



**Carnegie Learning<sup>®</sup>**  
**Professional Development Solutions**

**PARTNERING  
FOR  
SUCCESS**

# BUILDING TEACHER CONFIDENCE



**“I thought the presentations were effective, fun, and user-friendly. If I feel this motivated, imagine how my students will react to this!”**

**Suzy Hall, Teacher  
Hunter Middle School, TN**

**“I thought this initial implementation training was very helpful and informative. Our trainer was a great presenter and answered any questions while giving us a feel of how this actually looks in a classroom. I feel much more confident about the course than I did previously.”**

**Jessie Stephens, Teacher  
Avon Grove High School, PA**

# TEACHERS HELPING TEACHERS



**“Our trainer was awesome. As a former teacher in a school similar to ours, he was able to give firsthand knowledge of how the program should look, problems that arise and solutions to them.”**

**David Barnwell, Teacher  
Barberton High School, OH**

**“Our trainer was perfect in that he had actually taught the material to "real" students. As a presenter, his background with the program increased his credibility. His patience with our group was wonderful since most of our group had little or no experience with the program. A follow-up session and/or support at the local school will be very helpful. I am excited about the possibility of improving mathematics learning for all students!”**

**Gwendolyn Mitchell, Teacher  
Wayne RESA, MI**

# FIRST-RATE TRAINING



**“I have taught for 30 years and I've been involved in many training sessions. This has been without a doubt the most helpful in preparing me for this course or any other. Thank you!”**

**Bob Peton, Teacher  
Washington High School, PA**

**“This training was invaluable for my use of the Cognitive Tutor curriculum. I feel so much more prepared and VERY excited about getting started with these materials with my students.”**

**Mary Ziegler, Teacher  
Thousand Oaks High School, CA**

## Partnering for Success

Carnegie Learning is experienced at working side-by-side with hundreds of educators in school districts to successfully implement our math curricula. We are dedicated to partnering with you and sharing the best practices in standards-based mathematics instruction today. Our role is to support your team of teachers, coaches and leaders. Carnegie Learning provides multiple options for professional development that range from brief, live, on-line training sessions on how to get started using our curricula in your classroom to a comprehensive implementation framework that encompasses on-site training and in-classroom coaching to improve student achievement results.

## Our Educational Services Team

**Managers of School Partnerships (MSP)** are full-time employees who have successfully implemented award winning Carnegie Learning curricula in a wide range of settings from small rural schools to large urban schools with diverse student populations. They are experts in both curriculum and implementation. These managers, along with our certified implementation specialists, provide our initial and ongoing professional development.

**Certified Implementation Specialists (CIS)** deliver initial professional development sessions and are both current and former teachers who have successfully implemented Carnegie Learning® math courses. Each specialist must undergo a rigorous training process which includes a presentation of portions of the professional development program to a panel of experts. This panel evaluates each candidate's performance and judges whether or not they meet our standards of excellence. Only the most qualified become fully certified implementation specialists.

## Carnegie Learning® Professional Development Offerings at a Glance

- >> **Carnegie Learning® K-8 Math Content Academies**, designed to improve teacher content knowledge and mathematical understanding.
- >> **Carnegie Learning® Comprehensive Implementation Framework**, a systematic approach to implementing Carnegie Learning math curricula and offering professional development activities aligned to student achievement goals and outcomes.
- >> **Carnegie Learning® Professional Development Workshops**, just-in-time professional development opportunities available on-site or in online delivery formats.
- >> **Carnegie Learning® Capacity Building Solutions**, a “train the trainer” program designed to train district math coaches and instructional leaders to provide ongoing support to teachers within the school districts.

## What makes Carnegie Learning Professional Development Services Unique?

- Creating an implementation framework designed to help improve student achievement.
- Offering flexible options for professional development including face-to-face sessions or online sessions.
- Providing access to in-classroom support from Carnegie Learning math coaches.
- Offering 1:1 consultations with individual teachers for modeling lessons, instructional strategies, analyzing student progress data, etc.
- Prescribing and delivering ongoing customized professional development workshops aligned to teacher development needs and interests.
- Providing leadership training to administrators to help design the implementation goals and plans to support the teachers.
- Presenting end of year reporting on the implementation and recommendations for enhancing it the following school year.



