



Sleep Basics (🧠 A Physical Health Story)
(3rd Grade – 8-9 yrs.)
Physical Activity: Do You Have Control?



STORY CONNECTION-SLIDE 18 (Approx Time: 5-10 mins)

During REM, we lose all our voluntary muscle activity – these are muscles that we can move ourselves. During REM sleep your brain does not let you move by yourself! Scientists think this happens so that you do not “act out” your dreams. Your brain does this to protect you. You still have muscles that work, these are the involuntary muscle movements – or reflexive, automatic movements – which means you can still breathe, and your heart can still beat and pump blood. REM is called rapid eye movement sleep because even though you cannot move your eyes yourself during this stage of sleep, your reflexive eye movement still occurs. In fact, if you watch someone sleeping you can “see” when they are in REM sleep because their eyeballs under their eyelids will be moving back and forth.

Materials needed:

- List of muscle groups (included below)

Preparation needed:

- Designate two areas of the classroom or space as “Voluntary” and two areas of the classroom or space as “Involuntary.”
 - NOTE: If the group is small, one designated area for each might be sufficient.

Instructions:

1. Begin by reviewing muscles, involuntary, and voluntary with the student(s). Ask student(s) and have them respond with information they already know. Be sure to clarify the difference of involuntary movement and voluntary movement for student(s).
 - **Involuntary muscles** are the muscles that contract or move without conscious control. The *autonomic nervous system* controls involuntary muscle movement. These muscles are generally associated with the viscera or internal organs that exhibit regular, slow contractions and involuntary actions. For example, the heart is an involuntary muscle. (<https://www.biologyonline.com/dictionary/involuntary-muscle>)
 - **Voluntary muscles** are muscles that you can consciously control. Voluntary muscles are skeletal muscles that attach to bones and can be consciously activated to control movement. Common voluntary skeletal muscles include the biceps, triceps, lats, abdominals, glutes, quadriceps, and hamstrings. (<https://www.verywellhealth.com/voluntary-muscles-5199032>)

2. Explain to the student(s) they will hear a muscle or group of muscles read out loud. Student(s) will think and decide if the movement by the muscle(s) is voluntary or involuntary. If it is voluntary, they will move to this area of the room (gesture). If it is involuntary, they will move to this area of the room (gesture).
For example, if I hear "intestines," I will think. Intestines are in my torso. They are part of my digestive system (how I eat). But I do not tell them when to work. They just know when to work. That means they are involuntary. I will move to this side (gesture to involuntary).
3. Ask student(s) if they have any questions or need any clarification. Clear up any misunderstandings.
4. Use the list below and begin by reading one of the muscle groups.
5. Once everyone has made their decision and moved, discuss whether the muscle movement was voluntary or involuntary and how they know.
6. Continue as time allows or until the list is completed.
7. Action to use for this activity include:
 - Intestines (example) - involuntary
 - Bicep muscles - voluntary
 - Stomach muscles - involuntary
 - Calf muscles - voluntary
 - Heart - involuntary
 - Muscles in the lungs - involuntary
 - Triceps muscles - voluntary
 - Quadricep muscles - voluntary
 - Diaphragm - both
 - Muscles in the bladder - both
 - Hand muscles - voluntary
 - Tongue - voluntary
8. At the end of the activity, ask student(s) if they can think of any others and what type (voluntary or involuntary) it would be.