

Name: _____ Period: ____ Date: _____ E.N.

Check for Understanding: Motion Diagrams

Ticker tape diagrams are sometimes referred to as oil drop diagrams. Imagine a car with a leaky engine that drips oil at a regular rate. As the car travels through town, it would leave a trace of oil on the street. That trace would reveal information about the motion of the car. Renatta Oyle owns such a car and it leaves a signature of Renatta's motion wherever she goes. Analyze the three traces of Renatta's ventures as shown below. Assume Renatta is traveling from left to right. Describe Renatta's motion characteristics during each section of the diagram.



4. Use the particle model to draw a motion diagram for a runner moving at constant speed.

Begin End

5. Use a particle model to draw a motion diagram for a runner starting at rest and speeding up.

Begin End

6. Use the particle model to draw a motion diagram for a car that starts from rest, speeds up to a constant speed, and then slows to a stop.

Begin End

Vector Diagrams

7. The dots below are a motion diagram for a car speeding up. The starting point is shown. Draw displacement vectors between each pair of dots using a green pencil.

Begin End

8. The dots below are a motion diagram for a runner slowing to a stop at the end of the race. Draw displacement vectors between each pair of dots.

Begin End

9. Draw a ticker tape diagram and then displacement vectors for a bus that first speeds up, then moves at a constant speed, then brakes to a halt. Indicate where the bus is speeding up, at constant speed and slowing down.

10. (CT) Two students compared the position vectors they each had drawn on a motion diagram to show the position of a moving object at the same time. They found that the directions of their vectors were not the same. Explain.