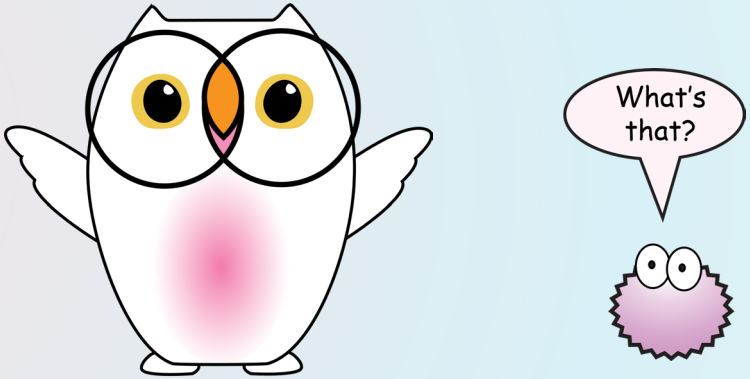
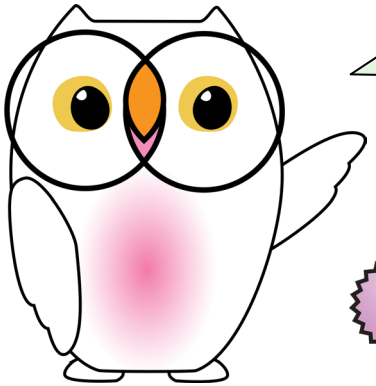
Entanglement Analogy!



Something to help achieve these Learning Objectives:

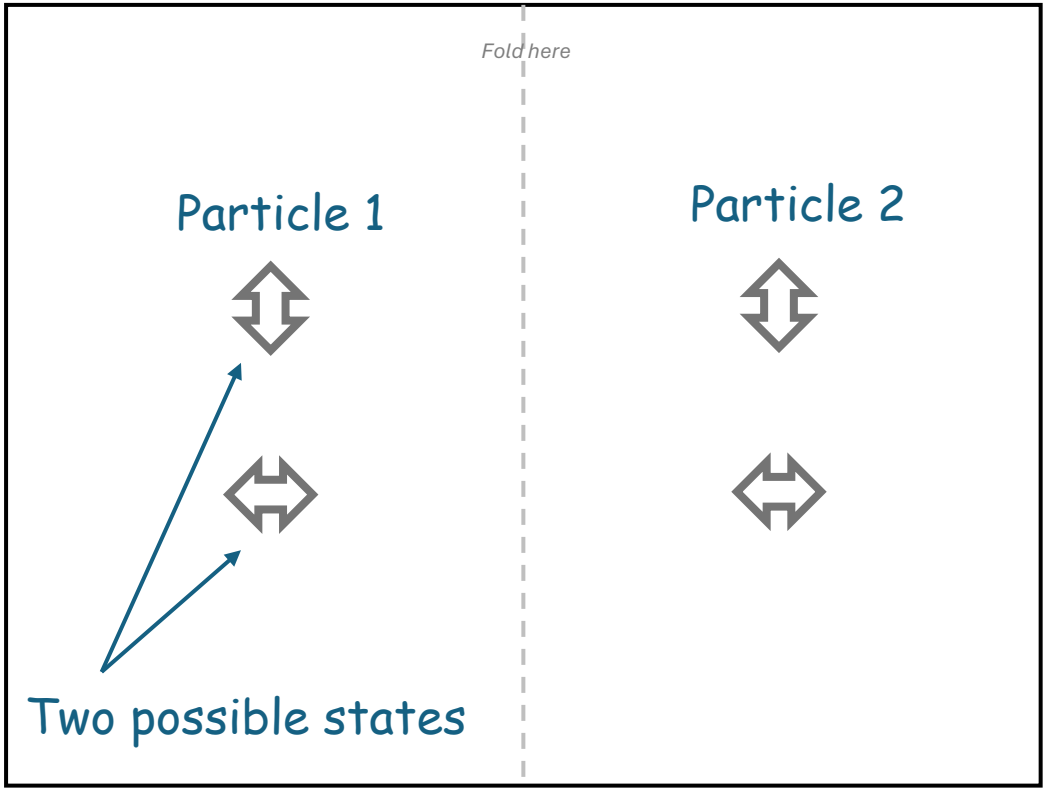
- to be able to explain entanglement in your own words
- to be able to write an entanglement equation using kets

