Robogals Science Challenge

Minor Challenge - Activity Sheet

STEM Field	Biology
Challenge Name	Measure Your Heart Rate
Challenge Level	Junior
Project Cost (approx)	0 - 20 USD
Materials Required	• Plastic funnel • Cardboard tube (e.g. paper towel roll) • Masking tape or duct tape • Scissors • Stopwatch • A partner
Duration (approx)	1 - 2 hours

*Some adult supervision is advised with the scissors

Introduction

Your **heart** is a strong muscle inside your chest. It beats all day and all night to pump **blood** around your body.

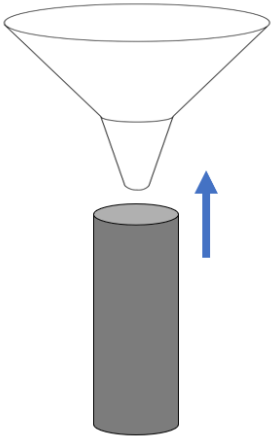
Your **heart rate** is how many times your heart beats in one minute. We count this in beats per minute (or bpm).

Doctors use a tool called a **stethoscope** to listen to your heart.

Today, you're going to make your own simple stethoscope and see how exercise changes your heart rate!

Instructions

Tape a **cardboard tube** to the narrow end of a **funnel**. Make sure it is taped tightly so it doesn't fall off.



Now you're ready to listen to a heartbeat!

1. Place the wide part of the funnel gently on your chest, over your heart.

2. Your partner will listen and count how many beats they hear in one minute (use a stopwatch or timer).
   This is your resting heart rate.

Instructions

For example, if you count 60 beats in one minute, your heart rate is 60 beats per minute (60 bpm).

3. Swap places and measure your partner's resting heart rate.

4. **Now it's time to move!** Do your favourite exercise for one minute — like star jumps, running on the spot, push-ups, or sit-ups.

5. As soon as you finish, your partner will measure your heart rate again. **What do you notice?**

7. Swap and repeat so you both measure your heart rate after exercise.

Try This Too!

Did you know you can feel your heartbeat in other places, like your **wrist** or **neck**?
With adult help, try to gently feel your pulse in these places.
Does it feel the same as when you listened to your heart?
Was it easy or tricky to find?

Think About It

- Would you change anything to make this experiment better?
- Why might your heart rate be different from your partner's?
- Was your heart beating faster after exercise? Why do you think that happened?
- How could you test different exercises? (Hint: You would need to rest between each one!)
- Besides exercise, what else might make your heart beat faster? (Excitement? Being scared? Running late?)

Submission Guidelines

📷 Take a photo of your experiment setup. This could show:

- Your homemade stethoscope
- You measuring a heart rate (with permission)
- Your results written down

✏️ Write a short summary (3–6 sentences). Tell us:

- What happened to your heart rate after exercise
- Why you think it changed
- One or two answers to the reflection questions

The submission form is at the bottom of the following webpage: https://sciencechallenge.org.au/index.php/minor-challenges/

Note: If you want to include yourself in the pictures of your Minor Challenge, make sure you ask your parent or guardian first to see if it's okay.

Learn More! Resources

Science Sparks | Heart Rate Investigation
https://www.science-sparks.com/heart-rate-investigation/