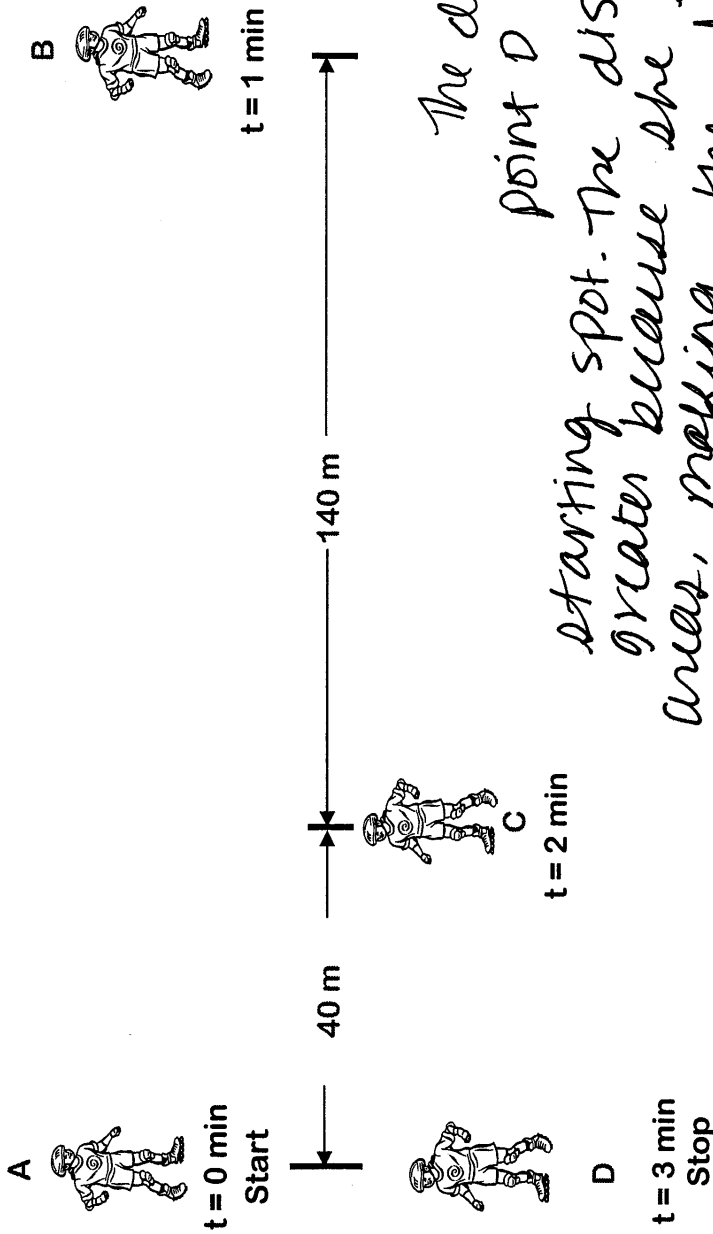


Physical Science

PSc.1.1.1 Explain motion in terms of frame of reference, distance, and displacement.

A student is practicing for her big race. At each of the indicated times, she turns around and reverses the direction of travel or changes her speed until she stops at point D. Based on the diagram, how does the student's displacement at point D compare to the total distance travelled? Explain your answer using the terms frame of reference, distance and displacement. Also, support your answer with mathematical reasoning.



The displacement at point D is very close to the starting spot. The distance is a lot greater because she skated to different areas, making the distance she travelled greater. Her frame of reference to the earth was changing as she changed directions.