<table>
<thead>
<tr>
<th>Week 8</th>
<th><strong>Keep it Steady..... Homeostasis</strong></th>
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<tbody>
<tr>
<td><strong>Parent Information</strong></td>
<td>All living things must maintain certain conditions in order to function most efficiently. This is called maintaining homeostasis, or “steady state”. If homeostasis is not maintained, the organism cannot function at its most optimal. If the problem is not corrected, the organism may die. Factors such as water, oxygen, carbon dioxide, pH, salt, sugar, potassium, and calcium levels affect homeostasis, just to name a few. Each organ and organ system functions to maintain homeostasis.</td>
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<tr>
<td><strong>Benchmark</strong></td>
<td>SC.6.L.14.5 Identify and investigate the general functions of the major systems of the human body (digestive, respiratory, circulatory, reproductive, excretory, immune, nervous, and musculoskeletal) and describe ways these systems interact with each other to maintain homeostasis.</td>
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<tr>
<td><strong>Objective</strong></td>
<td>Students will understand the basic functions of the major body systems and how they contribute to maintaining homeostasis.</td>
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<td><strong>Duration</strong></td>
<td>1 hour</td>
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| **Materials** | 1. Stethoscope  
2. Clock or watch with a second hand  
3. Handweights or heavy books  
4. Partner |
| **Procedures** | 1. Find your partner’s resting heart rate by listening to their heart for one minute using the stethoscope and counting the beats.  
2. Switch roles and have your partner measure your resting heart rate.  
3. Record your data in the data table  
4. Stand up straight and hold the weight or books in one hand with your arm straight out to the side. Keep you other hand by your side. Stand this way for 3 minutes.  
5. Tell your partner about any changes you feel, and have them record them in your data table.  
6. Switch roles and record your partner’s comments.  
7. Do jumping jacks, run, or other strenuous activity for 2 minutes. Have your partner measure your heart rate as soon as you stop. Record this in your data table.  
8. Switch roles and record your partner’s heart rate after exercising for 2 minutes.  
9. Sit quietly in a chair. Close your eyes and think relaxing thoughts. Have your partner listen to your heart for 3 minutes while you sit quietly. Your partner will record the number of beats in the 1st, 2nd and 3rd minute.  
10. Switch roles and record your partner’s heart rate for 3 minutes while they sit quietly with their eyes closed for 3 minutes. |
### Discussion Questions:

1. What organ system is your heart part of?
2. What organ system or systems did you feel changes in while you were standing up holding the weights?
3. What role in maintaining homeostasis does your muscular system and skeletal system play?
4. What happened to your heart rate after you exercised?
5. Why did this happen?
6. What other organ systems changed when you exercised?
7. Why did this happen?
8. What happened to your heart rate when you sat quietly?
9. Why is this?
10. What organ system was responsible for this change?

### FCAT Practice

1. A scientist studying the brain is studying part of the
   - A. Endocrine System
   - B. Nervous System
   - C. Muscular System
   - D. Reproductive System

2. The respiratory system helps to maintain homeostasis by
   - A. Bringing in oxygen and releasing carbon dioxide
   - B. Bringing in carbon dioxide and releasing oxygen
   - C. Pushing blood through blood vessels
   - D. Helping the body to stay upright

### Extra Help

### 6th Grade Science Summer Activity

<table>
<thead>
<tr>
<th></th>
<th>Resting Heart Rate</th>
<th>Holding Weights</th>
<th>Heart Rate After Exercising</th>
<th>Heart Rate While Sitting Quietly</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Minute 1</td>
</tr>
<tr>
<td>Me</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My Partner</td>
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