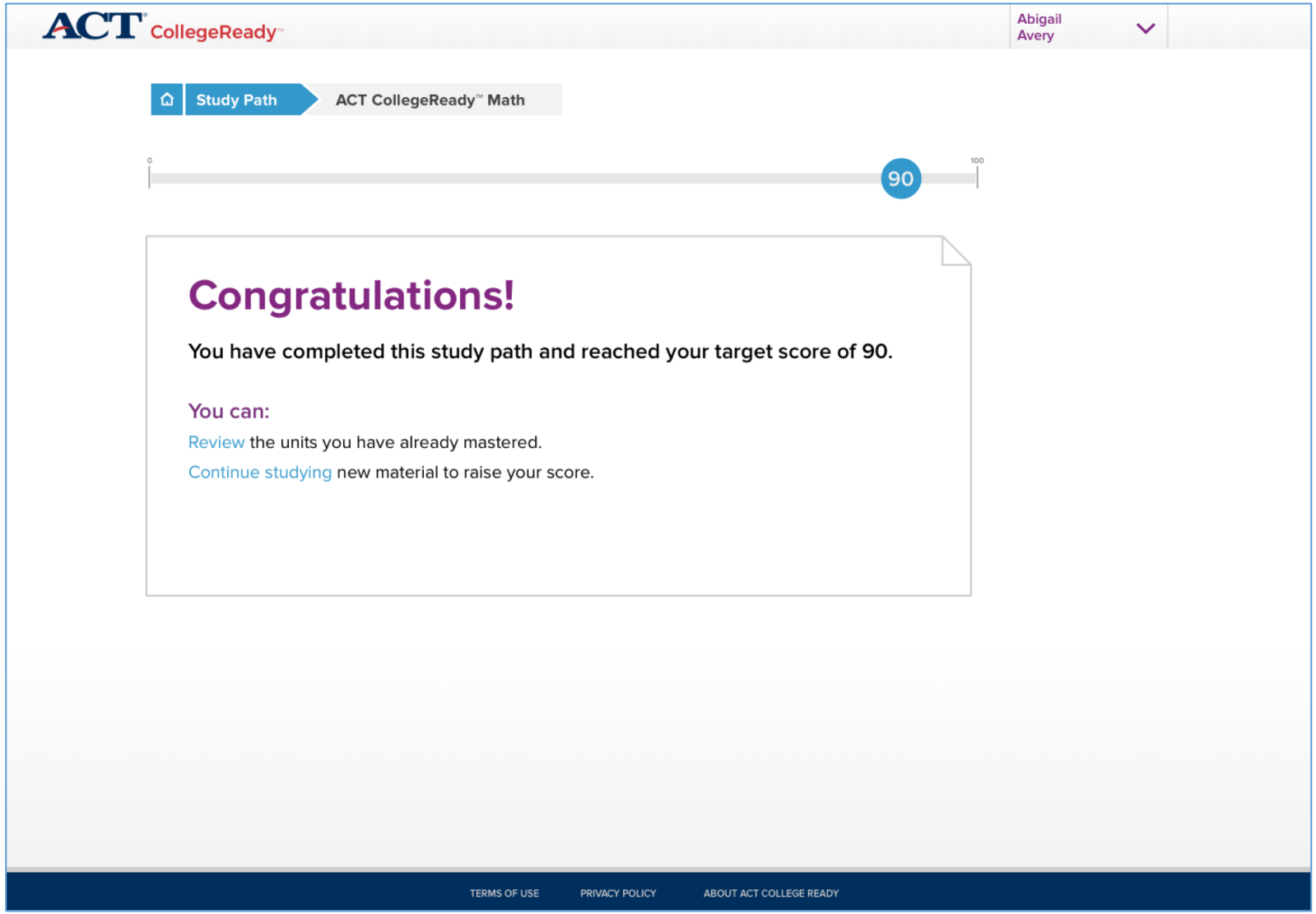
Study Path
ACT CollegeReady™ Math
0
40
90
100
Master this unit to improve your score:
Real Numbers
Recommended study time: 3 hours
NEEDS REVIEW
UNIT TEST
Topics you need to study in this unit:
Adding Integers
NEEDS REVIEW
Expand your knowledge
OR
Check your knowledge
LEARN
TEST
Adding Real Numbers
NEEDS REVIEW
Subtracting Real Numbers
NOT READY
Multiplying and Dividing Real Numbers
?
