



Mirror Drawing

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Objectives:

- To understand how the cerebellum is involved in controlling motor movements and learning procedural skills like riding a bike.
- To see how this idea connects to something new like mirror drawing and how learning a new motor skill requires lots of practice to train the cerebellum.

Materials and Supplies Needed:

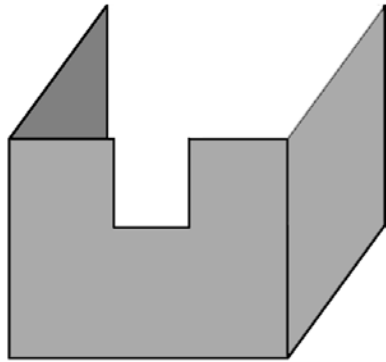
Item	Quantity	Notes (Vendor, price, purpose, etc.)
Cardboard boxes	2	For covering the kids' hands while they draw
Framed Mirrors	2	\$6/each from Target
Outline of stars	~ 500	Attached
Crayons/Pencils	1 box	~\$5 arts and crafts store

Background Information / Activity Explanation:

There are many areas of the brain involved in motor movements. One of these is the cerebellum, a leafy-looking structure at the base of the brain. The cerebellum's main job is to guide the brain in learning procedural motor skills, such as riding a bike, painting, or playing a musical instrument. When first learning the motor movements associated with these skills, it's rare that you will instantly know how to do them. Instead, you'll probably be clumsy or unable to perform the movement at all. After a lot of practice, though, your skills improve. Learning to ride a bike (procedural) is different from learning, say, all the state capitals (semantic). It's not something you can read about in a book. Instead, you have to learn by doing, and that's where the cerebellum comes in to help you. Once it has acquired a new movement, the cerebellum is very good at remembering it, which is why people have good "muscle memory" for things like playing an instrument or sport. And it's also why you'll never forget how to ride a bike.

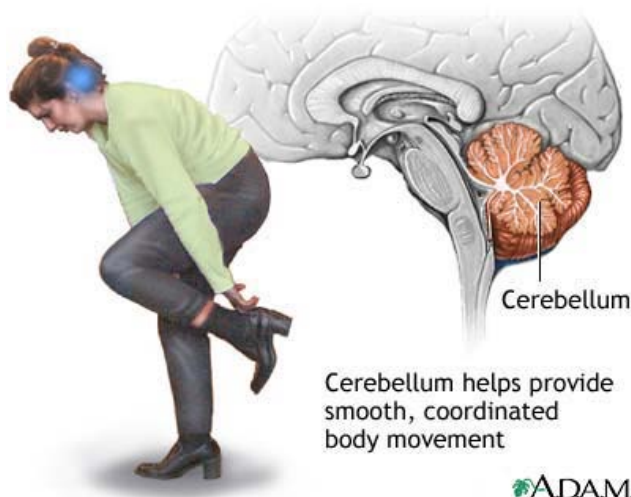
Procedures:

The cardboard boxes will be used to hide the participants' hands while allowing the hand to be visible through a mirror. Cut the cardboard box like in the figure below – cut out the bottom and one of the sidewalls. On the wall opposite the missing sidewall, cut a smaller square hole. Place the box so that the missing side-wall is facing the mirror. The opposite smaller hole is for participants to put their hands through (see picture).



The procedures for this activity are pretty simple—make sure the kids' writing hand is covered so that he/she can only see it in the mirror. Place the outline of a star inside the box and give him/her a crayon/pencil. Then instruct him/her to draw the outline of the star by watching their hand in the mirror. Kids can also race against each other if they wish.

Additional Information (advice, spiel, links, figures, etc.)



ADAM.

