

Mathematicians Say: The sum of two odd numbers Teacher's notes

Students who are learning about even and odd numbers will enjoy parsing and testing this mathematical statement.

The sum of two odd numbers is an even number.

- Have your students underline the words with special mathematical meanings.
- Let them draw symbols, doodle images, or write synonyms to illuminate the meaning of each term.
- Then have them look up the meanings of each term in their math book and/or at the bottom of the next page in order to refine their understanding of mathematical terms.
- Make sure they can identify the parity of large and small numbers.
- Have them restate the sentence in their own words.
- Invite students to speculate whether or not this statement holds true for every pair of odd numbers.

For example:

- Choose a pair of odd numbers such as 7 and 5.
- Walk through this example with the entire class to show that the sum of 7 & 5 is an even number.
- Make sure students can explain how the example supports the statement.
- Invite them to make diagrams to help understand the equation.
- Feel free to share how exciting it is that this relationship is true for any and all pairs of odd numbers.
- **Support** more reflective learners: Let students in need of support work with a partner who is more confident. Alternatively, prepare them for this lesson by making sure they understand the concepts and vocabulary in advance.
- **Challenge** learners with more experience: Invite students to create mini posters showing how two odd numbers fit together to make an even number.

Share an example:

- Let the class help you create & test another example using numbers with 3 or 4 digits.
- Adjust the pace to hold student interest and yet, ensure comprehension.
- Make use of stories, diagrams, and doodles to support understanding.
- Discuss whether or not you have proved that this idea holds true every time a pair of odd numbers is added together.

Share another example:

- Have students work in small groups or pairs to create and test another example.
- Let the students who need more support work with you or with an aide.
- Carefully monitor students' understanding and comprehension.

Share another example:

- Let each student create and test their own unique example to illustrate the statement.
- Have them explain how their example supports the statement.
- Encourage them to share diagrams and doodles that support the statement.

Share a counterexample if possible:

- Have students use calculators and another sheet of paper to search for a pair of odd numbers which do not follow this relationship.
- They could work in teams, pairs, or individually.
- Feel free to offer a Million dollar prize for any counterexample found.

Mathematicians Say:

The sum of two odd numbers is an even number.

What do you say?

- Have students rewrite this idea in their own words.
- Invite them to share their thoughts and reactions to discovering this relationship.
- Invite students to share how they might use this rule to help them with their math work.
- Discuss other math rules concerning even and odd numbers.

Definitions:

Parity: the quality of integers being even or odd, 2 and 3 have opposite parity

Mathematicians Say:

name:

The sum of two odd numbers is an even number.

For example:

Share an example:

Share another example:

Share another example:

Share a counterexample if possible:

Mathematicians Say:

The sum of two odd numbers is an even number.

What do you say?

Definitions:

Even number: can be divided by two without a remainder, can be shared equally between two people, has 0, 2, 4, 6, 8 in the units place

Is: is equal to, is the same as, identical, fair trade for, interchangeable,

Odd number: divided by two with one left over, has 1, 3, 5, 7, 9 in the units place

Sum: the result of addition, total, aggregate,