

## Neurophysiological Model

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**Purpose:** To display and show how an action potential is made and works using neurotransmitters and ions.

**Materials:** Wood for a stand, wire to show shape of action potential, tennis balls to use as ions, marbles to represent neurotransmitters, buckets to symbolize pre and post synaptic terminals, stables, 2 kids to act as neurons, and 2 kids to move ions through action potential.

**Implementation:** WE will build a wooden stand to connect wire to. The wire will be shaped in the form of an action potential as displayed on an oscilloscope screen. Tennis balls will be attached to the wire in such a way that they can slide up and down it. The balls that represents Na will travel up the action potential and be stopped by a washer. The ball that represents K will fall from the peak into the valley and be stopped by another washer. To symbolize the release of neurotransmitters, the first child will have a bucket with marbles in it; after being “activated” by one of us, the child will “release” his/her marbles (neurotransmitters) into the bucket of the second child, whereby the action potential in the second cell will occur. The other two children will be responsible for demonstrating the action potential by moving the tennis balls (Na and K) up and down the slope. This will demonstrate how action potentials are propagated and how they look on oscilloscopes.