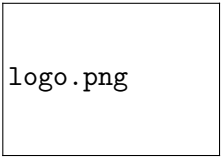

Polygons

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- The decoding should require a ‘key’ which is **statistically impossible to determine quickly**.
- The encoding and decoding must be done procedurally – requires a system with concrete rules and a **limited** (but huge) **number of combinations**.

Encoding Messages – Regular Polygons

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The symbol in the **main** vertex is what is sent during each tick (time interval during which symbols are sent).
Rotations and reflections ‘move symbols between vertices’.
This means that after applying a rotation or reflection, a (in most cases) different symbol will appear in the main vertex.

Encoding Messages – Morse Code

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This means that to send messages written Morse Code using regular polygons, we need three vertices – a triangle.

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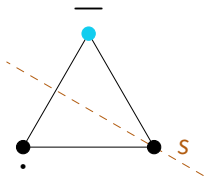

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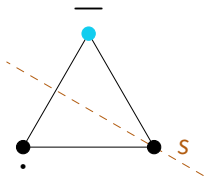

The top vertex is the main one, which means that the symbol above it will get sent.

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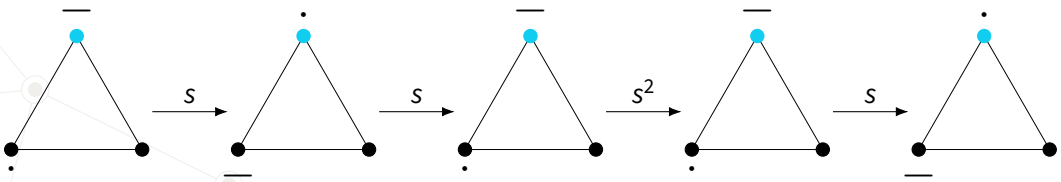
For example, we can send the letter P ($\cdot\ -\ -\ \cdot$) like this:



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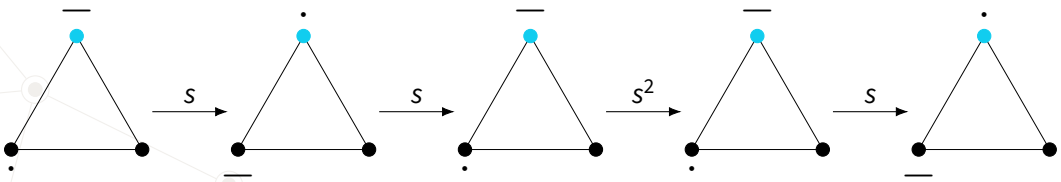

Or, as a sequence

$$s, s, s^2, s.$$

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Actually, it's often beneficial to encode messages using different combinations of symmetries for security.
The letter $\cdot - - \cdot$ can also be sent for example like this

$$r^2, sr, sr^2, rsr.$$