|  |  |  |
| --- | --- | --- |
| **21st Century Lesson Cycle Template** | | |
| **Grade: 8 Subject: Science / Phys Ed**    **Unit: Body Systems/Fitness** | | |
| **Driving Question: How does Exercise affect my heart rate?** | | |
| **Curriculum Outcomes:**  Choose an item. **Science GCO & Phys Ed**  Choose an item. | | |
| **Expected Time:**  **40 min** | | |
| **Resources: [like flipped videos, iPads, etc.]**  **Link for video below lesson on webpage** | | |
| **Lesson Procedure & Explanation** | | **21st century skills** |
|  | **Teacher does / Explanation** (I Do):  -This lesson is designed for a whole class (science or Phys Ed) or small groups of student’s who may require smaller class settings due to behavior. I have used this lesson with  - When in small group setting I start lesson by asking the student(s) what happens to their heat immediately after they have completed some form of physical activity. They usually know what their heart does (beats faster) but can’t explain why.  - I then explain that their hearts job is to pump oxygen throughout their body and when exercising you need more oxygen and therefore it pumps faster (increasing their BPM)  - I then demonstrate how to take ones pulse by putting your fingers on your neck and counting the number of beats per min (BPM).  - Next I show the student the screencast on how to use the “Instant Heart Rate “ APP and measure their resting heart rate (they should take a screen shot of this when they find their resting HR)  - After the student has identified their resting heart rate with the APP, we then go to the fitness center, gym or any space where we can exercise for a few minutes. (I often have access to treadmills and indoor bikes but if you don’t have these things you can do planks, sit ups or crunches in a small space.)  - Students choose to bike, run or core workout for 3 min (time can vary depending on the student and physical abilities.)  - Immediately after allotted time, student uses Instant Heart Rate APP and measures their BPM (they should take a screen shot of this like before with resting HR)  - The student and teacher then compare the heart rates from per and post exercise. I always ask the student as to why they think their heart rate has changed and then discuss with them why in fact their BPM increased when comparing both HR.  - Students generally enjoy the physical activity and as a goal we discuss the benefits of having a lower heart rate after exercising. As we progress through the year the student can keep a tally of their heart rates when we return to the fitness center and they can monitor their progress on their fitness. | find, validate  remember, understand  **collaborate, communicate**  analyze, synthesize  **critical thinking**  evaluate, leverage  **create**, publish  **citizenship** |
| **Individual student work (You Do):**  - Measure Pulse with fingers and count BPM with timer  - Measure Resting Heart Rate with Instant Heart Rate APP (take screen shot)  - Perform exercise in fitness center  - Measure post activity heart rate immediately after exercise (take screen shot for comparison.)  - Compare both heart rates and suggest why they have changed | find, validate  remember, understand  **collaborate, communicate**  analyze, synthesize  **critical thinking**  evaluate, leverage  **create**, publish  **citizenship** |
| **Group work (We Do):**  - Perform exercises together (I ALLWAYS model the activities for my students.)  - Measure heart rates together  - | find, validate  remember, understand  **collaborate, communicate**  analyze, synthesize  **critical thinking**  evaluate, leverage  **create**, publish  **citizenship** |
| Class share (We Share):  - Analyze heart rates and discuss why they have changed and why the heart needs to pump more oxygen throughout the body during exercise.  - Compare teacher heart rates to students (or one students to another) and discuss why there may be differences. Physical fitness and athletic ability are obviously factors that can influence this. | find, validate  remember, understand  **collaborate, communicate**  analyze, synthesize  **critical thinking**  evaluate, leverage  **create**, publish  **citizenship** |
| **Lesson Wrap Up:**  - Knowing how to accurately measure ones pulse and understanding the connection between exercise and ones HR is a valuable skill and knowledge. I try to enforce the benefits of exercise and healthy living once we have discussed setting fitness goals when we return to the fitness center. I also use this time to mention how things like drugs and alcohol can affect the heart and limit its capabilities. | | |
| **Differentiation/Modification/Enrichment:**  - Pending on the student the exercise of choice may need to be altered. I usually use the bikes and treadmills.  - For enrichment I have students make a Pic Collage on heart rates and list things that are both helpful and harmful for ones HR and fitness. | | |
| **Assessment:**  - For gym class this is participation checklist | | |
| **Teacher Reflection:**  **-** For students who exhibit behavior challenges in the classroom I often take them to the fitness center as a way to “burn off some steam” and we use that time to reflect on their behavior. I also encourage them to monitor their heart rates and we often record them and use them as a goal for when we return. | | |