## Phase 1 – Initial Implementation

### Training for Teachers

We provide initial training for teachers using Carnegie Learning curricula. Participants get to know the program components, experience and learn how to implement the research-based instructional model, and begin to learn about the report data they will use to differentiate instruction. Teachers who are participating in initial training will:

- Develop effective strategies for implementation of our math curricula,
- Apply student-centered classroom collaborative learning strategies,
- Develop effective scaffolding and extension questioning strategies,
- Learn how to analyze data to drive instructional decision-making, and
- Apply the big ideas of curriculum materials to plan lessons.

### Leadership Training

Leadership training is a half-day training for district leaders, coaches, and principals. It provides an overview of the tools and strategies necessary to support mathematics teachers using our instructional materials. Leaders will:

- Understand the research behind our curricula that helps students achieve success in mathematics,
- Create an implementation plan to support teachers throughout the year, and
- Learn best practices in mathematics instruction when doing a “walk through” in a Carnegie Learning classroom.

### Phase 2 - In-Classroom Support \*

Side-by-side sessions with Carnegie Learning math coaches take place within the classroom and are based on district, school, and/or teacher needs. In-classroom support is most valuable early in the year to help teachers build confidence and experience success. Our math coaches build relationships with teachers to support implementation fidelity, classroom management, program monitoring and data-driven instruction. Carnegie Learning math coaches will:

- Use teacher self-assessment to target individual teacher needs,
- Observe classrooms and/or labs to provide relevant feedback to teachers,
- Make specific recommendations to strengthen implementations,
- Analyze report data with teachers to support accountability, and
- Celebrate successes and problem-solve challenges by creating next step actions.

\* Limited to four teachers per day to allow time for pre- and post-conference sessions.


# CARNEGIE LEARNING® COMPREHENSIVE IMPLEMENTATION FRAMEWORK

Our instructional math coaches will help you develop a comprehensive professional development plan delivered in phases during the school year. The fidelity of your implementation within our recommended instructional model can make the difference between modest gains and remarkable success for your students.

### Initial Implementation Training

Phase 1  
(Weeks 6-9)


- Apply the big ideas of curriculum materials to plan lessons



### Leadership Training

Phase 1  
(Weeks 6-9)

