

Making Conjectures Goldbach's Conjecture

Christian Goldbach (1690-1764) was a Prussian amateur mathematician and historian who lived in St Petersburg and Moscow. He made his conjecture in a letter to Leonhard Euler dated 1742, who at first treated the letter with some disdain, regarding the result as trivial. Goldbach's conjecture, however, remains unproved to this day and, in fact, the British publisher Faber offers a million dollar prize to any person who can furnish a proof.

Goldbach's conjecture states that any even number greater than 2 is the sum of two primes.

$$5 + 3 = 8$$

$$3 + 7 = 10$$

Goldbach also stated that every integer greater than five is the sum of three primes.

$$3 + 5 + 7 = 15$$

Try other conjectures

- Brownbach or Robinettbach conjecture (or any other "bach" name:
 - Every number can be expressed as a difference of 2 primes.
Example $4 = 7 - 3$

Have students test these conjectures to see if they can find an example that does not work. (A counter example)