

Imagine walking to a friend's house with an ice cream cone on a hot summer day... YIKES!!

Light, heat, and vibration can change a qubit's state unintentionally - this is called "decoherence"

Say Alice wants to send Bob a qubit in the state.

Alice

Bob

Alice could ship her qubit to Bob, but complex qubit states are VERY FRAGILE!

HOW CAN WE SEND STATES?  
? IN QUANTUM COMPUTING?

## DECOHERENCE CAUSES INFORMATION TO BE LOST!

uhh... what!??!

Alice should look for a safer way to send her message!

Alice

Bob

Could Alice just send a COPY of her qubit?

Qubits can be in one of the basic states of "0" or "1" - or something much more complex!

Your emotions are a kind of state for how you're feeling: Happy, Sad, Angry, etc.

Other things have states, too: A TV has two basic states: "on" and "off"!

QUANTUM COMPUTERS STORE INFORMATION IN QUBITS

The information stored in a qubit at any moment is called its "state."

## THE NO-CLONING RULE

We copy & send information all the time in real life...

I just sent you that picture we took!

Awesome! Now we both have it. :)

There's just one problem... qubits can't be copied!!!

The No Cloning Rule: A qubit's state cannot be copied to another qubit - without changing the original.

I'm just one of a kind!

So how can Alice send her qubit to Bob?  
See the Quantum Teleportation zine to find out!

QUANTUM COMPUTERS DO, TOO!

They just store information in a bit of a weird way.

"Quantum computers" ???

"You have 99 unread messages."

"5 + 7 = 12"

"The nearest ice cream shop is 1 mile away."

COMPUTERS ALSO DO THIS!

(That's how they calculate things!)

WE ALSO MOVE INFORMATION!

Talking!

Texting!

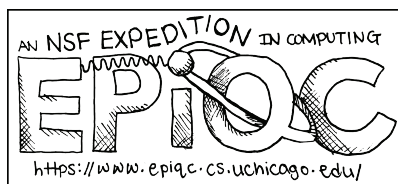
Sending mail!

FIND MORE QUANTUM COMPUTING ZINES HERE:

<https://www.epiqc.cs.uchicago.edu/resources/>

Contributions by Sabine Salnave  
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HOW DO YOU GET SOMETHING FROM ONE PLACE TO ANOTHER?

You move it, of course!

I like to move it!

WE MOVE THINGS ALL THE TIME!

From books... to groceries... to people!