- Create an implementation plan to support teachers throughout the year



### Custom Professional Development

- The student classroom a for enhancing discourse



### In-Classroom Support

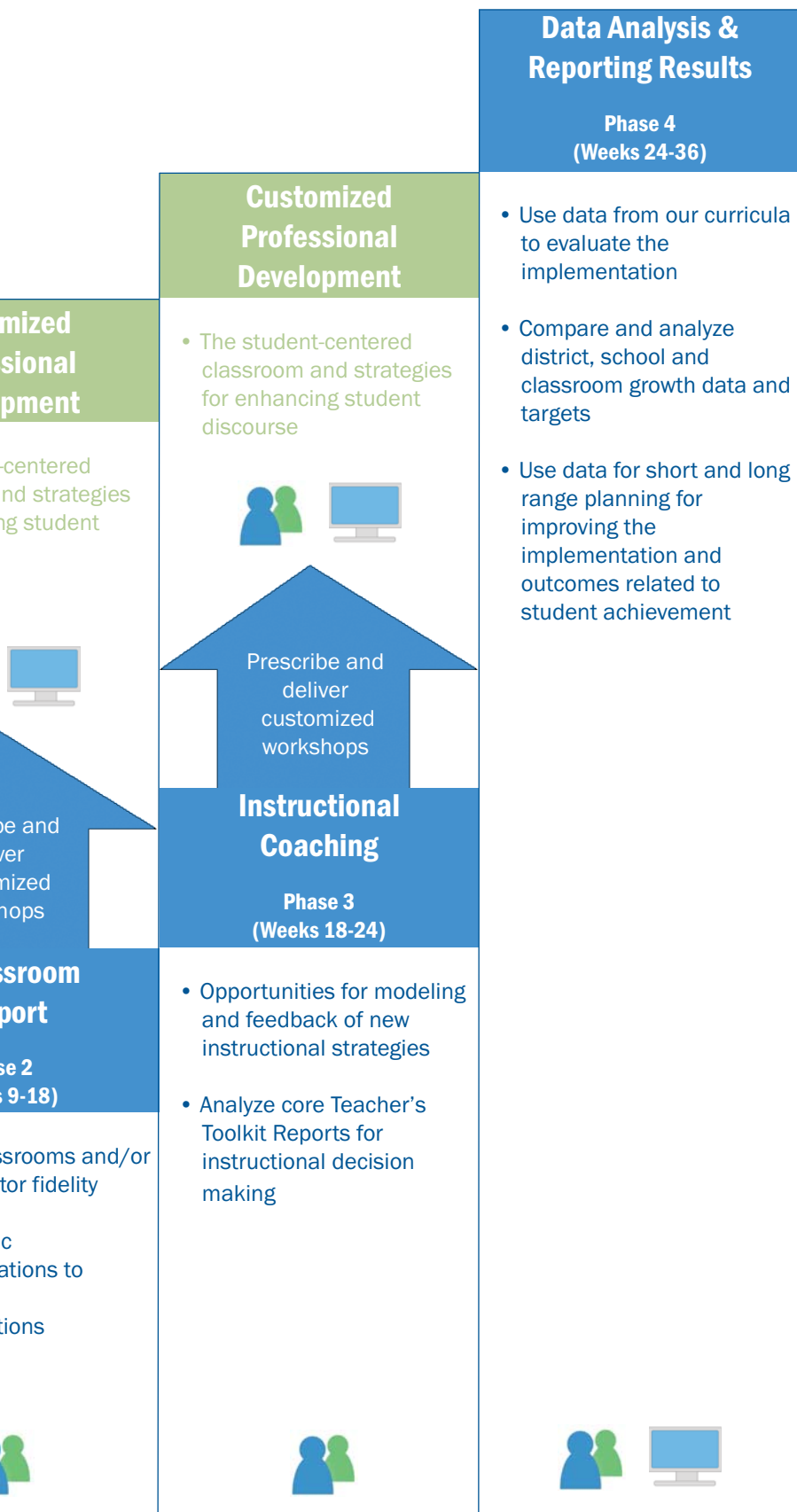
Phase 2  
(Weeks 10-12)

- Observe classroom labs to monitor implementation
- Make specific recommendations to strengthen implementation





Teachers attend on-site training sessions within their district, led by Carnegie Learning math coaches.



### Phase 3 – Instructional Coaching and Using Data to Inform Instruction

Carnegie Learning math coaches will model best practices in the classroom based on needs identified during a pre-visit conference. Math coaches will work with teachers to analyze report data from the Teacher's Toolkit software to target an individual student's needs and identify next steps for instruction, monitoring and assessment. Carnegie Learning recommends no more than four teachers per day to allow time for a pre- and post-conference. During the instructional coaching visit, Carnegie Learning math coaches will:

- Use teacher self-assessment to target individual needs,
- Assist in lesson planning and pacing to meet the mathematical goals of the course,
- Observe, model, and/or co-teach in classrooms and/or labs and provide relevant feedback to teachers, and
- Analyze Teacher's Toolkit reports for instructional decision making.

### Customized Professional Development Workshops

Based upon the self-assessment survey instruments, classroom observations, and recommendations in the in-classroom support phase of the implementation, Carnegie Learning Math Coaches prescribe and deliver customized professional development workshops to meet the specific needs and interests of teachers. Ongoing, customized Professional Development workshops include:

- The teacher's role as facilitator,
- The student-centered classroom and strategies for enhancing student discourse,
- Instructional connections between the lab and classroom,
- Investigation of student work,
- Graphing calculators,
- Chapter and lesson planning, and
- Cognitive Tutor Software tools.

### Phase 4 – Analyzing Report Data and Reporting Results

Carnegie Learning math coaches will work with you to collect and analyze data and present customized reports and graphs as needed to determine next steps. Carnegie Learning math experts can help you to:

- Use data from our curricula to evaluate the implementation,
- Compare and analyze district, school and classroom growth data and targets, and
- Use data for short and long range planning for improving the implementation and outcomes related to student achievement.