Associative, Commutative, and Distributive
You have mastered 3 of 9 topics in this unit
Place Value and Names for Whole Numbers
Rounding Whole Numbers
Comparing Whole Numbers
Units you have mastered
Whole Numbers
MASTERED
Fractions and Mixed Numbers
MASTERED
Decimals
MASTERED
Additional units you could study
Measurement
NOT READY
Concepts in Statistics
NOT READY
Trigonometry
NOT READY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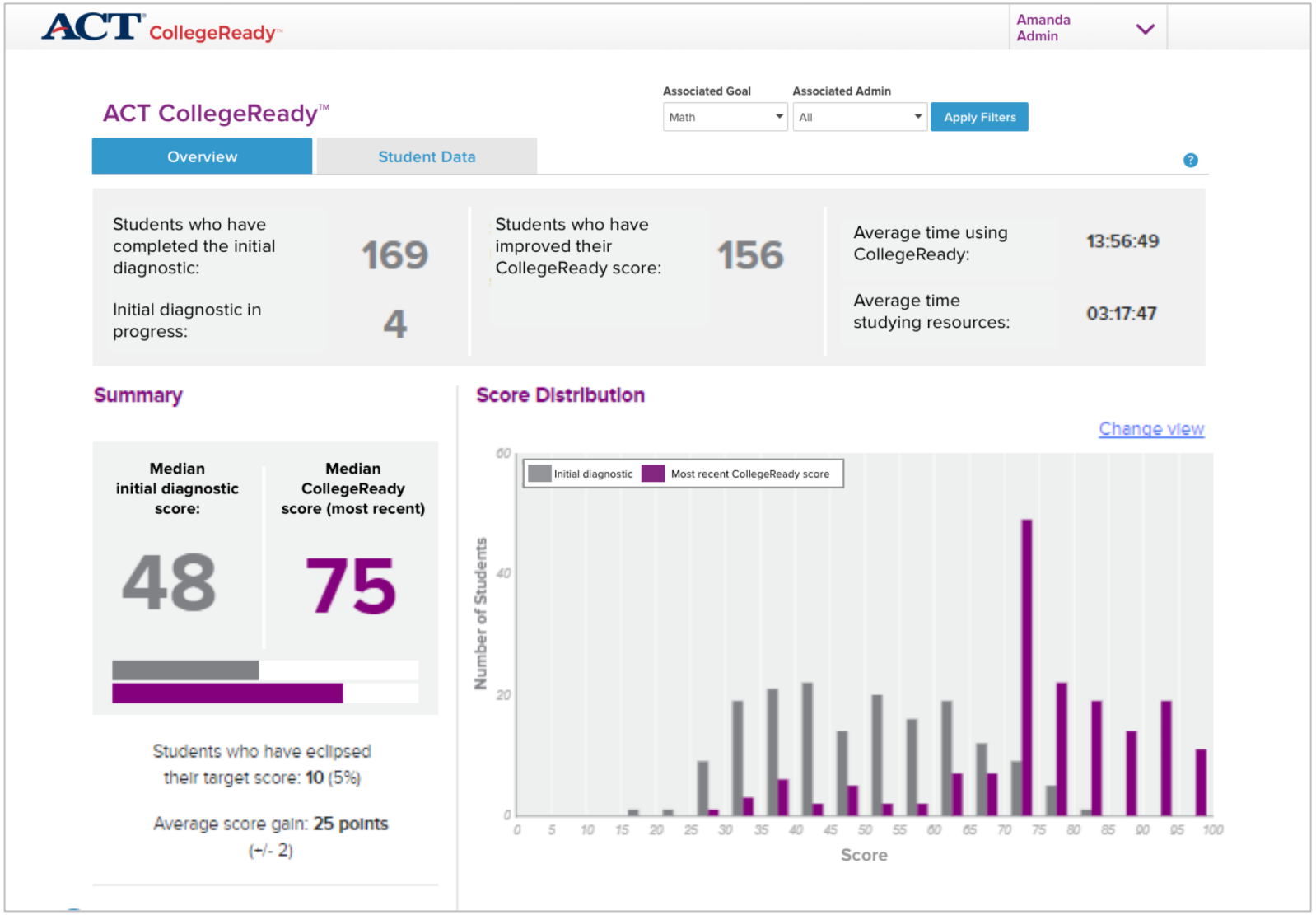
Study Path
ACT CollegeReady™ Math
0
100
90
Congratulations!
