SPECIAL ED

# Introduction to Algebra
## What is X?

$$6 + X = 10$$

INCLUDES GOOGLE SLIDES

# For students who:

- lack pre-requisite skills
- take alternate assessments
- are in special education
- short-attention span
- benefit from the use of pictures for support
- middle/high school

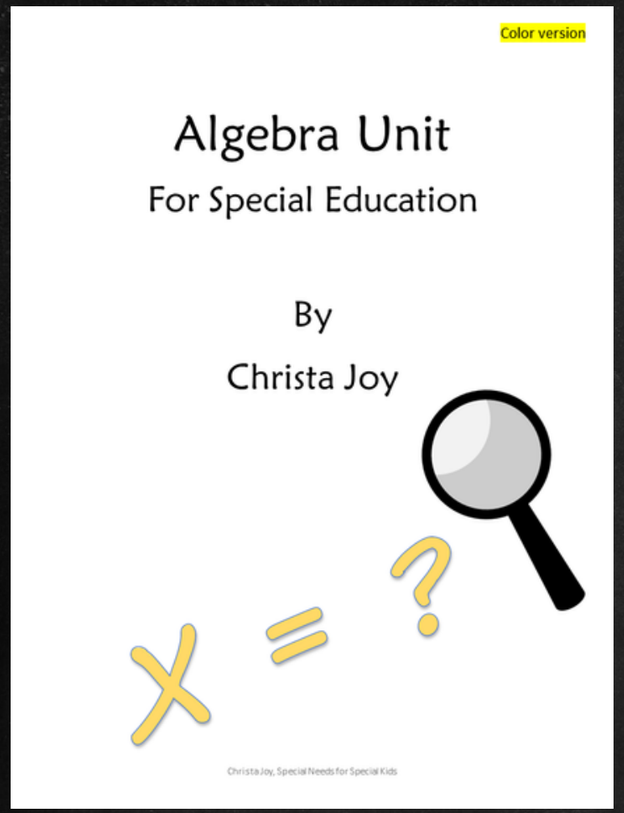
This unit gives students practice:

- balancing equations
- isolating the variable x
- solving for x

Book to explain the process

Uses manipulatives to allow students to "see" the problem in action.

Individual and group activities




# Introductory unit

## Table of Contents



Also included in this resource as separate files:

- Lesson plans
- Links and directions to digital activities
- PowerPoint **(this is the book in the lesson plan)**
- Voice recorded PowerPoint
- Activities in black and white



This unit contains over 100 pages of material and 62 google slides. I have a lesson plan to help you make the most of everything in this unit including how to add some group activities.

Each day follow this format: (continue until you feel students can solve equations on their own but still using manipulatives)

| Activity | Notes | Materials |
|---|---|---|
| Read or listen to the movie version of the book (15 minutes) | • Read through the story, asking lots of questions<br>  o Continue to make connections between book and previous knowledge | • Book |
| Group Activity (15 minutes) | • Using the large-scale equation worksheets work through as many problems as a group that feels appropriate<br>  o Use the equation worksheet that is differentiated with dashed lines for students who need more support.<br>• Option 1: give each student their own equation worksheet and a set of manipulatives. Each person works through the problem themselves but in a group setting.<br>• Option 2: teacher has the equation worksheet and students have manipulatives. Work as a group to solve the problem on one equation sheet. | • Equation worksheets<br>• Problem strips<br>• Number cards<br>• X markers or round counters |
| Review (5 minutes) | • Review any worksheet or problem done yesterday | • Completed worksheet from yesterday |
| Solving for X (10 minutes) | • Each student will complete one worksheet or 2 problems per day.<br>• Cut apart the pages if students are easily overwhelmed and give them just one problem at a time.<br>• Give students access to manipulatives or they can draw the problem out.<br>• Make sure students check their answers, ensuring both sides are the same and the equation is balanced | • Worksheet<br>• Pencils<br>• X markers or counters (optional) |
| Sharing (10 minutes) | • Each student shares one of their finished worksheets with the group using the communication method of their choice | • Completed worksheets<br>• Communication devices |

The lesson plans contain:

- Preparation needed
- Overall tips for teaching students with significant needs
- Daily flow of the lesson including individual and group activities

1. Both sides of the equation must have the same value.

The equation must be balanced to be true.

