STEM 101
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Name: _____
Period: _____

PULSE OXIMETER INVESTIGATION

UNIT: PULSE OXIMETRY

OBJECTIVE:

Investigate how physical activity affects heart rate and oxygen saturation and explain how the body maintains homeostasis by adjusting heart rate while keeping oxygen levels stable.

MATERIALS:

- ✓ Pulse Oximeter
- ✓ Stopwatch or timer
- ✓ Pencil

STUDENT DIRECTIONS:

Step 1: Prepare the Pulse Oximeter

- Turn on the pulse oximeter.
- Place it on your fingertip.
- Stay still until the numbers stop changing.
- Record your resting measurements.

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Step 2: Investigate and Record

Now it's time to put your body to the test! Pick at least 3 activities from the list below or invent your own. The goal is to see if you can make those numbers move!

Activity Condition	Time (minutes)	Heart Rate (bpm)	Oxygen Saturation (SpO_2 %)
Resting			
Jumping Jacks			
Recovery (1 min)			
Walking			
Recovery (1 mins)			
Jogging in Place			
Recovery (1 min)			

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Step 3: Graph your Results

Use your data to create a graph below.

Graph Instructions

- X-axis → Activity Condition (resting, jumping jacks, recovery, etc.)
- Y-axis → Measurement Values
- Plot TWO lines:
    - Heart Rate (BPM)
    - Oxygen Saturation (%)

Name: _____
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REFLECTION:

Which measurement changed more, heart rate or oxygen saturation? Why?

_____

_____

_____

_____

Which measurement stayed more stable, heart rate or oxygen saturation? Why?

_____

_____

_____

_____

Explain how the body maintains balance during physical activity.

_____

_____

_____

_____