You have completed this study path and reached your target score of 90.
You can:
Review the units you have already mastered.
Continue studying new material to raise your score.
TERMS OF USE
PRIVACY POLICY
ABOUT ACT COLLEGE READY

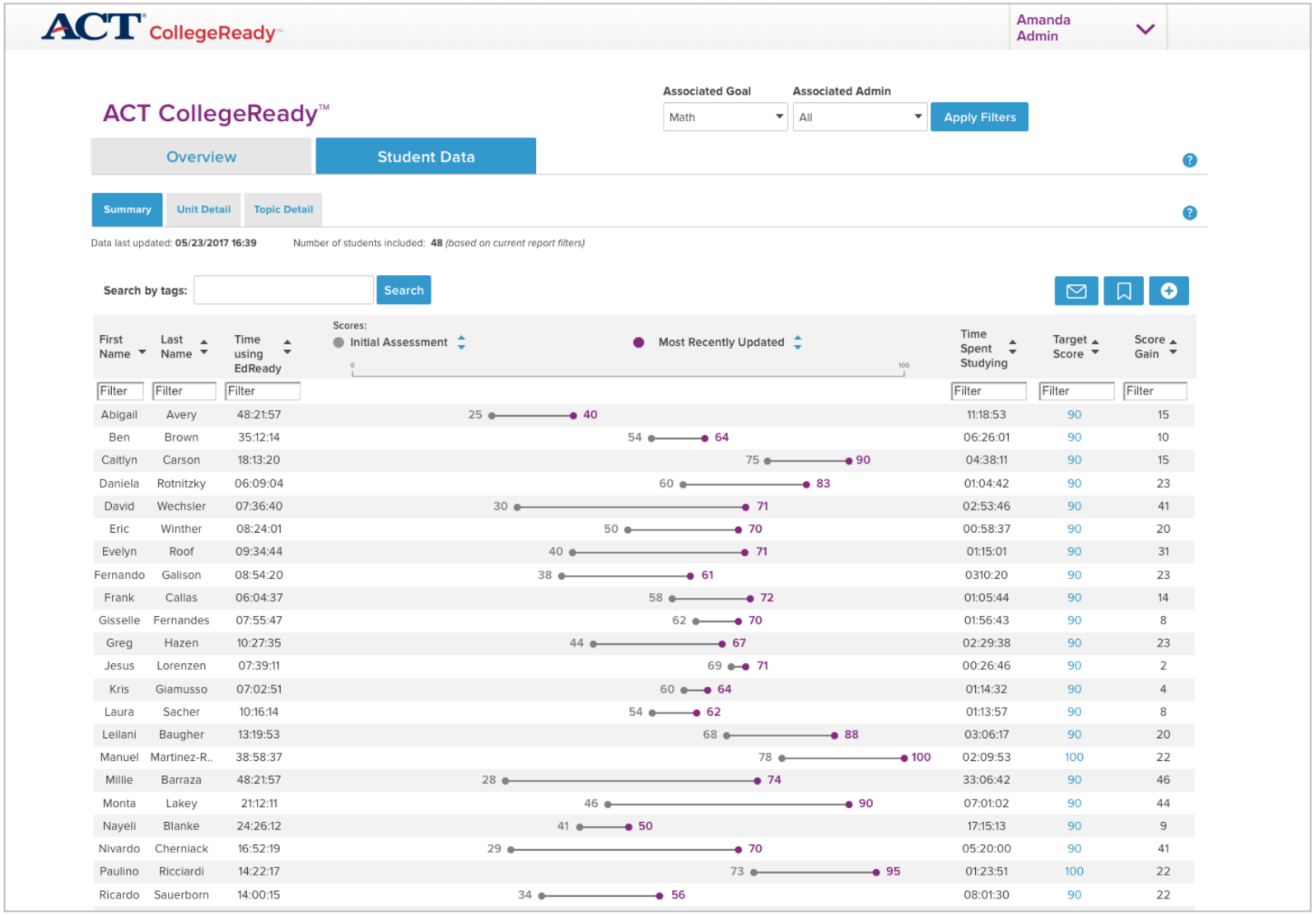
Administrator Experience

Admin experience

