

Kinetic Sticks – Cobra Weave

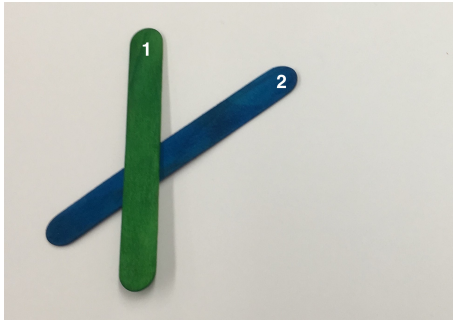
Purpose This activity will demonstrate the conversion of potential energy to kinetic energy. As craft sticks are weaved into a pattern called a “Cobra Weave,” potential energy is built up via the tension in the sticks. When one end of the sticks is released, the potential energy is converted into kinetic energy, flinging the sticks upward and outward in a chain reaction.

Materials Jumbo craft sticks or tongue depressors. The more the merrier. Using sticks with different colors adds an artistic and creative flair to the activity.

Safety The chain reactions can be a bit vigorous. Safety glasses are recommended.

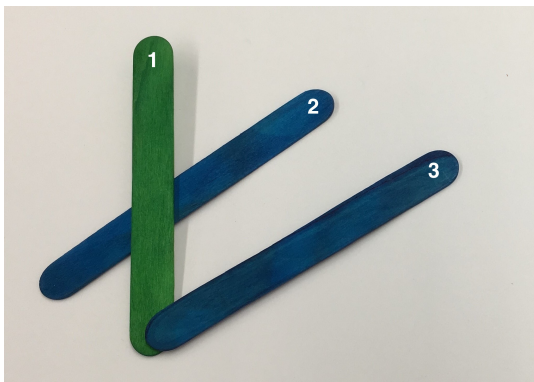
Directions

Step 1



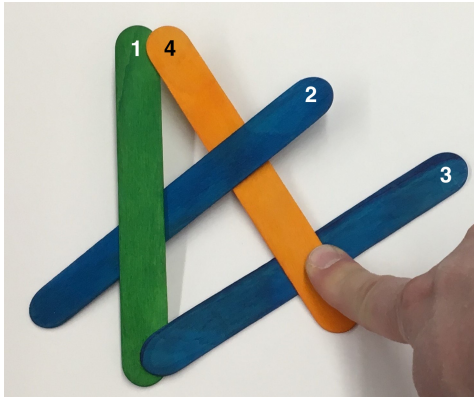
Place stick 2 diagonally underneath stick 1. Stick 1 will serve as an “end cap” to hold that end in place.

Step 2



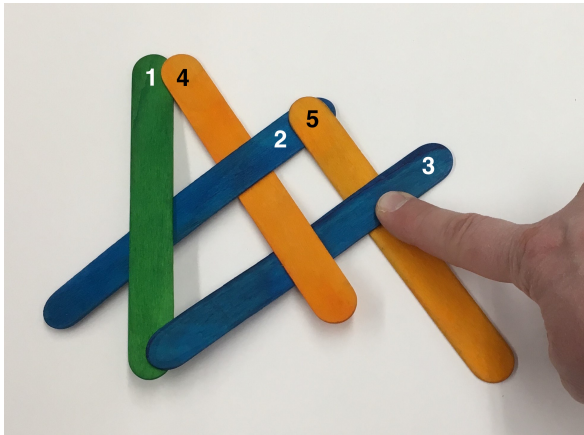
Place stick 3 over the end of stick 1, parallel to stick 2.

Step 3



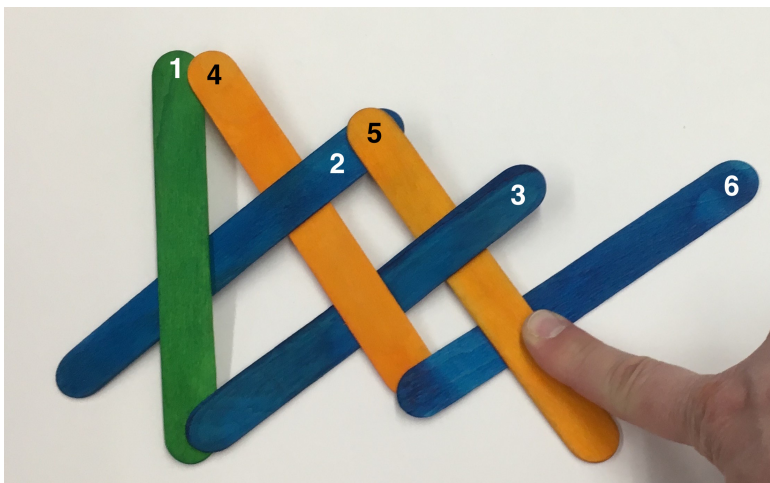
Weave stick 4 over 3, under 2, and just over 1. At this point, you will need to continuously hold onto the end of the chain where you are working, or the chain reaction will occur.

Step 4



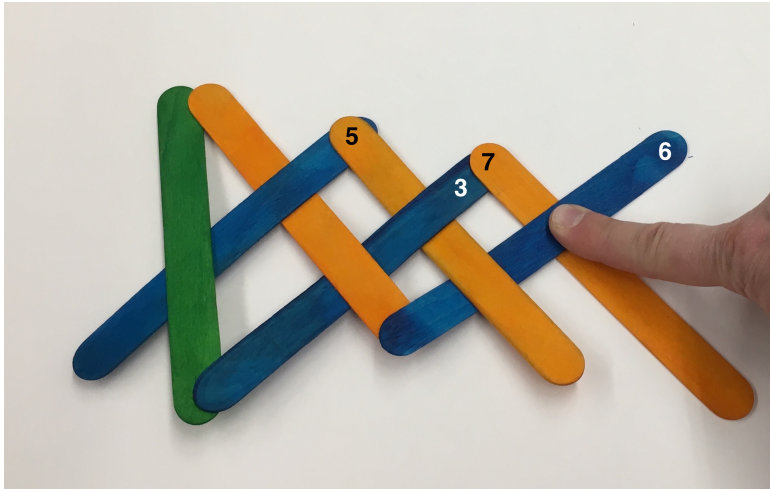
Weave stick 5 under 3, over 2, keeping it parallel to stick 4.

