



SCIENTIFIC BODY SCAN VISUALIZATION

"I stand in awe of my body."

—Henry David Thoreau

OVERVIEW

A mindful visualization exercise where students reinforce their understanding of various body systems while traversing their interior

PLANNING FOR IT

WHEN YOU MIGHT USE THIS PRACTICE

- During an anatomy/physiology unit once the basics of the body system have been covered
- At the start of class to help settle students
- Any time students need to re-center

TIME REQUIRED

- ≤ 15 minutes

LEVEL

- Upper Elementary
- Middle School
- High School
- College

MATERIALS

- Grade-appropriate chart of body system of your choice, e.g., cardiovascular, integumentary, pulmonary, digestive

LEARNING OBJECTIVE

Students will:

- Appreciate the various physiological systems keeping them alive
- Experience a particular body system in operation through a mindful visualization
- Learn more details about the body system being studied

SEL COMPETENCIES

- Self-awareness

HOW TO DO IT

REFLECTION BEFORE THE PRACTICE

- Take a moment to sit or lie down in a comfortable place and notice what your body brings to your attention.
- Are you aware of your heartbeat? The feel of the air or fabric on your skin?
- Zoom into whatever body system wants your attention and visualize what's happening at a cellular level.
- End with gratitude to those cells for functioning perfectly in the background while you are out and about all day.
- For a recorded version of a body scan, click [here](#).

INSTRUCTIONS

THE PRACTICE

- This practice will focus on the cardiovascular system, but any body system is appropriate, e.g., integumentary, pulmonary, digestive, etc.
- Review a grade-level appropriate chart that represents the operation of the body system for this visualization, so that the students have a basis for the practice to follow.
- Have students find a comfortable spot to sit or lie down.
- Begin by spending some time just settling in, inviting students to close their eyes or stare at a point on the wall or ceiling, and notice their breath and all the parts of their body.
- Next, invite students to feel their heartbeat. Some will be able to feel it just sitting there (especially if you do this after some physical activity), whereas others will need to put their hand on their heart, or perhaps their neck, to find it. If they can't find it, invite them to just imagine it.
- As they track their heartbeat, have them visualize the cardiovascular system at work (at an academic level they can comprehend).
 - The key is to start big-picture and then zoom in.
 - Below is a sample script at approximately upper elementary school level. (Feel free to expand this script or shorten it to fit your students.)

- *As you notice your heartbeat, take a moment to appreciate the way that your heart pumps blood throughout your body, bringing oxygen to the muscles in your arms...down to your fingers... your legs... all the way down to your toes...*
- *With every heartbeat, picture your arteries carrying oxygenated blood to every corner of your body, and the veins carrying deoxygenated blood back to your heart... it's one big cycle...*
- *If you pay very close attention, you can feel two thumps with every heartbeat... Visualize your blood flowing from the atria into the ventricles on the first beat, and from the ventricles out into the rest of your body on the second beat...*
- *Imagine you are a single blood cell, traveling from the heart through the arteries out to all the different parts of your body and back again... you pick up oxygen at the lungs, dropping it off at the organs you visit, and return to the heart once more...*
- Close by zooming out, having students check in with the whole body again, and giving gratitude to the heart, veins, arteries or whatever parts of the system you focused on.
 - The focus is on finding gratitude for the things we take for granted that are running smoothly as we go about our day.

CLOSURE

- Ask students to share what this experience was like for them.
- After students have had a chance to share, ask them to draw a picture of the system they just visualized with as much detail as possible.
- Divide students into small groups and have each group choose one member's drawing to present to the class (adding any features to make it more accurate prior to the presentation).
- As a whole class, evaluate the drawings against the chart you began with, correcting and adding in missing features.

REFLECTION AFTER THE PRACTICE

How did students respond to this practice? Did they find it helpful in understanding their bodily systems? Do they express more appreciation or interest in how the body functions?

THE RESEARCH BEHIND THE PRACTICE

EVIDENCE THAT IT WORKS

A [2014 meta-analysis](#) that focuses on 24 mindfulness studies with K-12 students demonstrated changes in students' attention and resilience to stress, including positive emotions, self-esteem, and self-concept. Further, a [2019](#) targeted review of mindfulness interventions with young adolescents indicated multiple benefits to teens' well-being.

WHY DOES IT MATTER?

Children and teens face numerous daily stressors that can negatively affect their learning and development. Teaching students to appreciate their bodies and reduce these stressors at the same time may ultimately bolster their personal well-being—and even improve their [attention and executive functions](#) (e.g., self-control, planning, decision-making, etc.) as well as their [school functioning](#).

SOURCE

Source: Abigail Henderson, STEM Guide, Millennium School

Millennium School is an innovation lab exploring the intersection of developmental science and adolescent education in the heart of San Francisco that is developing an integrated educational program based on neuroscience and developmental psychology. Millennium School's intention is to create a model middle school that implements best practices for holistic student development, translating leading research and experiential learning techniques into practical application. The program combines integrated academics with self-discovery and real-world application through student-centered projects.