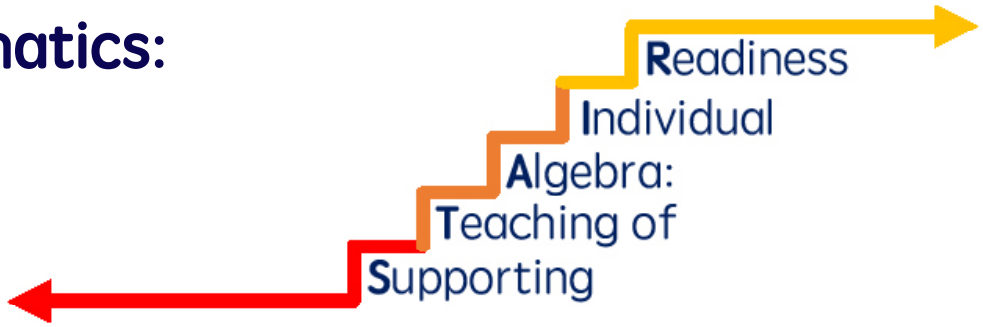
Ideas in Mathematics:
Inequalities



Concepts to Know:

Think of the equal sign as a balance.
- Both sides of the equation are equivalent

Initially, students think of the equal sign as operational, meaning they have to do something.

As they mature, students begin to develop a relational–computational view in which they understand the equal sign a relation between two answers, but the only way to determine if the two sides are equal is by solving via computation.

Finally, students develop a relational–structural view in which they can use the relationships between the two sides of the equal sign without needing to solve via computation.

Strategies to Teach Inequalities

Use the number line as a visual tool

- Provide context to word problems
  - Money is a great way to explain inequalities in real life. If I have $100.00 and want to get my 4 friends the same gift, how much money can I spend on each person?
- Ask students to create real life problems in which they need to solve using inequalities

Activities to Try:

- Have students stand up and put their arms out, imagining both sides of the arms are one half of a scale. Ask students to pretend they are given weighted objects (e.g., an apple or orange) one at a time to hold in each hand. Have them move their arms up and down to demonstrate adding weights/balancing weights between both sides.
- **Tilt/ Balance Activity**
  - Students are provided with equations written out on a balance beam and have to decide if the balance will tilt to one side or balance out. Initially, the equations can all be written with equalsigns and students can decide if they are true or false. With practice, the symbol can be removed, and students can then add an appropriate greater than/less than sign to make the statement true.
  - The same graphic can be used with solving for equations