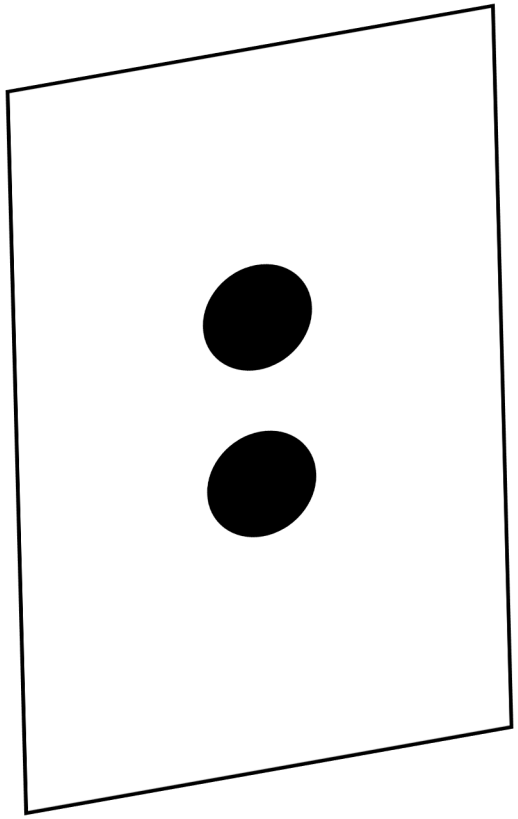
Key Terms: quantum particle, entanglement, ket



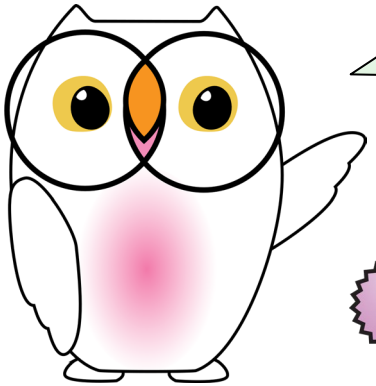
This is an analogy of two entangled particles

Quantum particles can be entangled with each other such that the measurement of one can instantaneously "affect" the other, even when they're very far apart. Here is an analogy:



