



**Move It or Lose It (🧠 A Physical Health Story)  
(4<sup>th</sup> Grade – 9-10 yrs.)  
Experiment: Does Practice Make Better?**

 **STORY CONNECTION – SLIDE 15 (Approx Time: Timing will vary based on numerous factors.)**

One thing that moving your body will not do – help you to remember how to do a movement. Practice makes perfect is true of moving your body. When you practice movements – like playing the piano or shooting a basketball – you become better at doing these movements and you do not have to think about moving all the different parts of your body. Somewhere the “memory” for how to do movements must be stored. The next time that you hear someone say “muscle memory,” I want you to politely tell them that there is no such thing as muscle memory – it is “cerebellar memory.”

**Materials needed:**

- Recording sheet (included below)
- Pen/pencil
- Basketball
- Basketball hoop

**Preparation needed:**

- Determine timing of experiment.
  - The instructions are written for one week.
  - The exact amount of time can vary and be determined based on the situation and needs of the group.
- Determine activity to be counted.
  - Instructions are written for basketball but can be altered.
  - The activity just needs to be something that can be counted.
  - Suggestions: If a basketball and basketball hoop are not available, any ball or even wadded up newspaper/paper can be used as a ball and an empty trash can or box can be used as a hoop. Also, any sport can be substituted for basketball. For example, tennis balls hit back over the net, baseball or softballs hit, strikes in bowling, etc.
- Determine student grouping (3 groups total)
  - Modify as needed based on number of student(s), accessibility, and needs

**Instructions:**

- This experiment will allow student(s) to see if practice really does make perfect or at least better.
- It is a three-part experiment.

### Part I: Initial Free Throw Count

1. Explain to student(s) they will be practicing free throws. Each student will have a chance to shoot ten free throws today and will continue to work on them over the next week to see how they improve. Model a free throw.
2. Ask student(s) if they have any questions or need any clarification. Clear up any misunderstandings.
3. Allow each student a chance to shoot free throws.
4. Record the number of free throws each student makes.  
*\*\*NOTE: If you are doing this at home, you can ask your family members, friends, or neighbors to be part of the experiment.\*\**

### Part II: Grouping

5. After all initial numbers are recorded, the student(s) need to be divided into three different groups. (For students working individually – have the student choose to do one of the activities below.)
  - Group 1 will practice shooting free throws (or the activity you chose) for 5-10 minutes a day for a week (or the designated amount of time).
  - Group 2 will visualize themselves shooting free throws (or the activity you chose) in their heads for 5-10 minutes a day for a week (or the designated amount of time).
  - Group 3 will do nothing. They will not practice or even really think about shooting free throws (or the activity you chose) for a week (or the designated amount of time). This is the control group.

### Part III: Does Practice Make Perfect?

6. At the end of the week (or the designated amount of time) get all the participants back together and have them each shoot ten free throws (or the activity you chose) again.
7. Record the data on the data sheet.
8. Analyze the data. By discussing the following questions:
  - Compare the number of free throws made the first time versus the second time.
  - Which group did you expect to make the most improvement? Why?
  - Which group did you expect to make the least amount of improvement? Why?
  - Did any of the groups improve? If so, which ones?
  - Did any of the groups perform worse? If so, which ones?
  - Did any of the groups say the same? If so, which ones?
  - Were you surprised by the data? Why or why not?
  - Did the results come out as you expected? Why or why not?
  - In this experiment, did practice make perfect? Did practice make you better?
  - What would one have to do if they wanted to continue to make improvements?
9. In closing, remind student(s) that One thing that moving your body will not do – help you to remember how to do a movement. Practice makes perfect is true of moving your body. When you practice movements – like playing the piano or shooting a basketball – you become better at doing these movements and you do not have to think about moving all the different parts of your body.

Experiment credit: <https://www.education.com/download-pdf/science-fair/94387/>

