

THE AMAZING HUMAN BODY

NEXT LEVEL CHALLENGES!



NAME:

1 PUMPING BLOOD

You will need:

A timer

Your body

A pencil or pen

Here's how:

1. Hold your index and middle fingers gently on the inside of your wrist until you can feel your pulse. If you can't find your pulse in your wrist, you can try holding your fingers right under your jaw below your ear.
2. Set a timer for 30 seconds. When you start the timer, start counting the number of pulses you feel. Each pulse corresponds to one heartbeat in your chest. When the timer goes off, multiply the number of heartbeats you counted by two. This is your resting heart rate, which is measured in beats per minute (BPM).
3. Do jumping jacks, sit-ups, or whatever other exercise you enjoy for one minute.
4. Repeat step 2 to measure your heart rate after exercise.
5. Rest for 1 minute and repeat step 2. How much has your heart rate changed?
6. Rest for another 9 minutes and repeat step 2 again. Has your heart rate returned to normal?

Activity level	Heart rate (BPM)
Resting	
Immediately after exercise	
One minute after exercise	
Ten minutes after exercise	

2 THE NOSE KNOWS

You will need:

Gummy candy in 3-5 flavors

A blindfold

A friend

Optional: a nose plug

Here's how:

1. Fill in the candy flavors in the first column of the table below. You can do this yourself or, for an extra challenge, have your friend do it without telling you what they are.
2. Put on the blindfold and the nose plug. If you don't have a nose plug, you can just hold your nose with your fingers.
3. Have your friend hand you the first candy without telling you what flavor it is.
4. Eat the candy, then tell your friend what flavor you think it is. They should record your guess in the second column of the table below.
5. Repeat steps 3 and 4 until you have tried all the candy.
6. Unplug your nose.
7. Repeat the experiment. This time your friend should record your guesses in the third column of the table.
8. Remove your blindfold and look at the table. How many did you get right. Was it easier or harder with your nose plugged?

Candy Flavor (fill in below)	Guess with nose plugged	Guess without nose plugged

3 WHERE ARE YOU

You will need:

Your body

Here's how:

1. Close your eyes and raise both of your hands above your head. Hold your left hand still.
2. With your right hand, touch the tip of your nose with your index finger and then touch the tip of the thumb of your left hand with your right index finger as quickly as possible.
3. Repeat step 2, touching each of the fingers of your left hand in turn, and returning to your nose in between.
4. Repeat the experiment, this time keeping your right hand still and using your left index finger.
5. Repeat the whole experiment again on both sides, but this time you can wiggle the fingers of the hand you keep raised. Which version of the experiment is the easiest? Which is the hardest?

WHAT IN THE WOW?

You may know about the classic five senses: taste, touch, smell, sight, and hearing. This experiment uses a sixth sense called **proprioception** — it's your sense of the position of your own body in the world. This is the sense that lets you do things like touching your own nose without looking in a mirror and helps with your sense of balance among many other important functions.

However, most peoples' sense of proprioception isn't strong enough to perform very precise tasks without visual cues or other aids. Wiggling your fingers gives your brain some extra information which makes the experiment easier to perform!