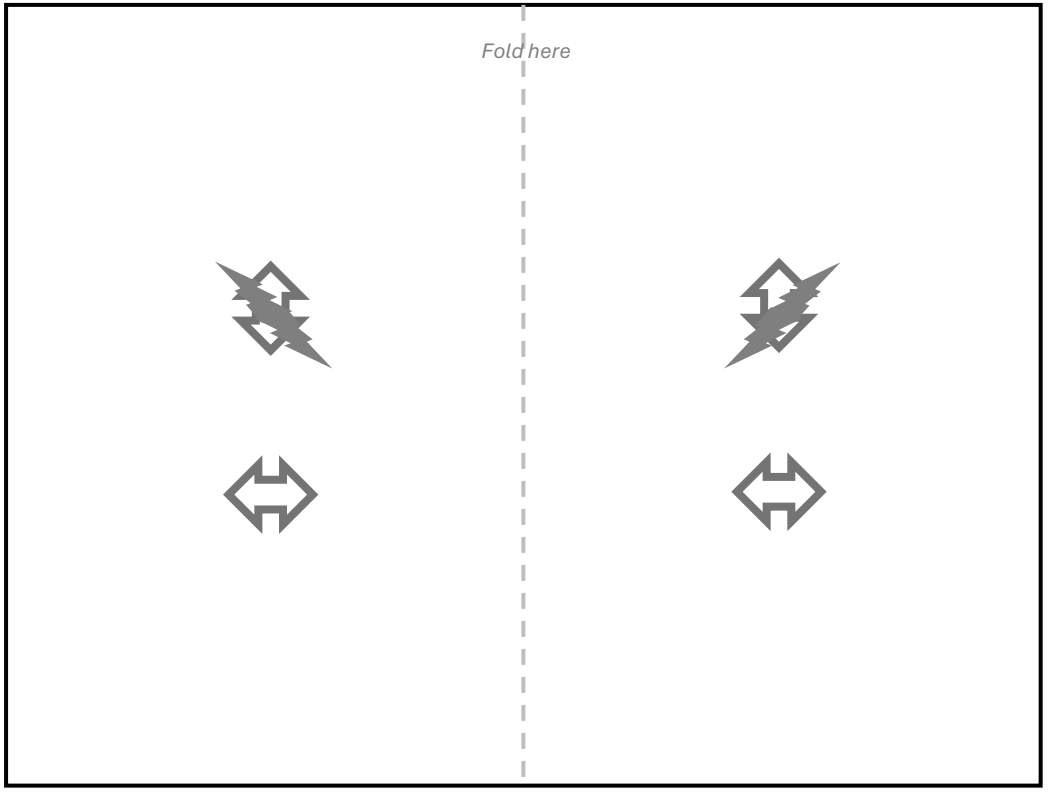


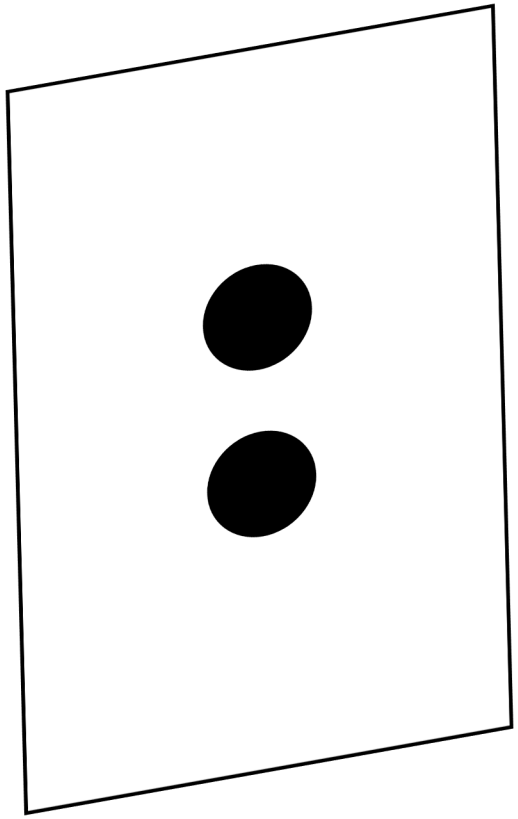
When you fold the paper and "make a measurement" by tearing one circle...



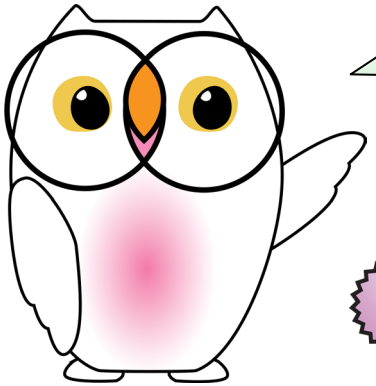
They are always the same state!

Wow…What does this mean?