So for this problem, we know that the left and right side of the equation must both be equal to a value of 12.

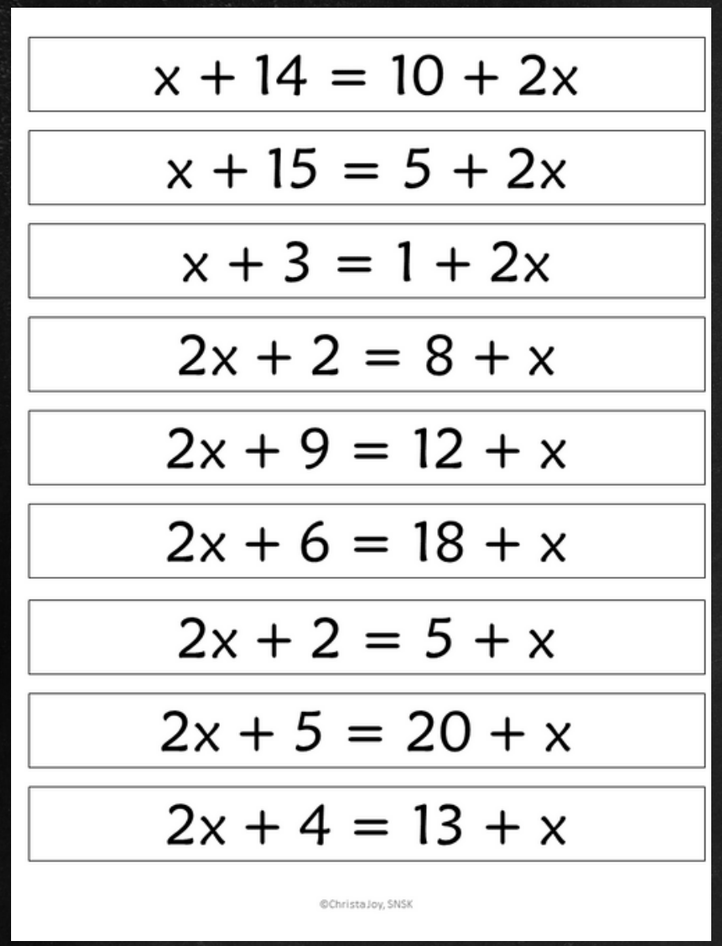
$$\underbrace{8 + x}_{12} = \underbrace{12}_{12}$$

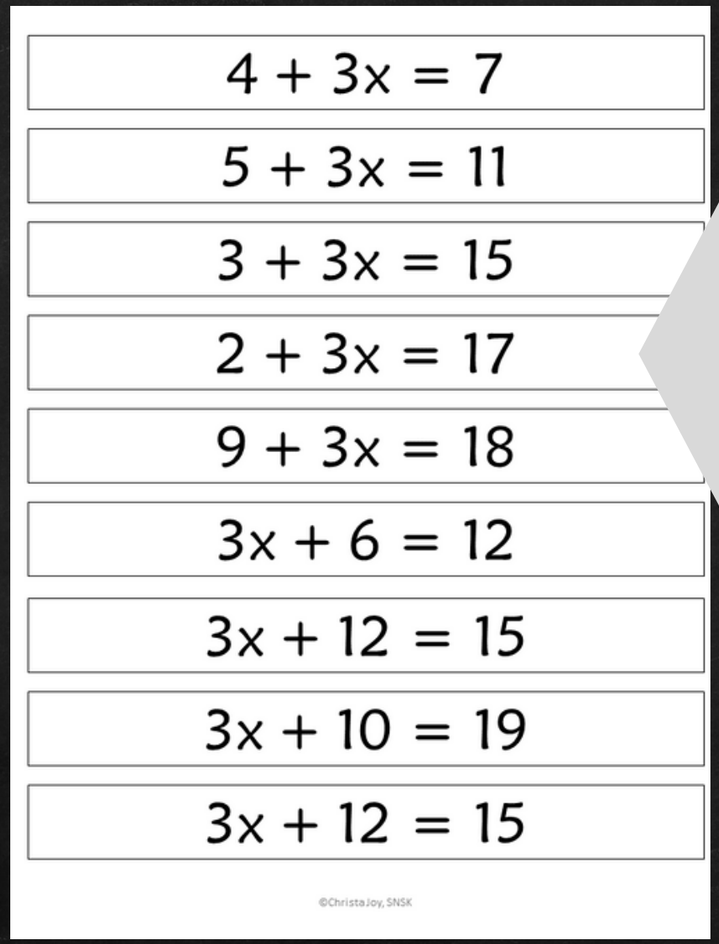


There is a 36 page book using simple text and photos. It walks students through the steps to solve for x by balancing both sides of the equation.

