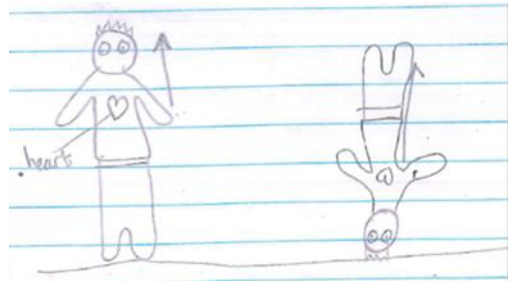


Plan for Focused Assessment of Science

Topic: Animals including humans	Year 6 Age 10-11	Title: Heart Rate Headstands
Working Scientifically Do: Use test result to make predictions to set up further comparative and fair tests		Conceptual Knowledge Context Describe the functions of the heart, blood vessels and blood Recognise the impact of exercise on the way their bodies function
Assessment Focus <ul style="list-style-type: none"> Can children plan a scientific enquiry to answer their question? Can children explain their findings and consider the degree of trust in their results? Can children make predictions based on their results? 		
Activity <i>Today we are going to be biomedical scientists.</i> What do you think happens to your heart when you do a headstand? Ask children to think about other factors that could change their pulse rate. List their ideas and discuss why pulse rate increases during exercise: <i>emphasise that blood carries oxygen around the body and that when you exercise the muscles in your body need more oxygen so your heart works harder to supply more oxygen.</i> Discuss with the children how to plan and carry out a test into headstands or similar. Consider how long the headstand should last, how many measurements should be made, whether one child or several children should be tested, how to carry out the tests safely. Ask the children to carry out the test and record results as a group (tables or graphs). Focus individual recording on explanation of what their data shows, their explanations, degree of trust in results and further predictions.		
Adapting the activity Support: Offer written prompts to support children's predictions: e.g. your brain will get less/more/too much blood, your feet will get less/more blood, your heart will need to pump harder/less hard, it won't make any difference to how hard your heart pumps. Provide a table for children to record their findings: Pulse before, Pulse after, Difference in pulse rate. Extension: What happens to your pulse when you hold your hands above your head? Use your results to make further predictions. Other ideas: Do you think a giraffe has a smaller or greater pulse than you? Find pulse rates of other animals on websites. Or link to healthy living.		
Key Questions <ul style="list-style-type: none"> When was the heart rate the slowest/highest? What is the difference in pulse rate between at rest and after the head stand? Why did you measure the heart rate of several children not just one? Can you see any visible changes caused by blood circulation when a person does a head stand? Does your heart pump blood upwards against gravity? How far does blood travel from the heart to the head / heart to feet? Do you think your results would look the same if you measured the pulse rates of a different group of children? Why do you think the heart beats faster when you are upside down? Suppose we tested Sam's heart rate before he did a head stand, could you predict what it would be immediately afterwards? 		

Assessment Indicators

Not yet met: Children can explain that where the pulse rate goes up, this indicates that the heart is beating faster. They are aware that different children may have different resting pulse rates.

Meeting: Children can use their data to make predictions linking how hard the heart has to work with the heart rate, e.g. *When you are upside down the distance that the blood needs to be pumped upwards is greater, so your heart works harder and beats faster.*

Exceeding: Can explain that it is important to measure the changing pulse rates of several children to get a good picture of the overall pattern as individuals might vary. Can use their tables or graphs to make predictions about different situations, e.g. *If Sam did a headstand his pulse would go up and might be between 170 and 190, but we can't say for sure, If Sam held his hands above his head his heart rate would increase because his heart has to work harder to pump the blood upwards a greater distance*