

## Algebra: Introducing Algebraic Reasoning

Research suggests that math topics, including algebra, should be taught at all levels, not just when a student is ready for GED preparation. In this course, you'll learn how to introduce algebraic reasoning to your students, and you'll experiment with strategies for teaching numeric patterns, relationships, and functions based on real-life situations. You'll also explore strategies to help students model quantitative relationships using graphs, tables, words, and equations. By the end of the course, you will be able to

- use strategies for introducing pre-algebra concepts
- explore, identify, analyze, and extend patterns in various contexts
- describe and represent numbers using words, tables, rules, and equations
- recognize and use algebraic symbols to model mathematical and contextual situations
- analyze change in various qualitative contexts

### Course Topics

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| • The Importance of Algebraic Thinking | • Visual, Numerical, and Algebraic Patterns |
| • Notation, Operations, and Symbols    | • Situational Patterns                      |
| • Order of Operations                  | • In-Out Tables                             |
| • Integers                             | • Words in Algebraic Expressions            |
| • Equality and Inequality              | • Algebraic Equations                       |
| • Substituting Values                  | • Equation Applications                     |
| • Algorithms                           | • Algebraic Tables and Graphs               |
| • Solving Equations                    | • Qualitative Graphs                        |

This course is part of a six-part series of online courses focused on effective adult numeracy instruction. Other courses in this series are:

- *Foundations of Teaching Adult Numeracy*
- *Teaching Reasoning and Problem-Solving Strategies*
- *Number Sense: Teaching About Parts and Wholes*
- *Geometry: Teaching About Shapes and Their Measures*
- *Data: Helping Students Interpret Statistical Representations*

**Prerequisite:** Foundations of Teaching Adult Numeracy or comparable experience

**Course Format:** facilitated, online

Throughout this six-week course you will follow a weekly schedule of activities and readings, as well as asynchronous electronic discussions with the facilitator and course participants.

**Estimated Completion Time:** approx. 2-3 hours per week; 12 hours total

**Completion Requirements:** Successful completion requires participants to complete required assignments, participate in asynchronous discussion, and score at least 80% on the course exam. Participants may download a Certificate of Completion upon successful completion of course requirements.

Participants are encouraged to seek approval in advance from their agency or organization for continuing education or professional development credits that may be awarded for successfully completing this online course.

**Course Fee:** \$179 (\$152.15 for ProLiteracy members. Group discounts available.)

**Questions?** Please call 888.528.2224 ext. 283 or e-mail [prodev@proliteracy.org](mailto:prodev@proliteracy.org).

**For information about upcoming course dates and registration,  
please visit [ProfessionalStudiesAE.org](http://ProfessionalStudiesAE.org).**