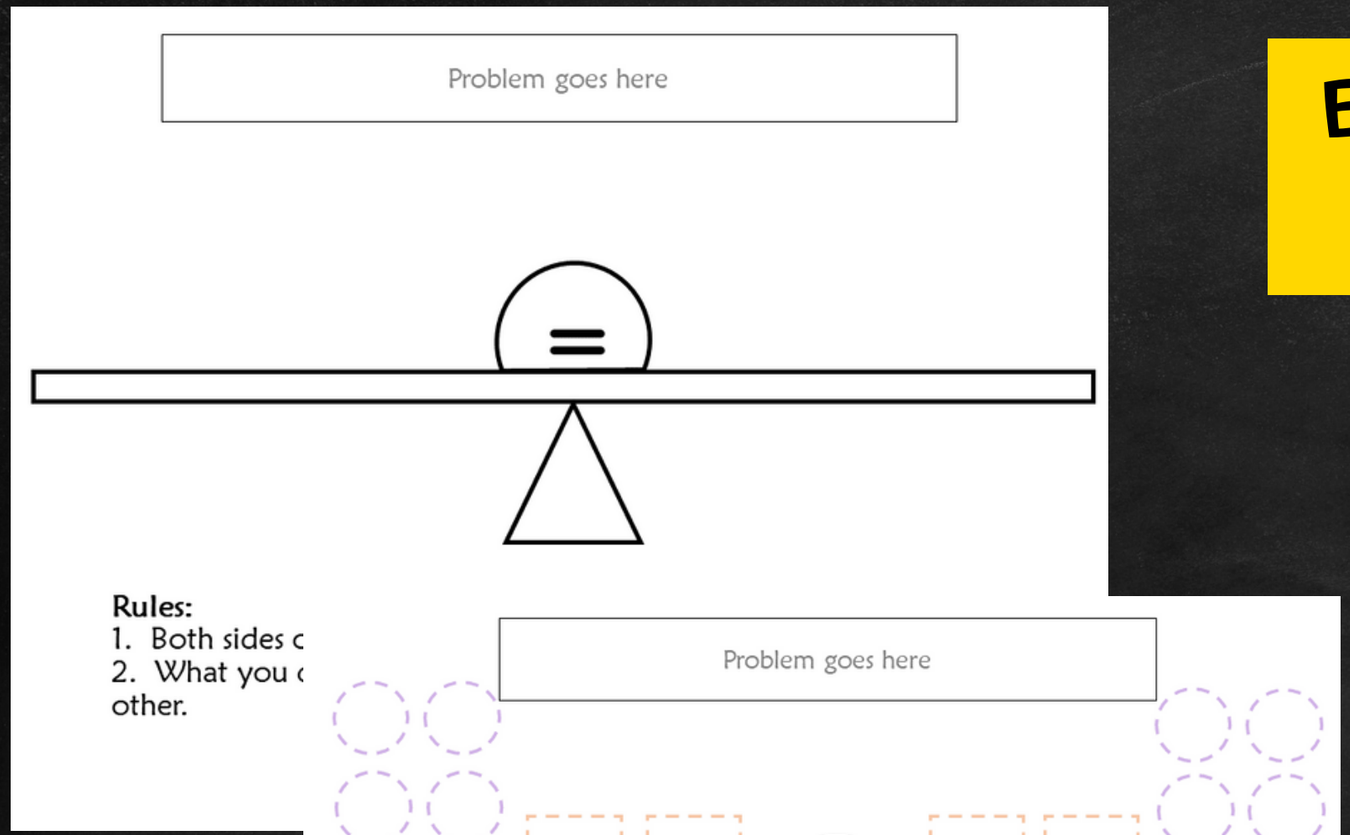
- PowerPoint
- voice-recorded PPT
- mp4 movie format

