Name: _____

Homeostasis Activity Stations

STATION 1: ASTHMA

***Theory**: Asthma attacks are the body's reaction to foreign substances. They are caused by overreaction of bronchi and bronchioles to various environmental or physiological stimuli resulting in airway inflammation. A person undergoing an asthma attack feels as if they are breathing through a small straw.*

1. Follow the instructions at the station & complete the chart

	REST	Hypothesis	AFTER ACTIVITY
Heart Rate (beats/min)			
Respiratory Rate (Time to take 4 breaths in & out)			

Questions:

1. Was your hypothesis correct?
2. What information did you use to generate your hypothesis?
3. What did you find? Explain why this happens.

STATION 2: PERSPERATION

***Theory**: Perspiration is a saline solution that is emitted through the pores of the skin. The net result of this physiological response is to help regulate body temperature. The solution originates in the sweat glands located under the skin throughout the body. Perspiration can also be triggered by emotions including fear, excitement or anxiety.*

Follow the instructions at the station & answer the questions.

Questions:

1. What did the rubbing alcohol feel like on your skin?
2. Why does it feel this way?
3. What was the temperature of the rubbing alcohol?
4. What happened when you removed the thermometer from the rubbing alcohol?
5. Why does this happen?

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STATION 3: EXERCISE

***Theory**: Exercise causes many homeostatic factors to kick in, in an effort to maintain internal homeostasis. Measuring and observing certain parameters can determine how exercise affects some of these homeostatic factors:*

- *Change in skin colour on arms & face - flushness*
- *Perspiration level*
- *External body temperature*
- *Heart Rate*
- *Breathing Rate*

Follow the instructions at the station & complete the chart

	Perspiration Level (0=dry, 10 = dripping)	**Body Temperature** (°C)	**Heart Rate** (beats/min)	**Breathing Rate** (breaths / min)	**Time to change BTB colour** (secconds)
REST					
2 min					
4 min					
6 min					
1 min <u>AFTER</u> finishing exercise					

Questions:

1. a. What are the changes you observed in body colour & perspirations level in response to exercise?

   b. How do these changes contribute to the maintenance of homeostasis?

2. a. Describe the changes in body temperature?

   b. Why do you think this occurs?

   c. How does your body regulate body temperature during exercise?

3. Describe the changes in heart rate & respiratory rate during exercise?

   b. Why do such changes occur?

4. By looking at your data, what conclusions can you draw about the body's ability to maintain homeostasis?