

Activity: Aerobic Performance

Directions: Please review the following charts and accompanying descriptions of the various Heart Rate Zones. Understanding these zones and their characteristics will help you in completing the Partner Exercise Card.

| | | Heart Rate Zones | | | | | | | | |
|--|--|------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | Age | | | | | | | | |
| | | 11 yo | 12 yo | 13 yo | 14 yo | 15 yo | 16 yo | 17 yo | 18 yo | 19 yo |
| MHR | 100% | 209 | 208 | 207 | 206 | 205 | 204 | 203 | 202 | 201 |
| Beats Per Minute | V02 Max (Maximum Effort) | | | | | | | | | |
| | 90% | 188 | 187 | 186 | 185 | 185 | 184 | 183 | 182 | 181 |
| | Anaerobic (Performance Training) | | | | | | | | | |
| | 80% | 167 | 166 | 166 | 165 | 164 | 163 | 162 | 162 | 161 |
| | Aerobic Training (Cardio/Endurance) | | | | | | | | | |
| | 70% | 146 | 146 | 145 | 144 | 144 | 143 | 142 | 141 | 141 |
| Fitness (Fat Burn) | | | | | | | | | | |
| 60% | 125 | 125 | 124 | 124 | 123 | 122 | 122 | 121 | 121 | |
| Moderate Activity (Maintenance/Warm Up) | | | | | | | | | | |
| 50% | 105 | 104 | 104 | 103 | 103 | 102 | 102 | 101 | 101 | |

Fox & Haskell Formula

Moderate Activity (Maintenance/Warm Up)

50-59% of Maximum Heart Rate

This is the best zone for people just starting a fitness program and acts as an appropriate warm up pace. Roughly 85% of calories burned in this zone are fats. The benefits are listed below:

- ↓ body fat
- ↓ blood pressure
- ↓ cholesterol
- ↓ risk of degenerative disease
- ↓ risk of injury

Fitness Zone (Fat Burning)

60-69% of Maximum Heart Rate

This zone provides the same benefits as Moderate Activity Zone, but is more intense and burns more total calories. Roughly 85% of calories burned in this zone are fats. The benefits are listed below:

- ↓ body fat
- ↓ blood pressure
- ↓ cholesterol
- ↓ risk of degenerative disease
- ↓ risk of injury

| | | Heart Rate Zones | | | | | | | | |
|---|-------------------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | Age | | | | | | | | |
| | | 11 yo | 12 yo | 13 yo | 14 yo | 15 yo | 16 yo | 17 yo | 18 yo | 19 yo |
| MHR | 100% | 209 | 208 | 207 | 206 | 205 | 204 | 203 | 202 | 201 |
| Beats Per Minute | V02 Max (Maximum Effort) | | | | | | | | | |
| | 90% | 188 | 187 | 186 | 185 | 185 | 184 | 183 | 182 | 181 |
| | Anaerobic (Performance Training) | | | | | | | | | |
| | 80% | 167 | 166 | 166 | 165 | 164 | 163 | 162 | 162 | 161 |
| | Aerobic Training (Cardio/Endurance) | | | | | | | | | |
| | 70% | 146 | 146 | 145 | 144 | 144 | 143 | 142 | 141 | 141 |
| Fitness (Fat Burn) | | | | | | | | | | |
| 60% | 125 | 125 | 124 | 124 | 123 | 122 | 122 | 121 | 121 | |
| Moderate Activity (Maintenance/Warm Up) | | | | | | | | | | |
| 50% | 105 | 104 | 104 | 103 | 103 | 102 | 102 | 101 | 101 | |

Fox & Haskell Formula

Aerobic Zone (Endurance Training)

70-79% of Maximum Heart Rate

This zone will improve your cardiovascular and respiratory system while also increasing the size and strength of your heart. This is the preferred zone if you are training for an endurance event. The Aerobic Zone is characterized by additional calories being burned with 50% of them from fat reserves and the other 50% coming from glycogen (carbohydrate).

- ↑ cardiovascular endurance
- ↑ ability to sustain activity

Anaerobic Zone (Performance Training)

80-89% of Maximum Heart Rate

The Anaerobic Training Zone is characterized by an increase in the individuals V02 Maximum which is the amount of oxygen they can consume throughout exercise. This zone is a high intensity zone where additional calories are burned with roughly 15% of them coming from fat and the other 85% coming from glycogen (carbohydrate). Some of the benefits of this zone are listed below:

- ↑ cardiovascular system
- ↑ lactate threshold
- ↑ ability to fight fatigue

V02 Max (Maximum Effort)

90-100% of Maximum Heart Rate

Although maximum effort is characterized by the highest number of calories burned it is highly intense. This often means exercise in this category can only be sustained for short amounts of time. Only highly fit individuals should train in this zone and only with clearance from a physician. Some of the highlights of this zone are listed below:

- ↑ need for recovery time
- ↑ risk of injury
- ↑ calories burned (roughly 15% fats)
- ↑ risk of overtraining

PARTNER EXERCISE DATA CARD – AEROBIC PERFORMANCE ACTIVITIES

Application of the Principles of Exercise and the FITT Formula for Cardiorespiratory Fitness

Name: _____ Period/Day: _____ Date: _____

Directions: The Partner Exercise Data Card represents an excerpt from an Exercise Fitness Log that a student might complete for an aerobic activity. Students will complete the Partner Exercise Data Card filling in the required information. They will then submit a graph based on their performance data and write a short answer about possible modifications which could/should be applied to their next workout.

Note: Students will need to answer question #1 and fill out the dark squares on the data card prior to graphing and writing up the full assessment.

1. Calculate an acceptable target zone for your partner heart rate during exercise (show your work).

Personal Exercise Data Card

| | 1. Record partners target exercise heart rate zone for the activity. | 2. Record partners “resting” heart rate. | 3. Record partners “warm-up” heart rate at 1-minute intervals until they are in the target HR zone. | 4. Record partners “exercise” heart rate at 2-minute intervals. | 5. Record “post-exercise” heart rate immediately after exercising. | 6. Record “cool-down” heart rate at 1-minute intervals for 5 minutes | 7. Did exercise heart rate match their goal? |
|----------------|---|---|--|--|---|---|---|
| Workout | | | | | | | YES NO (circle answer) |

9. Submit a graph for items 3 - 7 found in the above chart.

10. How, if at all, would you modify their next workout to reach and maintain their specific target heart rate goal?

HASTINGS HIGH SCHOOL
PHYSICAL EDUCATION
Written Assignment Rubric

| Rubric Score | Rubric Description |
|----------------------------|---|
| 2 points (5 points) | It is evident that I have put a lot of effort into the assignment and my work has been completed according to the direction provided. |
| 1 point (3 points) | I have put effort into the assignment but elements of it are incomplete or incorrect. |
| 0 points | I have put little or no effort into the assignment, and if it has been handed in, it is incomplete or incorrect. |