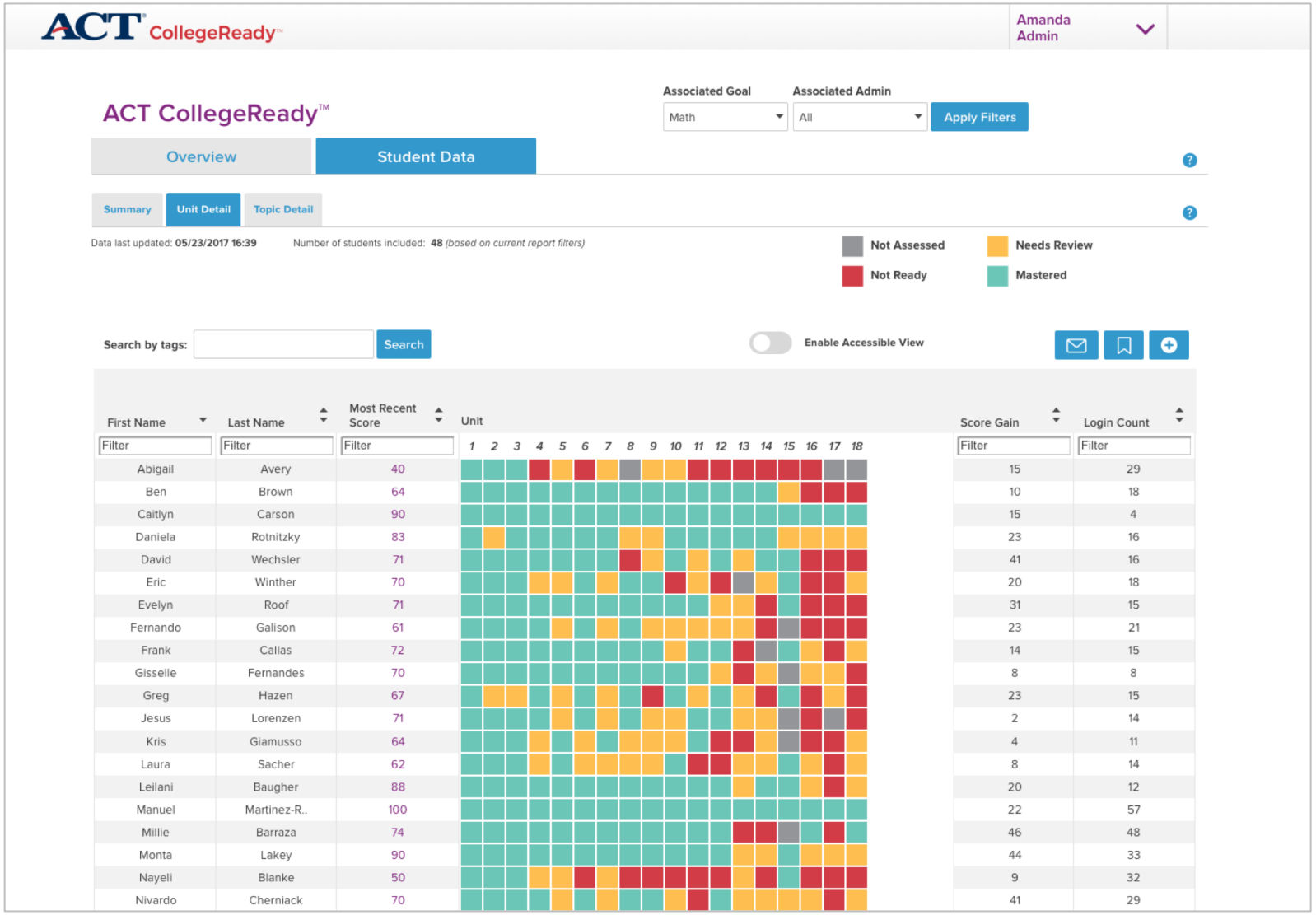
Administrator Overview screen



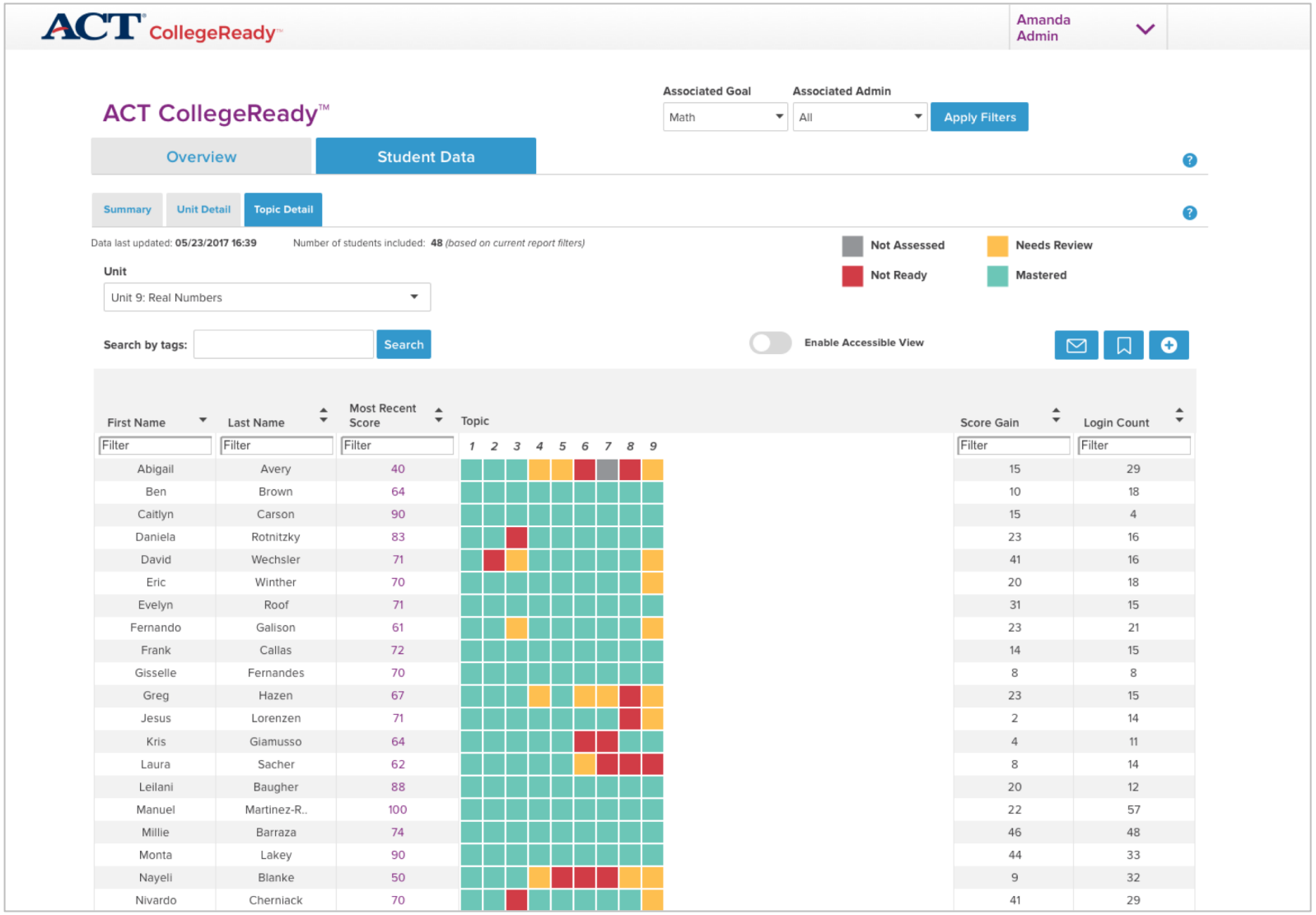
Admin experience



Admin experience



Admin experience




Questions?