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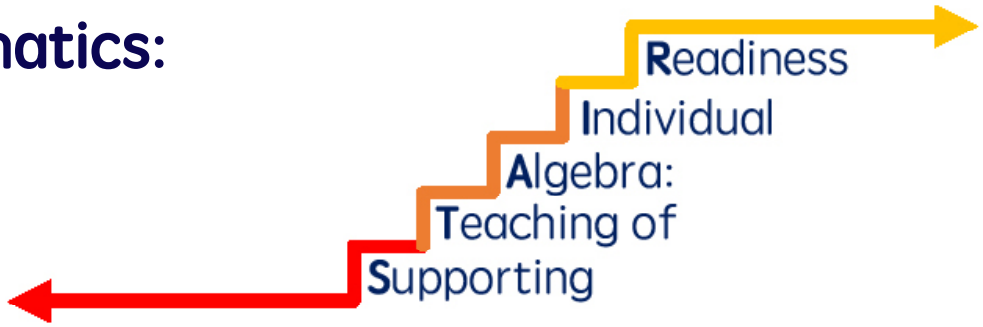
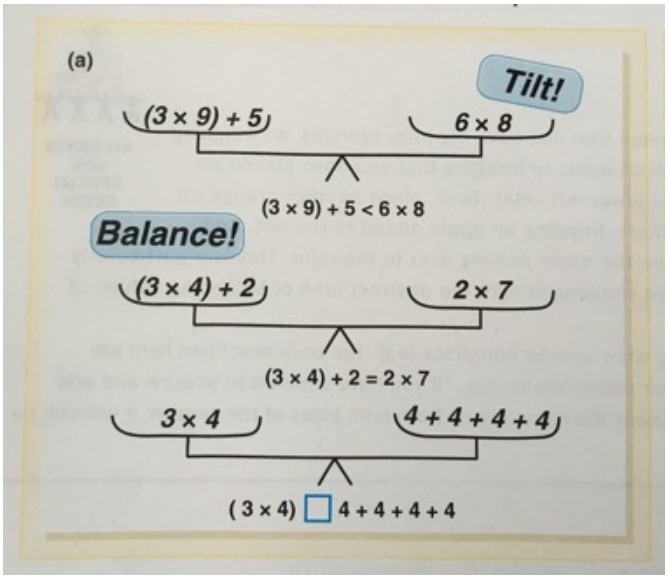
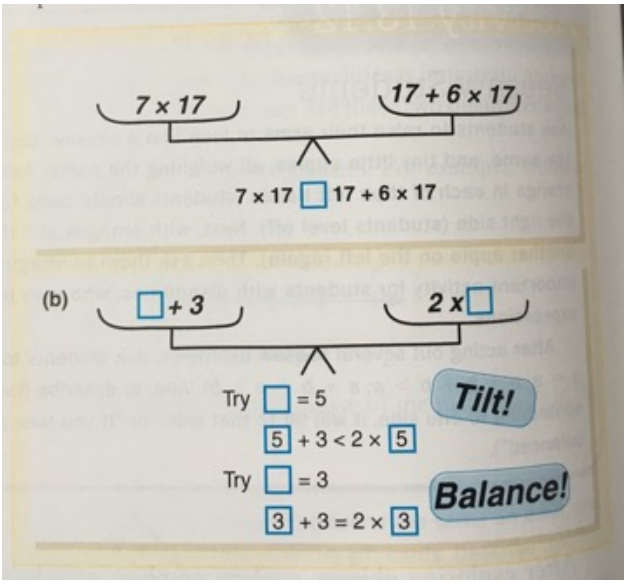
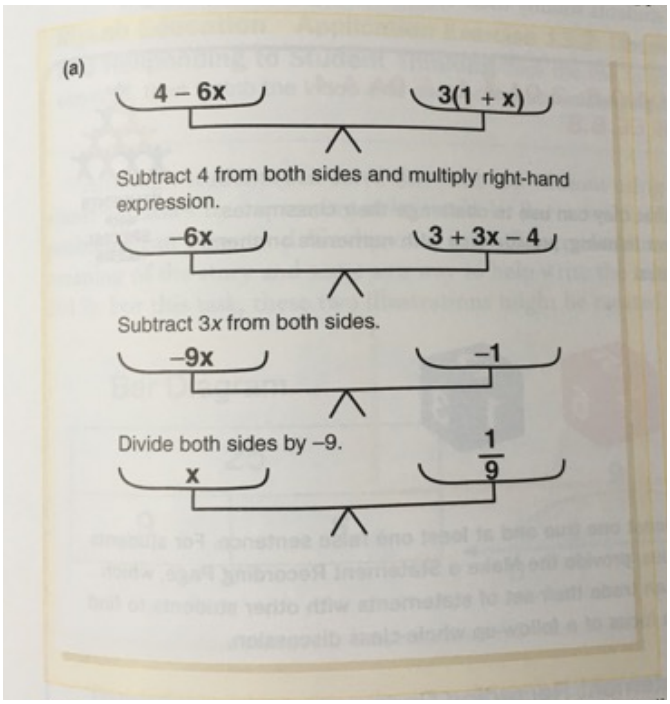
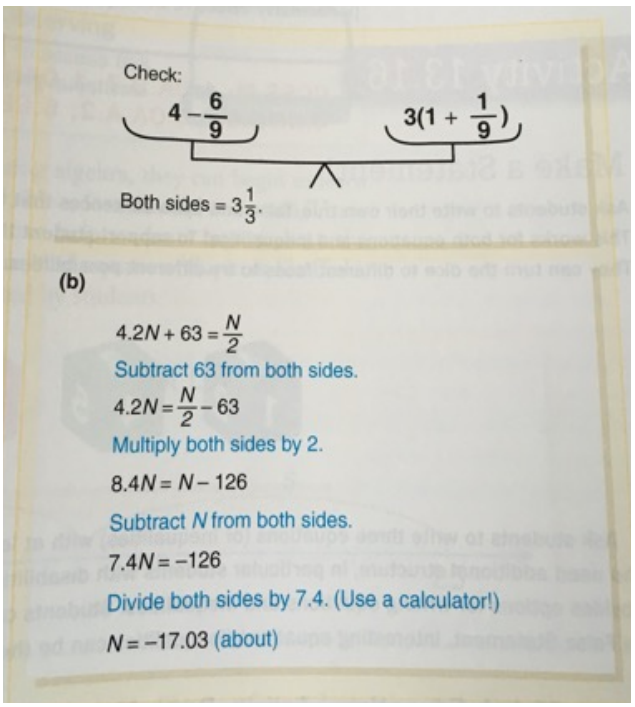






Van De Walle et al., (2019)





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