



Wonders of
Quantum Physics



Quantum Secret Sharing Answer Guide

Introduction to Encryption

1. **Multiple Choice:** What is the smallest unit of data in classical computers?
a) Qubit
b) Bit
c) Photon
2. **Multiple Choice:** What do quantum computers use to store and process information?
a) Qubits
b) Binary code (0s and 1s)
c) Bits
3. **Fill in the Blank:** A qubit is different from a bit because it can exist in _____ states at the same time.
(Answer: multiple)
4. **Fill in the Blank:** Classical encryption relies on secret _____ to scramble and protect messages.
(Answer: keys)
5. **Brief Description:** Why is quantum encryption more secure than classical encryption?
(Answer: Because if someone tries to listen in, the message automatically changes or disappears, making spying impossible.)

Student Worksheet

1. Regular computers store data in _____. **(Answer: 0's and 1's)**
2. A particle of light is called a _____. **(Answer: photon)**
3. Polarization is the _____ that a particle of light wiggles in. **(Answer: direction)**
4. It takes _____ computers to decode a quantum encrypted message. **(Answer: multiple)**