Activities

The Magic School Bus Works Out

Grades: 3–5

Overview
Children learn more about their hearts and circulatory system by taking their pulse and exercising.

Field Trip Notes
At this year's Teacherathalon, Ms. Frizzle squares off with Md. Sinew, a muscle-bound gym teacher. Sinew easily wins the first of the three events. Thinking there's a problem, the kids go inside Ms. Frizzle to check her out. The bus takes them through her lungs to the bloodstream, where they get pumped through her heart to her calf muscle. But when Ms. Frizzle's leg muscle collapses from the strain of winning the second event, the kids discover that her red blood cells can't get oxygen to her muscles fast enough! Can the kids help The Friz recover in time to win the final race?
**You Gotta Have Heart**

Time: 20 minutes  
**Group Size:** 2

Ms. Frizzle wins the school Teacherathalon, thanks to teamwork - heart, lungs, blood, and muscles all working together! Your kids make a personal heart profile of an important member of their own hardworking team.

**What You Need**

- Modeling clay
- Paper match for each student
- Clock with second hand
- Calculator (optional)
- Copies of YOU GOTA HAVE HEART page

**Talk About It**

Ask kids to find their hearts. If they can't, run in place for 30 seconds; try again. Ask: Why does your heart beat? (Pumps blood through body.) Why do you need a blood pump? (To carry oxygen, food to muscles and cells; carry away carbon dioxide.) Where else can you feel the blood pathway through your body? (At the pressure points.)

**What To Do**

1) Make a "Heartbeat Monitor." Imbed match in pea-sized clay, match head up. Flatten the bottom of the clay.
2) Help kids find the wrist artery. Lay hand and wrist flat on a table. Feel with fingertips along thumb-side edge of wrist for a pulse. Put the Heartbeat Monitor on the pulse.
3) No luck with the wrist artery? Feel for the neck artery, just below the chin, beside the windpipe.
4) After kids record pulse, have them do 20 jumping jacks. Remonitor pulse rate.
5) Wait two minutes, and record cool-down rate.
6) Graph results on "Chart Your Heart." Have kids fill in bars up to the numbers for their resting, working and cool-down pulse rates.
7) Help kids do the multiplication for their "Hard-Working Heart" profiles. Assume their hearts have beat at the same rate since birth.

Next Stop
Ask: Why do you breathe harder when you exercise? (Lungs are taking in more oxygen for working muscles.) Why does your heart beat faster? (It’s pumping more oxygen to muscles.)

Subjects:

Human Body, Blood Circulation and the Heart, Science, Observation, Exercise and Fitness
HEART WORKOUT WORKSHEET

Find Your Resting Pulse Rate
1. Put Heartbeat Monitor on your wrist artery. (Or feel your neck artery.)
2. Ask a partner to clock 15 seconds. Count the tick tocks of the Heartbeat Monitor (or pulses in neck artery).

___ Heartbeats in 15 seconds × 4 = ___ Resting Heartbeats per Minute

Find Your Working Pulse Rate
3. Do 20 jumping jacks. Now find your working pulse rate.

___ Heartbeats per 15 seconds × 4 = ___ Working Heartbeats per Minute

Find Your Cool-Down Pulse Rate
4. Wait 2 minutes. Find your cool-down pulse rate.

___ Heartbeats per 15 seconds × 4 = ___ Cool-Down Heartbeats per Minute

MY HARD-WORKING HEART

Heart Profile of:
____________________ Age: ___

My heart beats (Resting Pulse Rate):
____________________ times per minute,
(x 60) ___________ times per hour,
(x 24) _________ times per day, and
(x 365) _________ times per year.

In my lifetime, (x your age __________),
my heart has beat more than
____________________ times.

CHART YOUR HEART!

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