Step 5



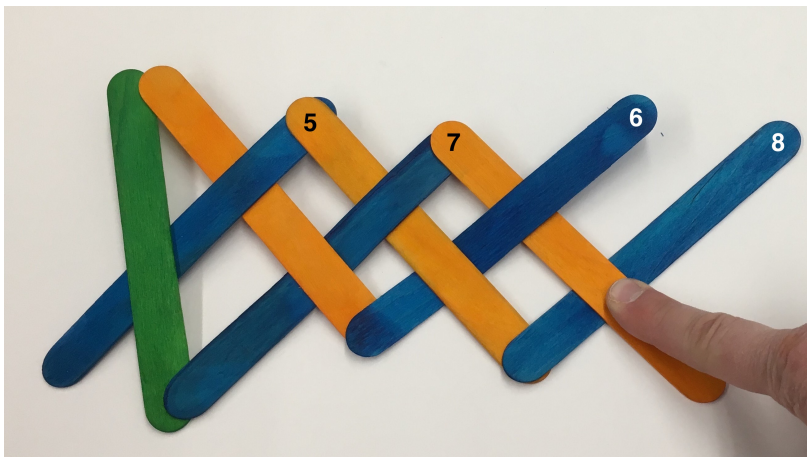
Weave stick 6 under 5, over 4, keeping it parallel to stick 3.

Step 6



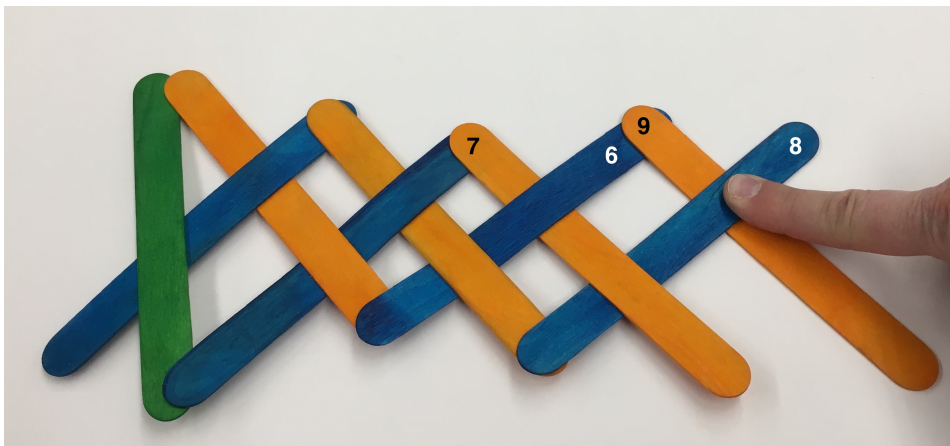
Weave stick 7 under 6, over 3, keeping it parallel to stick 5.

Step 7



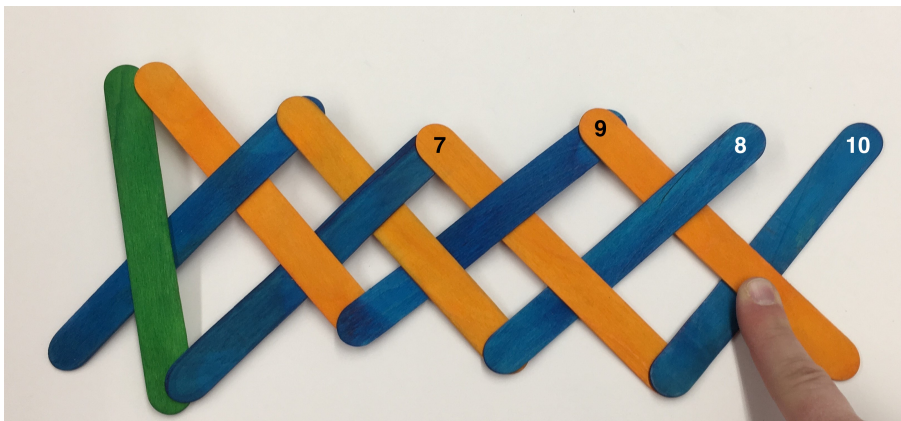
Weave stick 8 under 7, over 5, parallel to stick 6.

Step 8



Weave stick 9 under 8, over 6, parallel to stick 7.

Step 9



Weave stick 10 under 9, over 7, parallel to stick 8.

Step 10



Continue weaving in the same pattern for as long as you like, or lock in another “end cap,” (stick 11), to hold everything in place.

To activate the chain reaction, simply loosen the last end cap and let go.

Additional Resources

There are many different chain-reaction patterns that can be created using craft sticks. Search online for “popsicle stick chain reactions” to find a wide range of videos and instructions.

Or, try these links:

http://www.spl.org/Documents/audiences/CHI/2014_SOL/Ages6andUp_Popsicle_Stick_Bombs_Kinetic_Energy_Instructions.pdf

<https://youtu.be/ujDY9vwnne4>