

Intervene: Early Algebraic Thinking

Strategies to help all students, particularly those with learning difficulties in math: [Math Accessibility Strategies](#)

The materials here will focus on the meaning of the equal sign, the meaning of variables and understanding the properties of numbers and operations.

Intervention should include experiences where students:

- Generalize properties of operations and other relationships through repeated reasoning
- Understand roles of variables through explicit instruction and repeated reasoning
- Use the Concrete - Semi-Concrete - Abstract approach or other similar approaches to connect representations as an instructional strategy

LEAP is a set of lessons focusing on all three aspects of Algebraic Thinking.

- Booklets are specified for Grades 3, 4 and 5, though can be used for intervention at grades above 5th.
- [Purchase information](#) (very affordable)
 - Click on the book title to see more detail and download a sample lesson.
 - Watch the 6 minute video on any one of the webpages of the individual books.
- [Webinar recording](#) about the product

Equals Sign

You can learn more about why students have difficulties with this at [Understanding the Equals Sign](#).

Possible Interventions:

A set of 4 instructional moves to use to address this unfinished learning:

<https://iei.nd.edu/cladlab-icue>

Many educators successfully address needs in this area by using math talks. A math talk is any one of a number of short (3-5 minutes) routines.

- [True/False Equations](#)
 - Training, along with videos, and some implementation materials are here.
 - Let the grade level and content inform the equations you provide to students.
 - Vary the position of the equal sign.
 - Vary the position of the unknown.
 - Include equations with operations on both sides.
- Here is a prepared set of starter slides: [True/False Equations - Slides](#)
- Short [video](#) supporting understanding inequality signs
- For older students, try this intervention: [Relational Thinking Intervention with Play Money](#)

Variables

You can learn more about why students have difficulties with this at [Understanding Variables](#) or by engaging in this interactive learning activity: <https://app.peardeck.com/student/tjinvqkiw>.

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Algebraic Properties

Algebraic properties include:

- Commutativity
- Associativity
- Distributivity of multiplication over addition

Learn more about these properties and others at [Understanding Algebraic Properties](#).

Possible free instructional resource: Gap Closing Intermediate; [Module 5: Multiplying and Dividing](#).

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