

# Activity Guide - Sending Numbers



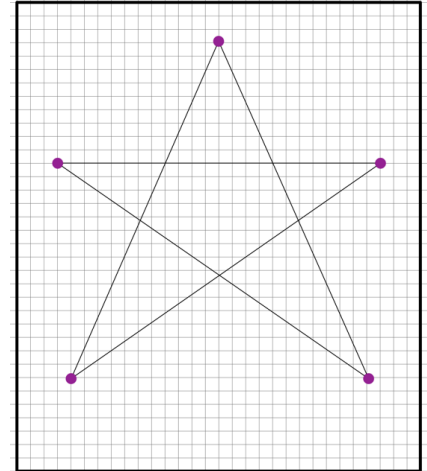
**Challenge:** Develop a protocol or set of rules for communicating a drawing to your partners using only numbers

## Challenge Rules:

- The image will be a line drawing created by connecting points on a grid, like the one seen here. Keep it simple: 3-5 points!
- Partners can discuss and agree on a protocol ahead of time, but the image exchange must happen without communication between the two parties other than through using the Internet Simulator.
- You can only send **a single message - a single list of numbers** - through the Internet Simulator to describe the whole image.

## Things to Consider:

- How will your points be formatted?
- How does the recipient know when one number ends and the next starts?
- You will be provided with several grids to select from. How will you communicate to your partner in the protocol which grid your partner should use?



## Recommended Steps:

1. In order to develop your protocol, have both partners agree on a first drawing and the coordinates for the first drawing. Keep rewriting the protocol and testing it via the Internet Simulator until you are able to have one partner transmit the code and the other partner can draw it.
2. Test your Protocol. Partner 'A' will draw an image but not show Partner 'B'. Partner 'A' will transmit the data using the Internet Simulator and relying upon the protocol. Partner B will receive the message and draw it on the grid, again relying upon the protocol. If successful, it is Partner 'B' turn to draw and transmit. If not, the partners need to determine where the problem is and rewrite the Protocol.
3. **Now test your protocol with your classmates. They should be able to follow your protocol to successfully draw an image provided by you.**

## Test:

I will give you a drawing and see if you can successfully draw it by relying on your protocol.

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**Your Protocol:** Write the steps of your protocol below.