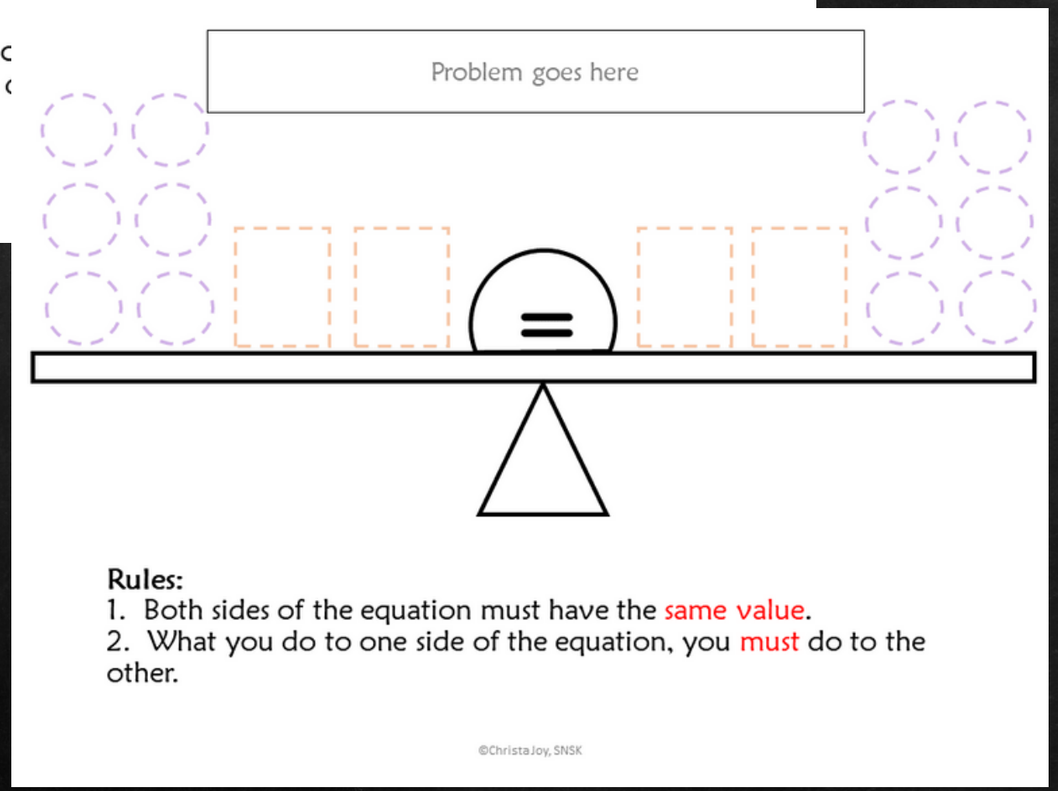
# practice problems for group activity




There are teacher directions and 45 practice problems to use for group activities. You will cut out and laminate these.



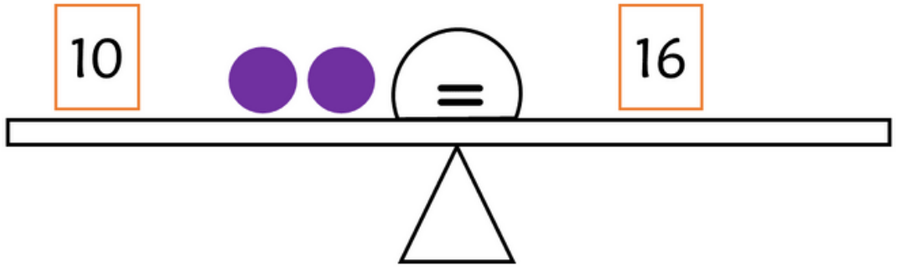




# Equation scales to use in group activity

There are manipulatives the students will use to solve the problems.

