Creating Health - Class 2

Movement, Nature, Creativity, and Human Connection (Ages 10-13yo)

1. When we say "movement is a required nutrient," we mean that movement:
   A. Is only important for athletes
   B. Helps burn calories
   C. Provides biochemical signals that regulate how cells adapt and function
   D. Replaces the need for healthy food

2. Mechanotransduction refers to:
   A. Muscles turning into fat
   B. Mechanical forces being converted into biochemical signals inside cells
   C. Sweat removing toxins
   D. Stretching before exercise

3. According to research summarized in ***Spark***, aerobic exercise increases:
   A. Bone fractures
   B. Blood sugar spikes
   C. Brain-derived neurotrophic factor (BDNF)
   D. Telomere shortening

4. Physically active adults tend to have longer telomeres, which are:
   A. Hormones that regulate sleep
   B. Muscles that surround the spine
   C. Neurotransmitters in the brain
   D. Protective caps on DNA associated with longevity

5. Which type of movement primarily stimulates bone remodeling and supports bone density?
   A. Weight-bearing and strength training
   B. Scrolling on your phone
   C. Deep breathing alone
   D. Listening to music

6. Research shows prolonged sitting can reduce insulin sensitivity within:
   A. Several months
   B. Several hours
   C. Several years
   D. Only after age 40

7. Which of the following is primarily a neurological input?

A. Heavy deadlifts
B. Long-distance cycling
C. Brachiation and coordination drills
D. Sauna bathing

8. Nervous system movements like yoga, tai chi, and qigong help by:
A. Maximizing adrenaline
B. Increasing chronic stress
C. Eliminating the need for sleep
D. Balancing sympathetic and parasympathetic tone

9. Interoception is best described as:
A. The ability to run long distances
B. Your brain's ability to sense and interpret internal body signals
C. A type of muscle fiber
D. A breathing technique

10. According to Blue Zones and the Harvard Study of Adult Development, one of the strongest predictors of long-term health is:
A. Expensive supplements
B. High-intensity workouts
C. The quality of close relationships and sense of belonging
D. Competitive success

Home Activity Key

Fill out your Movement Dashboard (central circle) – put the date on top.

(1) Single-Leg Balance (eyes closed)
Purpose: Brain-body coordination
How to do it:
1. Stand on one foot.
2. Close eyes.
3. Hands on hips.
4. Stop timing if other foot touches down or you hop.

Record best time per leg.

(2) Dead Hang Time
Purpose: Shoulder integrity + grip + nervous system tolerance
Equipment: Pull-up bar
How to do it:
1. Grip bar with overhand grip.
2. Hang with arms fully extended.
3. No swinging or kicking.
4. Stop when grip fails.

Record total seconds.

(3) 5x Sit-to-Stand (seconds)
Purpose: Lower body strength and power
Equipment: Chair (standard height ~17–18 in), stopwatch
How to do it:
1. Sit in the middle of the chair. Feet flat, shoulder-width apart.
2. Cross arms over chest.
3. Stand up fully and sit back down 5 times as fast as possible.
4. Hips must fully extend at the top. Butt must touch chair each rep.
5. Time starts on “Go” and stops when you stand fully on rep 5.

Record total seconds.

(4) 1-Minute Heart Rate Recovery
Purpose: Recovery capacity
How to do it:
1. Perform intense effort for 1–3 minutes (step test or hard cycling).
2. Immediately record heart rate.
3. After 1 minute of rest, measure again.
4. Subtract: Peak HR – HR at 1 minute.

Higher drop = better recovery.

(5) CO_2 Tolerance (seconds)
Purpose: Breath control + stress tolerance
How to do it (after normal exhale):
1. Sit calmly.
2. Take a normal breath in.
3. Exhale normally.
4. Hold breath.
5. Stop at first strong urge to breathe.

Record seconds.