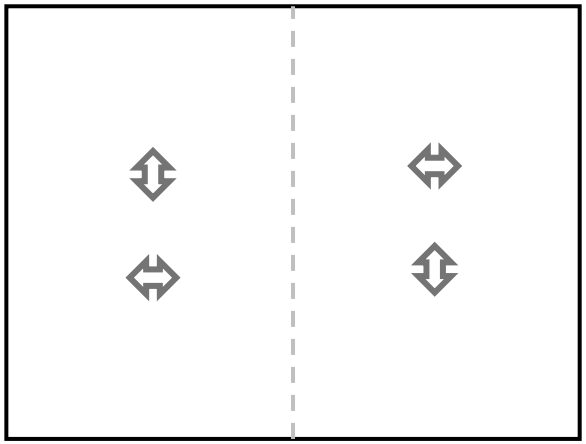


Folding the paper is like folding space and time to allow the particles to "affect" each other at a distance. This analogy is based on a proposed theory for how entanglement might work!

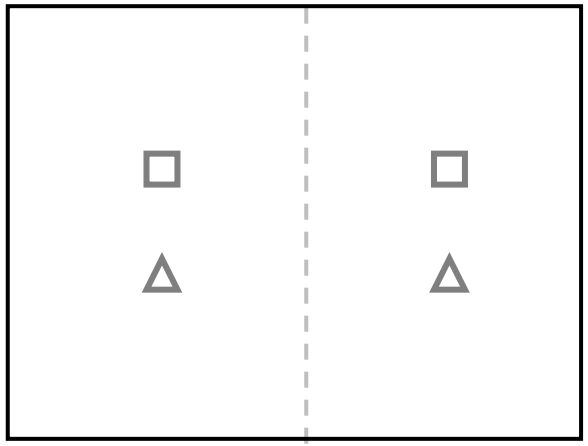


You can change the type of entanglement

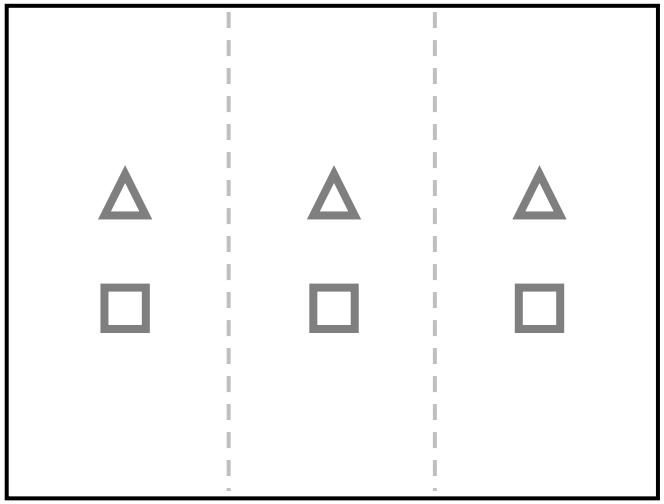
Particles can be opposites.

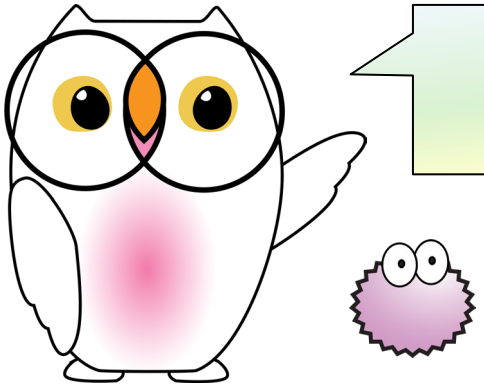


Different shapes.