- Equation scales (includes differentiated version)
- Number cards
- X markers
- template cards

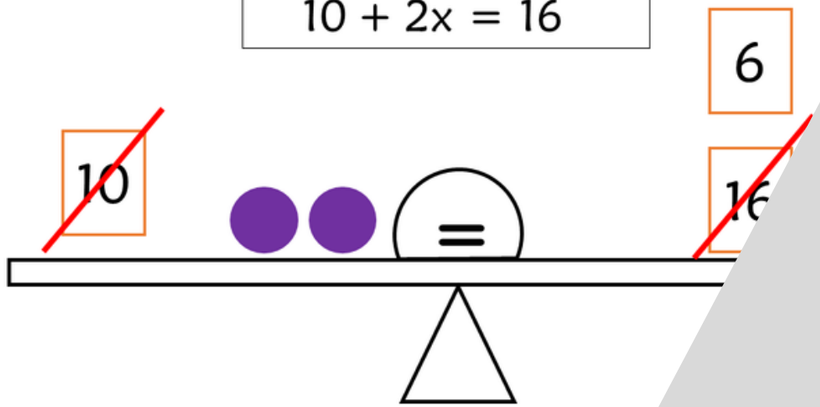
$10 + 2x = 16$




**Rules:**
1. Both side
2. What yo
other.

This problems assumes your students have some basic knowledge of simple facts such as 3+3=6

$10 + 2x = 16$

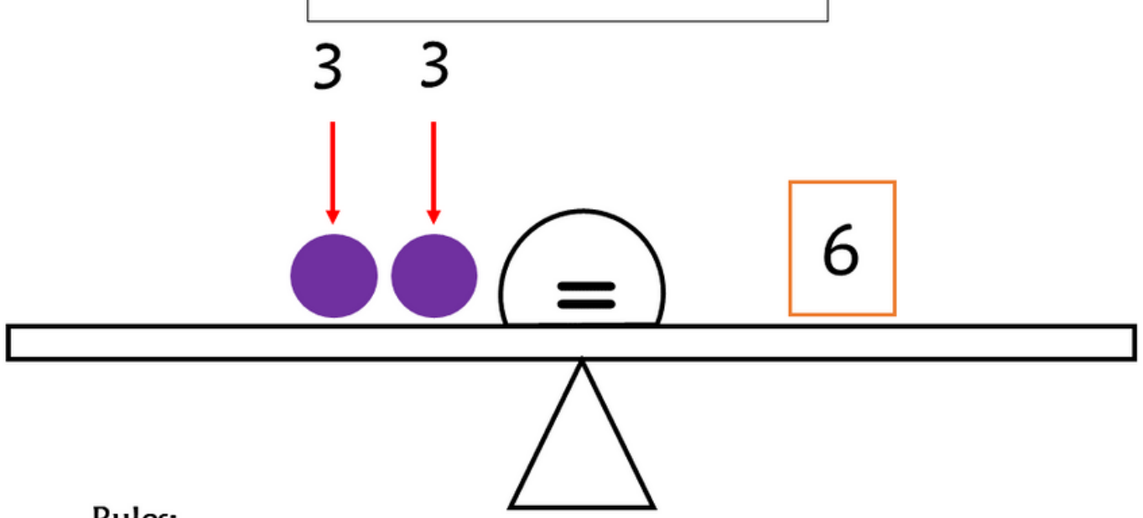



**Rules:**

ıust have the same
the equation, yo

ristaJoy, SNSK

$10 + 2x = 16$




**Rules:**
1. Both sides of the equation must have the same value.
2. What you do to one side of the equation, you must do to the other.

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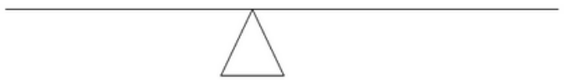
There are 2 sample problems worked out step by step to guide teachers through the process.

Name: _____

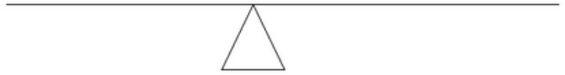
Solve the problem by drawing it in the box provided

$18 = 6 + 6x$



X = ☐

$17 = 8 + 3x$



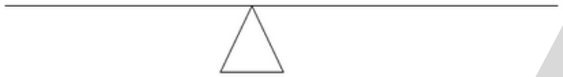
X = ☐



Name: _____

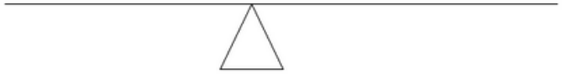
Solve the problem by drawing it in the box provided

