



## Measure Your Pulse with a Straw!

by Alexandra Blickley

Want to let your kid *see* her heart in action? A simple device constructed out of a drinking straw and clay makes learning about the pulse visual and hands-on! The straw twitches up and down with each heart contraction, giving kids a firsthand look at how the heart works. She'll even practice making a hypothesis, or guess, and then observe the difference between resting and recovery pulse rates.



### What You Need:

- Drinking straw
- Clay
- Clear tape
- Paper and pen
- Watch or timer

### What You Do:

1. Explain to your child what a pulse is. Every time her heart contracts, the blood pushes through an artery, causing it to push up against a nearby bone. The bulge created by that push can be felt as a slight throbbing in areas such as the wrist, neck, and temple. Each pulse movement is a sign of one heartbeat.
2. Ask her to make a hypothesis, or guess, as to how many times her heart beats in one minute when she is relaxing or watching television, known as her *resting* heart rate. How much does she think it will change immediately after she finishes exercising, such as after playing tag or soccer? This is called her *recovery* heart rate.
3. Encourage her to find a pulse point on her body. Often, it is most easily observed on the side of the neck, directly under the jaw bone, or on the inner wrist. Remember: It feels like a slight throbbing.
4. Give her a small amount of clay—about the size of a small rubber ball—and have her place it on this pulse point. She should press the clay firmly against the pulse area so it's attached securely to her skin. If she chooses to use the neck pulse point, it's probably easiest for her to lay down so that the clay doesn't fall off.
5. Next, have her push a drinking straw into the clay so that it sticks out straight from her body. She should be able to see the straw move just slightly with each pulse movement.
6. Have her count her pulse rate, or the number of times the straw twitches, for 30 seconds. You

- should hold the timer or the watch so that you can tell her when to start and stop counting.
7. Ask her to multiply this number by two to determine her heart rate per minute—an excellent way to sneak in some math practice. Did it come close to her hypothesis? Does she want to adjust her guess for the recovery pulse rate?
  8. Now, she should go get active for a few minutes. Effective ways to quickly increase her heart rate are push-ups, running, or jumping jacks. Have her one activity, or a combination, for a few minutes until she feels her heart rate quicken.
  9. Immediately after, have her reattach the clay and straw and then time her heart rate for another 30 seconds.
  10. Have her multiply it by two, as she did for the resting heart rate. Her pulse rate after exercising should be significantly higher. How close did it come to her guess?

**Did You Know?** According to the American Heart Association, the heart beats about 100,000 times per day. That's over 2.5 billion heart beats in a 70-year life!

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