Miss Kidd-Rossiter

Goldbach's conjecture Unsolved maths problems

Downloadable resource

Mathematics

Try this

Zaki is thinking about prime numbers.

> Any number can be written as the sum of two prime numbers.

Zaki

Do you agree with Zaki?

Can you find some examples that either **show** or **don't show** this to be true?
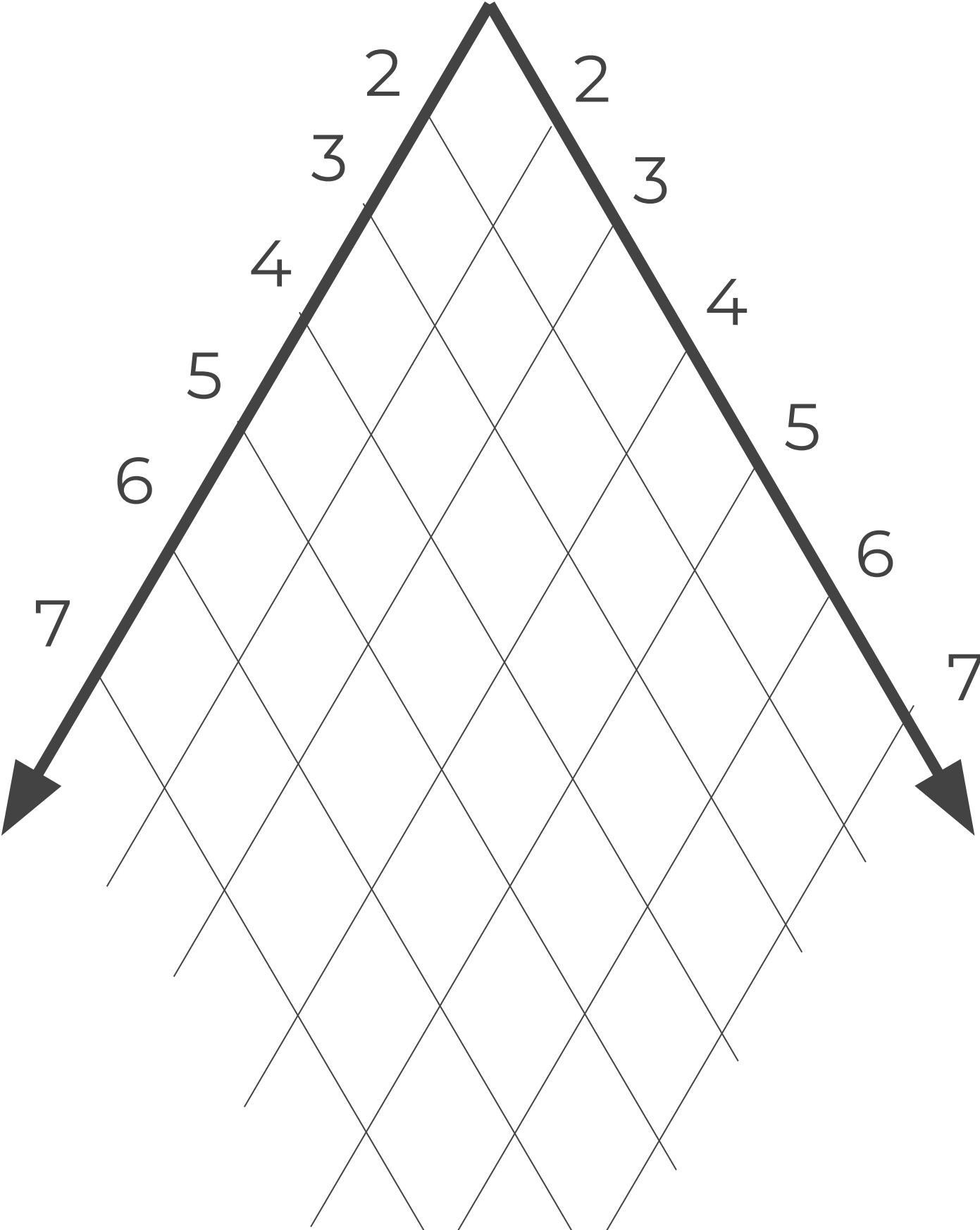
Connect

Christian Goldbach (1690-1764)

7th June 1742 wrote to Leonard Euler

Every even integer greater than two can be written as the sum of two prime integers.

Connect

Independent task

1. List all the prime numbers up to 100.

2. Continue the diagram.

    a. What is the largest even number you can write as the sum of two prime numbers?

    b. What do you notice?

    c. Can you form any conjectures?

3. Explain why the conjecture cannot hold for most **odd** numbers.

Explore

Yasmin is thinking about Goldbach's conjecture.

> As even numbers get larger, then there is more ways to write them as a sum of two prime numbers.

Yasmin

Do you agree with Yasmin?

Can you find some examples that either **show** or **don't show** this to be true?