

Addition Properties



EXTEND LANGUAGE

Objective Use addition properties to find sums.

Vocabulary Addend, Commutative (Order) Property, Associative (Grouping) Property, Identity Property

ESL Strategies

Use before CHECK ✓

10 MIN

Focus on Meaning ➤ Guide students in a discussion about the everyday meaning of property. **Things that belong to you are your property. What kinds of things are your property?** (*Sample answers: My clothes, my pencil, my bookbag, and so on*) Tell students that we can also use the word property to talk about ideas that belong to addition. Focus students' attention on the names of the properties. **The Commutative Property is also known as the Order Property. What can the word order mean?** (*Sample answers: What comes first, then second, etc.; putting things in their places*) **Which meaning tells you that you can add addends in any order?** (*What comes first, then second, etc.*) Write $8 + 4 = 12$ and $4 + 8 = 12$ on the board. Tell students that both equations, though written differently, have the same sum.

The Associative Property is also called the Grouping Property. What does the word group mean? (*Sample answers: Things that are kept together; a club*) **Which meaning tells you that you can group addends in any way?** (*Things that are kept together*) Write $(5 + 4) + 3 = 12$ and $(3 + 5) + 4 = 12$ on the board. Explain to students that, though the numbers are grouped differently, they have the same sum.

Lead a discussion about the word *identity*. **Your identity is who you are.** Tell students that the Identity Property shows that a number has an identity too. Adding zero to the number doesn't change what the number is. Write $6 + 0 = 6$ on the board to illustrate the Identity Property.

Relating Addition and Subtraction



EXTEND LANGUAGE

Objective Use the inverse relationship between addition and subtraction to write related sentences, solve problems with missing numbers, and verify solutions.

Vocabulary Fact family

ESL Strategies

Use before LEARN

10 MIN

Focus on Meaning ➤ Discuss the everyday meaning of *fact* with students. **What is a fact?** (*A fact is something that is true.*) Ask the students for facts that they know. (*Sample answer: There are 7 days in a week.*) **What is the meaning of fact in math?**

(Sample answers: When you add two numbers there is only one sum; when you subtract a number from another, there is only one difference.) Invite students to provide an example of a mathematical fact. (Sample answers: $3 + 3 = 6$; $10 - 6 = 4$)

Discuss the everyday meaning of *family*. **Who are the members of your family?** (Sample answer: *Mother, father, brother, sister*) **You are related to these people because they are in your family.** Tell students that math facts can be related too. **The facts $4 + 1 = 5$ and $5 - 1 = 4$ are related facts because they have the same numbers. They are part of the same fact family.**

Find a Rule

ACTIVATE PRIOR KNOWLEDGE/BUILD BACKGROUND; ACCESS CONTENT



Objective Complete tables representing patterns, and give the rules for the patterns.

Vocabulary Pattern

ESL Strategies

Use before **LEARN**

10–15 MIN

Connect to Prior Knowledge of Math

Write 3, 7, 11, 15 on the board. Point to the 3. **Which operation would you use to get from 3 to 7?** (Addition) **What number would you add?** (4) Point to the 7. **What would you do to get from 7 to 11?** (Add 4 again.) **To 15?** (Add 4 again.) **Adding 4 each time is the rule for this pattern. What number comes next in the pattern?** (19) **How do you know?** (Follow the pattern; add 4 to 15.)

Write 30, 25, 20, 15 on the board. Point to the 30. **Which operation would you use to get from 30 to 25?** (Subtraction) **What number would you subtract?** (5) Point to the 25. **How can you get from 25 to 20?** (Subtract 5 again.) **Do you see a pattern?** (Yes; subtract 5 each time.) **What is the next number after 15?** (10) **How do you know?** (Follow the pattern; subtract 5 from 15.)

Use Small-Group Interactions

Group students in pairs. Write 42 on the board, and ask each pair to copy it. **What number is 7 more than 42?** (49) Have one student in each pair write it to the right of 42. **What number is 7 less than 42?** (35) Have the other student write it to the left of 42. Then invite each pair to continue the pattern for 3 more numbers in both directions. (14, 21, 28, 35, 42, 49, 56, 63, 70)

Write 37 on the board. Tell students to copy it. Have pairs once again use the pattern of adding and subtracting 7 for 4 numbers in each direction. (9, 16, 23, 30, 37, 44, 51, 58, 65) Ask students to switch sides, so that the one who added before subtracts this time and vice versa.