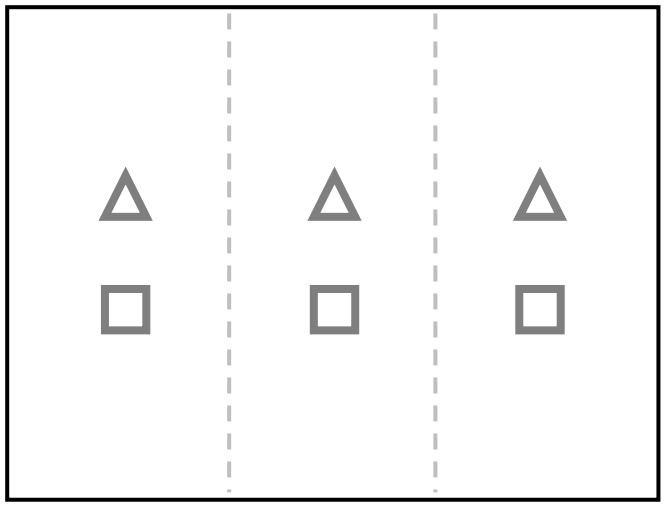


There can be 3 (or more) particles entangled.





You can write the state using "kets."



- Draw a vertical line to start the ket

  $|$

- Add the first row of symbols to the ket

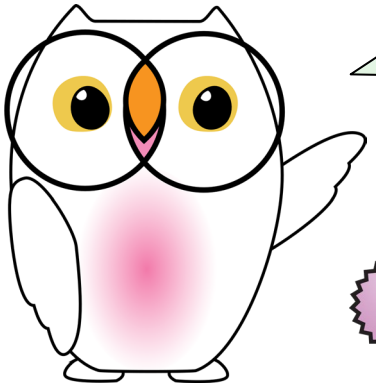
  $|\triangle\ \triangle\ \triangle$

- Close the ket

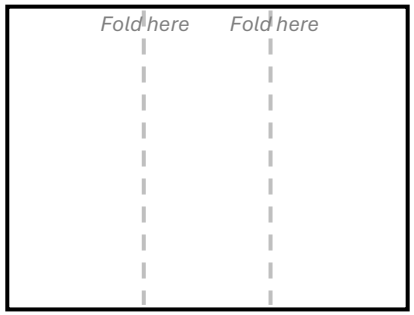
  $|\triangle\ \triangle\ \triangle\rangle$

- Draw a plus sign to add kets for the other possible states

  $|\triangle\ \triangle\ \triangle\rangle + |\square\ \square\ \square\rangle$

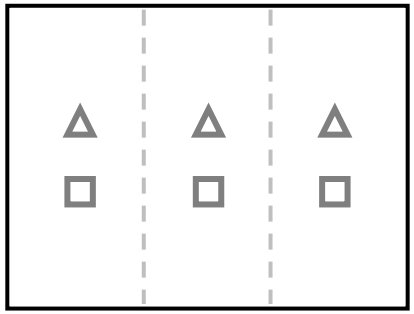


Make your own entangled states!



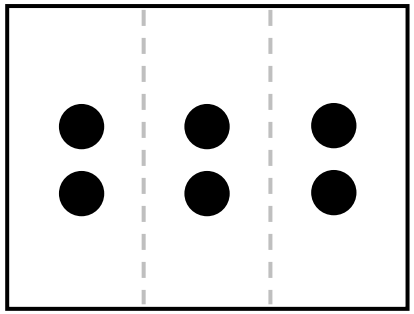
1. Fold a piece of paper according to the number of particles you want entangled

   Open the paper, draw dashes on the creases, and write "fold here"



2. Add symbols for the different possible states of each particle

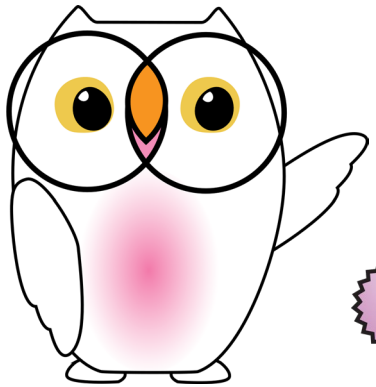
   Keep the symbols aligned in rows and columns



3. Flip the paper over and hide the symbols on the other side using circles

Good job, you've created an entangled state! Now give it to someone else for them to make a measurement!

How would you write your entangled state using kets?