$6 + 4x = 14$



X = ☐

$3 + 5x = 18$



X = ☐



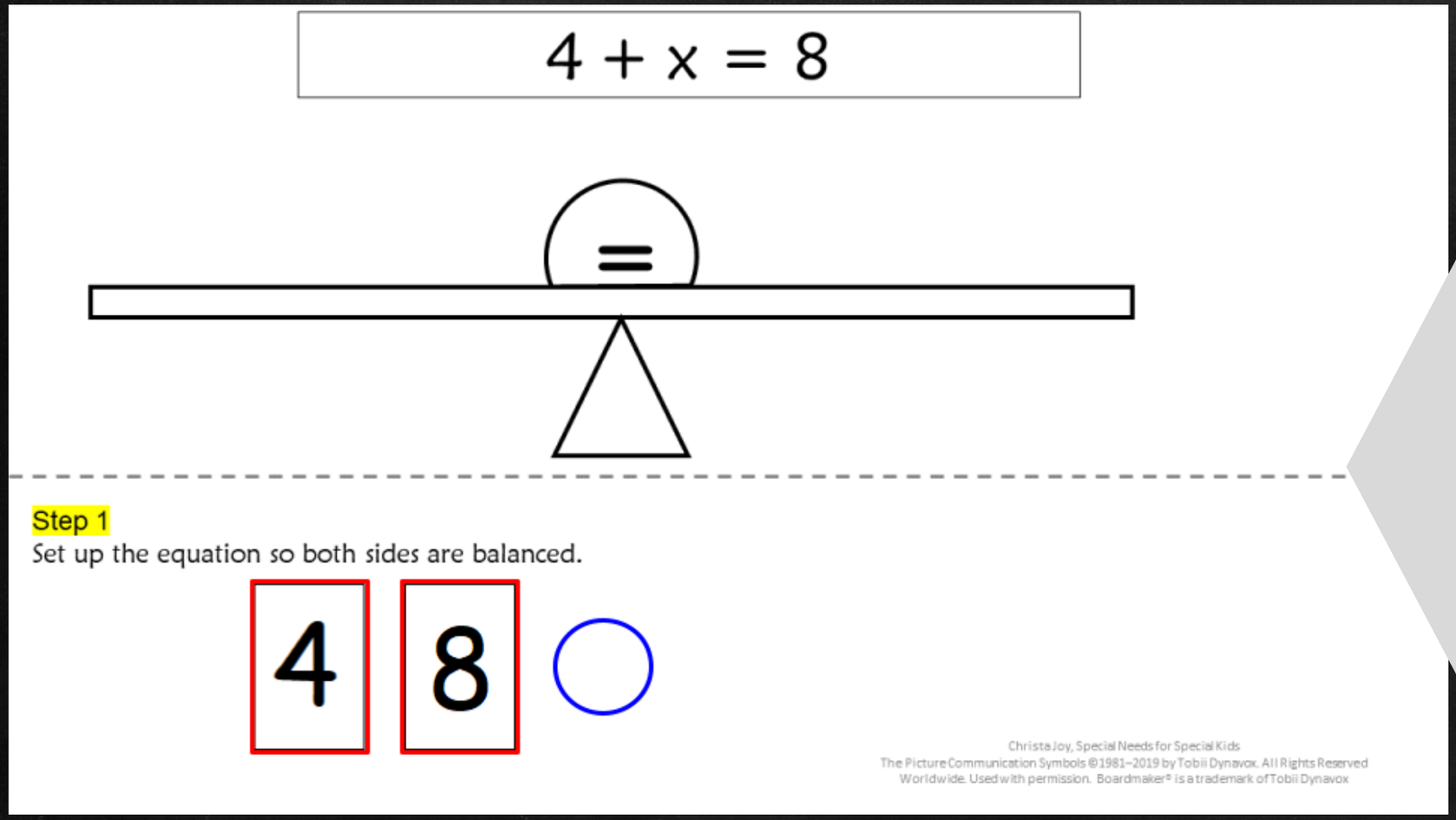
# worksheets

There are 20 problems meant for students to solve individually using the manipulatives.

Watch the movie on solving for X


This unit also has digital activities. There is a movie version of the book students can listen to read aloud.