#### Live, On-Line Training

We offer live, online training sessions. Each session is two hours in length.

“ For three consecutive summers, we partnered with Carnegie Learning to provide week-long content academies to 220 teachers in kindergarten through eighth grade. Our data show that this work not only dramatically increased their content knowledge, it positively changed the way they feel about the teaching of mathematics. Our teachers talk about going from a rote understanding of procedures to a deepened understanding of concepts and from a teacher-centered delivery with worksheets to a student-centered learning environment in which students are engaged in ‘talking’ the math and discovering multiple pathways to the learning. Thank you Carnegie for helping us impact these 220 teachers and thereby thousands of students in our region. ”

Liz Storey  
Executive Director  
Green River Regional  
Education Cooperative

“ Student achievement has been impacted because students are able to make stronger connections because I am teaching relationships, not just processes. ”

Marty White  
Teacher  
Chandlers Elementary School

“ I never knew WHY we could invert and multiply. I now know and could explain it to students rather than just saying ‘because it’s a rule.’ ”

Michelle Pruitt  
Teacher  
Auburn Elementary

## K-8 Math Content Academies

Carnegie Learning offers Content Academies specifically designed to help address the following objectives:

- Strengthen K-8 teachers’ content knowledge in mathematics and
- Impact K-8 teachers’ beliefs and attitudes about teaching mathematics.

Fostering a Learning By Doing® environment is one of the hallmarks of our K-8 Math Content Academies. The benefits of incorporating this principle into our workshop design, includes:

- Participants are active learners in cohort groups;
- Teachers discover, explore, reason, share and reflect;
- Workshop activities relate to the realities of teaching in a K-8 classroom;
- Teachers’ attitudes about teaching mathematics are impacted;
- Workshops are designed for specific grade level bands (K-3, 4-5, 6-8); and
- Participants receive a Cognitive Tutor® software license to reinforce their mathematical knowledge.

Each content academy listed on the following page involves both classroom and lab work for teachers. The content academies range from 3-5 days in length. A list of the content academies follows:

### >> Grades K-3 Teachers

- Number Properties and Integers Mini Academy (3 days)
- Early Fraction Concepts Mini Academy (3 days)
- Connecting Decimals and Percents to Fractions Mini Academy (3 days)

### >> Grades 4-5 Teachers

- Developing Mathematical Understanding (5 days)
- Connecting Decimals and Percents to Fractions Mini Academy (3 days)
- Proportional Reasoning and Linear Relations Mini Academy (3 days)

### >> Grades 6-8 Teachers

- Developing Algebraic Thinking ( 5 days)
- Proportional Reasoning and Linear Relations Mini Academy (3 days)



Content Academy Workshop Title	Big Math Ideas Covered	Recommended Grade Bands*	Workshop Length
<b>Developing Mathematical Understanding</b>	<ul style="list-style-type: none"> <li>Analyzing mathematical tasks</li> <li>Meaning of fractions</li> <li>Fractional parts of region</li> <li>Fractions as parts of wholes</li> <li>Fractions as divisions</li> <li>Equivalent fractions</li> <li>Comparing and ordering fractions</li> <li>Divisions for whole numbers and fractions</li> <li>Comparing beyond subtraction: ratio, rate and proportional reasoning</li> </ul>	For teachers instructing in grades 4-5	5 days. Days 1 and 2 must be delivered consecutively. Days 3-5 can be scheduled flexibly.
<b>Developing Algebraic Thinking</b>	<ul style="list-style-type: none"> <li>Analyzing mathematical tasks</li> <li>Multiple representations</li> <li>Comparing beyond subtraction: ratio, rate and proportional reasoning</li> <li>Multiple representations of linear functions</li> <li>Putting it all together: Compare and contrast linear, quadratic, and exponential functions</li> </ul>	For teachers instructing in grades 6-8	5 days. Days 1 and 2 must be delivered consecutively. Days 3-5 can be scheduled flexibly.
<b>Early Fraction Concepts</b>	<ul style="list-style-type: none"> <li>Analyzing mathematical tasks and creating fraction representations</li> <li>Comparing fraction representations and operating with fractions</li> <li>Working with ratios</li> </ul>	For teachers instructing in grades K-3	3 days. Days 1 and 2 must be delivered consecutively. Day 3 can be scheduled flexibly.
<b>Number Properties &amp; Integers</b>	<ul style="list-style-type: none"> <li>Analyzing mathematical tasks and whole number properties</li> <li>Powers, factors, integers</li> <li>Operations with integers</li> </ul>	For teachers instructing in grades K-3	3 days. Days 1 and 2 must be delivered consecutively. Day 3 can be scheduled flexibly.
<b>Connecting Decimals &amp; Percents to Fractions</b>	<ul style="list-style-type: none"> <li>Analyzing mathematical tasks and operations with decimals as special fractions</li> <li>Decimal operations and percents</li> <li>Algebra connection</li> </ul>	For teachers instructing in grades K-5	3 days. Days 1 and 2 must be delivered consecutively. Day 3 can be scheduled flexibly.
<b>Proportional Reasoning &amp; Linear Relationships</b>	<ul style="list-style-type: none"> <li>Proportional reasoning and writing equations</li> <li>Multiple representations of linear functions</li> <li>Data analysis</li> </ul>	For teachers instructing in grades 4-5	3 days. Days 1 and 2 must be delivered consecutively. Day 3 can be scheduled flexibly.

