

Writing Protocols to Send A Binary Message

Students will create protocols so that they can transmit messages with flashlights.

U1Ch1L2b: Developing A Protocol

Purpose: Students will learn how to develop a Protocol in order to solve a problem.

Intro:

Yesterday you made a Device and developed a Process to communicate a binary question. In order to interpret the message we needed to know which signal meant “A” and which meant “B”. What we were really doing was beginning to develop a communication Protocol. Today you’re going to develop a protocol to solve a problem.



Develop A Protocol

Partners need to create a protocol that takes the following rules into account :

- The light “On” is letter “A”, “Off” is letter “B.”
- The Transmitter shall pulse the flashlight on and off at 1 second intervals.
- One student is the Transmitter and sends a message with a flashlight.
- One student is the Receiver and decodes the binary message.
- The Transmitter and Receiver may not talk or make any signals to communicate. All communication is made with the flashlight.

Challenge #1 - Transmitting 4 Letter Binary Code.

“Imagine that you and your friend have made a binary signaling protocol using a flashlight.

- The Transmitter and Receiver should take a moment to practice with both the Device & Protocol.
- Partners will stand on opposite sides of the classroom.
- The Instructor will provide the Transmitting Student with a four letter code.
- The Instructor will say, “Go.”
- The Receiver should write down what they think the message says.
- Students will check to see if the message received matches the code that was sent by the Transmitter.
- The Transmitter and Receiver should discuss whether or not their protocol needs to be rewritten? When you are ready, the instructor will provide you with a new message.

Challenge #2 - Transmitting More Complex Binary Code.

“Uh oh! The instructor noticed how good you were getting at writing protocols, so decided to make the activity a little more challenging.

- The instructor will provide a message that may be greater or less than 4 letters.
- The instructor will not say, “Go.”
- The Transmitter and Receiver should now discuss whether or not their protocol needs to be rewritten?