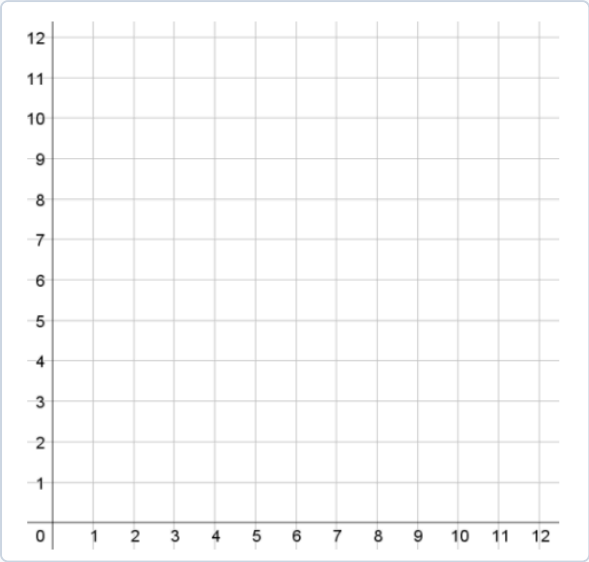
Beach Treasure Hunt: Winning in 3 Guesses

A Reliable Step-by-Step Strategy for the NRICH Grid Game

In this game, when you pick a coordinate, your opponent tells you how many steps you must walk along grid lines to reach the hidden treasure. Because walking along grid lines counts **steps across** plus **steps up**, we can use two bottom corners to find the exact hiding spot in just **three guesses** every single time!



How the 12 × 12 Grid Works

The beach grid goes from **0 to 12 across** and **0 to 12 up**.

Every spot on the beach has two secret numbers:
- **Across (X)**: How far right it is.
- **Up (Y)**: How far high it is.

By checking two corners, we turn the game into a quick 3-step puzzle.

Guess 1: The Bottom-Left Corner (0, 0)

Start at the very beginning of the board at **(0, 0)**. Because you start at zero, the distance your partner gives you is simply the two coordinates added together:

First Number = (Steps Across) + (Steps Up)

Guess 2: The Bottom-Right Corner (12, 0)

Next, guess the corner all the way to the right at **(12, 0)**. Your partner will give you a **Second Number**. Because the board is 12 units wide, this number reveals how close the treasure is to the right-hand edge.

Step 3: Crack the Secret Code

Combine your two clues using simple math to get the exact location:

1. **Find Across (X):** Add 12 to your First Number, take away the Second Number, then split the answer in half:
   Across = (12 + First Number − Second Number) ÷ 2
2. **Find Up (Y):** Take your Across number away from the First Number:
   Up = First Number − Across

Worked Example

Imagine the secret treasure is buried at **(8, 2)**:

- **Guess 1 at (0, 0):** Distance given is **10** (8 across + 2 up = 10).
- **Guess 2 at (12, 0):** Distance given is **6** (4 steps from 12 + 2 steps up = 6).
- **Calculate Across:** (12 + 10 − 6) = 16. Half of 16 is **8**.
- **Calculate Up:** 10 − 8 = **2**.
- **Guess 3 at (8, 2):** Distance is **0** — *Treasure Found!*