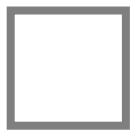
In the following pages are some examples you can use!

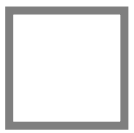
Yay! Let's entangle some particles!

Be sure to print this pdf double-sided so the black circles show up on the other side of the printed paper!

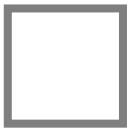
Fold here

Fold here



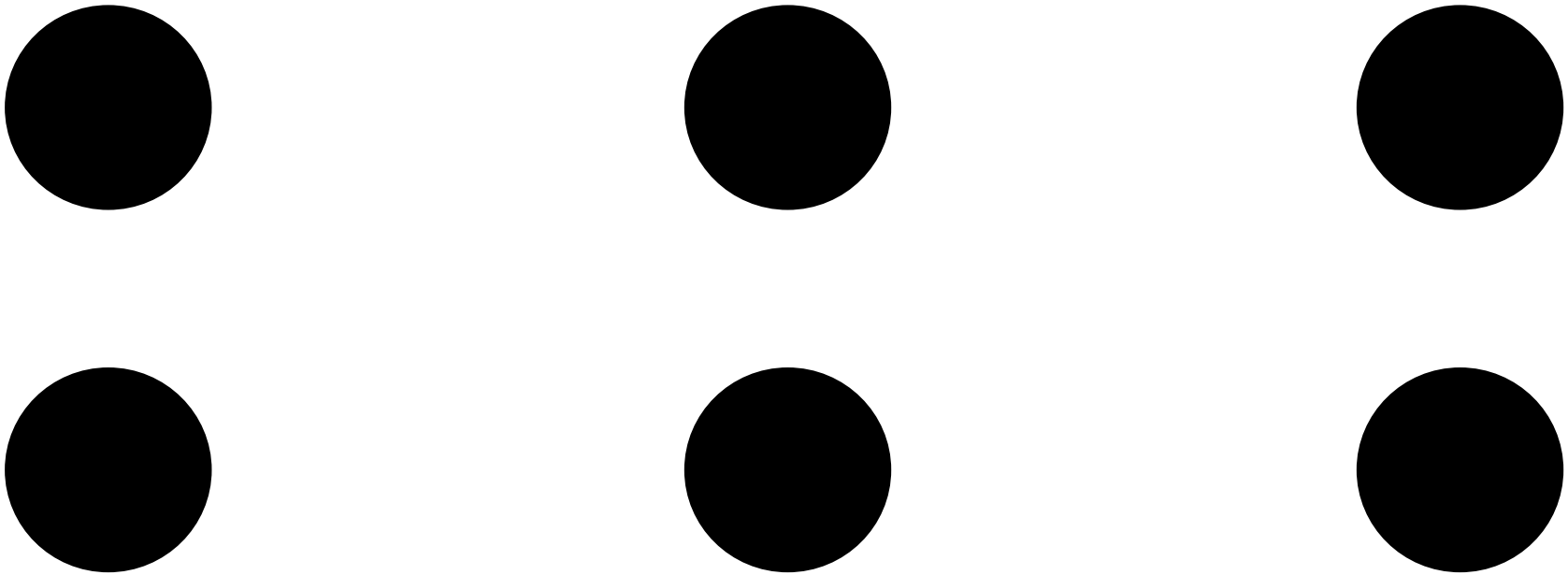


Fold here



Fold here

Fold here



This analogy was created in the Public Quantum Network (PQN) project. To learn more about PQN, visit our website:

pqnetwork.org

© 2026. This work is licensed under CC BY-NC 4.0.

https://creativecommons.org/licenses/by-nc/4.0/

Entanglement Analogy made by Kriti Shetty using icons from Microsoft PowerPoint. Editor V. Lorenz.

Preferred attribution: “Entanglement Analogy, v.1, by Kriti Shetty is licensed under CC BY-NC 4.0 https://creativecommons.org/licenses/by-nc/4.0/”