Missing Number

Summary

This lesson focuses on using a symbol/shape variable to represent a missing value in a mathematical equation.

Main Core Tie

Mathematics Grade 1

Strand: OPERATIONS AND ALGEBRAIC THINKING (1.OA) Standard 1.OA.8

Additional Core Ties

Mathematics Grade 1

Strand: OPERATIONS AND ALGEBRAIC THINKING (1.OA) Standard 1.OA.6

Mathematics Grade 1

Strand: OPERATIONS AND ALGEBRAIC THINKING (1.OA) Standard 1.OA.7

Materials

- *Fish Eyes*
  , by Lois Ehlert
- *One Less Fish*
  , by Allan Sheather
- Symbol Cards (pdf)
  - large and small
- Number Cards (pdf)
  - large and small

  Two paper bags
- Missing Number - Addition (pdf)
  - independent practice pages

Additional Resources

Books

- *M&M's Counting Book*
  , by Barbara Barbieri McGrath; ISBN 0-88106-853-5
- *Hershey's Kisses Addition Book*
  , by Jerry Pallotta; ISBN 0-439-24179-1
- *Hershey's Kisses Subtraction Book*
  , by Jerry Pallotta; ISBN 0-439-33779-8
- *Counting Crocodiles*
  , by Jody Sierra and Will Hillenbrand; ISBN 0-15-200192-1
- *Fish Eyes*
  , by Lois Ehlert; ISBN 0-440-846-47-1
- *One Less Fish*
  , by Allan Sheather; ISBN 0-613-08482-9
- *Mathematickles*
  , by Betsy Franco; ISBN 0-689-84357-7

Student Prior Knowledge

Students need to be proficient with the addition and subtraction of numbers 0-10.

Intended Learning Outcomes

2. Develop social skills and ethical responsibility.
5. Understand and use basic concepts and skills.

Instructional Procedures

Invitation to Learn

Read the story *Fish Eyes* (for addition) or *One Less Fish* (for subtraction). As the story progresses, stop at each page and write the equation represented using a variable for the answer. Have the students come up with the missing value for the variable. Use a different shape symbol for each page so students get the idea that a variable can be represented many different ways.

Instructional Procedures

Whole Group Activity

Show a variety of symbols/shapes to students and teach them that the shape's job is to hold the place of the missing value or number. Make sure they have made the connection to how it was used in place of the missing sum or difference in the story.

Have the large *Symbol Cards* and *Number Cards* in separate paper bags. Select two students to pick numbers from the number bag and one student to pick a symbol. Also, select two students to be the addition or subtraction sign and the equal sign.

Have selected students put themselves in the correct order to form an equation. Have another student give the sum or difference of the equation. Repeat this process several times.

After the activity, using the small *Number Cards* and *Symbol Cards*, repeat the process by placing addends or minuends on the board to the left of the = sign with a shape on the right of the = sign, forming an equation.

Students provide the missing sum or difference by writing it on the shape, or use number tiles for students with writing deficiencies. Repeat this process until the students understand the meaning of the shape.

Switch the placement of the addends or minuends to the right of the = sign and the shape on the left, forming the reciprocal of the equation, and allow students to provide the missing sum or difference again. Repeat as needed for students to clearly understand.

Small Group Activity

Distribute *Missing Number* independent practice pages to students.

With a partner, students practice making mathematical sentences with a group of numbers 0-9 and an assortment of shapes.

Students write the sum or difference (depending on the worksheet) on the shape.

Hint: Carefully select addends so sums will not be higher than 12 and minuends so differences will not be negative. Watch carefully how students represent subtraction equations.

Extensions

Place the shape in place of one of the addends or minuends in a mathematical sentence to extend as a follow-up lesson.

This lesson provides the background information needed for a lesson on addend order (Standard 2, Objective 2,c).

Family Connections

Encourage the students to either play the game at home and/or share with their parents what they have learned.

Assessment Plan

Observe during the lesson which students are able to represent an equation with the proper symbols and which students may need teacher assistance during the partner-guided practice. Partner those students who struggle with a student who understands, using them as a peer tutor. Use the partner-guided practice as an informal assessment tool. Note which students may need extra help.

Authors

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