\* The math content academies are also applicable to teachers working with special student populations wishing to improve their math content knowledge.

### **Carnegie Learning K-8 Math Content Academies Increase Teacher Content Knowledge**

The Green River Regional Education Cooperative (GRREC) is a service provider for 33 South Central Kentucky school districts. GRREC provides professional development opportunities for teachers and emphasizes training as a crucial step in improving the value and efficiency of instruction that students receive.

GRREC approached Carnegie Learning about improving the mathematical understanding of their K-8 teachers. With the support of the Kentucky Department of Education, GRREC teamed up with Carnegie Learning in 2006. Over a 3-year period, over 220 teachers participated in week long math content academies.

At the end of the 3-year program, the results showed that participants who attended the workshop all three years showed a significant increase in their algebra content knowledge as measured by pre and post tests. In addition, there was also a significant increase in positive attitudes towards the teaching of mathematics.

**The instruction delivered by Carnegie Learning has impacted my classroom teaching by showing me how to connect transformations to what they will be learning in higher math classes.**

**Jenni Chobot-Fansler**  
Teacher  
Auburn Elementary, KY

**I am more conscious of trying to help children see why something is the way it is, and more into explaining the process. I also encourage them to try to express their understandings in some way.**

**Reta Kelly**  
Teacher  
North Hancock, KY

**I have learned so much about how to approach the teaching part of math. To foster a student centered classroom and to not give students the answers, they will figure it out on their own and/or with help from their peers, which is often more important than what I can say.**

**Tina Higdon**  
Teacher  
Careyville School, KY

## Carnegie Learning® Capacity-Building Solutions

Carnegie Learning math experts provide training for district math coaches, math leaders and coordinators who will be implementing Carnegie Learning Curricula. These district or school staff members can then monitor fidelity of implementation and support classroom teachers with research-based mathematics teaching strategies through the Carnegie Learning® Certified Mathematics Instructional Specialist Training Program.

This “train the trainer” program includes:

- >> Experiencing text and software to understand what students encounter,
- >> Discussing how to foster an environment centered around student engagement,
- >> Learning strategies to encourage classroom discourse,
- >> Examining formative and summative assessments, and
- >> Questioning strategies to connect student understanding between classroom and lab.

## Funding Sources For Professional Development

There are a number of federal and local funding sources for professional development, including:

- >> Title I, Part A: Improving Basic Programs,
- >> Title II, Part A: Teacher and Principal and Recruiting Fund Training,
- >> Title II, Part B: Mathematics and Science Partnerships,
- >> Title V, Part A: Innovative Programs,
- >> Title V, Part B: Charter-School Programs,
- >> 21st Century Community Learning Centers, and
- >> State and local funding sources,

For more information on Carnegie Learning Professional Development Solutions, please contact a sales representative at 888.851.7094 or [info@carnegielearning.com](mailto:info@carnegielearning.com).



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