Name(s)_____ Period _____ Date _____

Activity Guide - Coordination and Binary Messages

Develop your Protocol: You and your partner will need to send a 2-bit message back and forth on the Internet Simulator. One partner will have a secret 2-bit message (for example BA). When your teacher says "Go" that partner will send the message using the Internet Simulator. The second partner will then send the same message back. At the end you'll check that the correct secret message was successfully sent back and forth.

Your Protocol: You will need to agree on rules, or a "protocol" to make this message exchange work. Develop your protocol in the space below. Make sure you consider:

- How will you know when the exchange is supposed to begin?
- How will you know whose turn it is to send or receive the message?
- How will you coordinate your actions?

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Practice: Practice sending a 2-bit message back and forth (4 bits sent in total). Try to get your time as low as possible without making mistakes. Record your fastest time in the space below.

Bits Transmitted: 4   Time in Seconds: _____

Challenge: Extend your protocol so that it can send more bits. Can you make it work for 4-bit messages or 8-bit messages? Keep improving your protocol so that you can send more bits as quickly as possible without making mistakes.

Bit Rate: A bit rate is a measure of how fast a system transmits bits. You can calculate your protocol's bit rate by dividing the number of bits sent by the amount of time it takes. Calculate your bit rate for one of your fastest runs of your protocol. Note: If you send 4 bits back and forth, you've actually transmitted 8 bits.

Bits Transmitted: _____   Time in Seconds: _____   Bit rate: _____ bits/sec