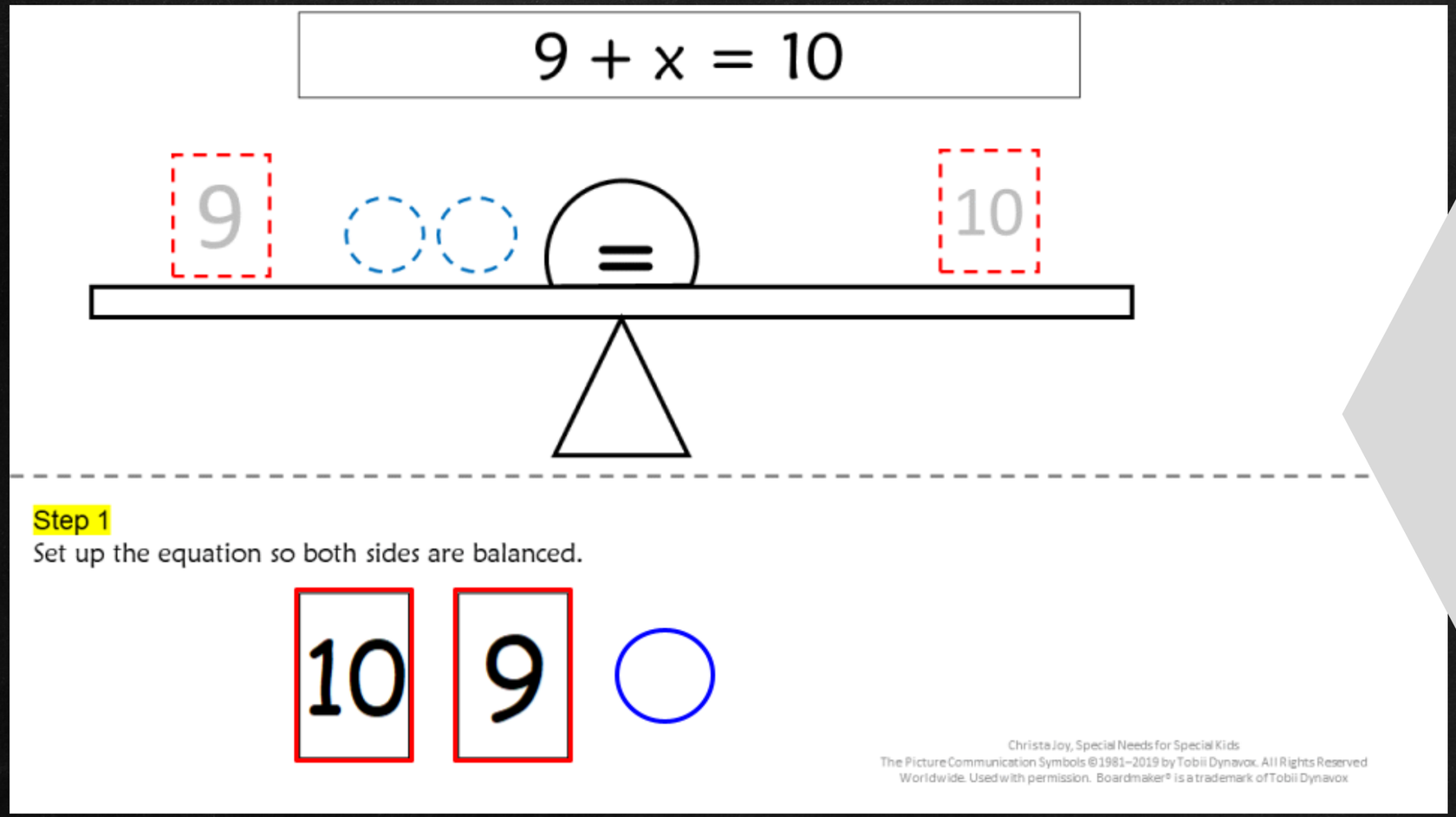
# Great for review






The digital activities have students click and drag their answers. There are 2 sets slides.

# Perfect for all learning levels






The second set of slides is differentiated using either color or numbers for students to match to.

This resource comes in a zipped folder.  You will need to unzip the folder to access all the contents which include:

- Lesson plan
- Algebra activities in BW
- Algebra activities in color
- What is X? book (PowerPoint) to use with activities
- Links and directions to digital activities

Save money and get this unit in a bundle with more advanced algebra units.

**Algebra Bundle**