

أوراق عمل درس تصوير الحركة



تم تحميل هذا الملف من موقع المناهج الإماراتية

موقع المناهج ⇨ المناهج الإماراتية ⇨ الصف العاشر ⇨ فيزياء ⇨ الفصل الأول ⇨ ملفات متنوعة ⇨ الملف

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منهج انجليزي | ملخصات وتقارير | مذكرات وبنوك | الامتحان النهائي | للمدرس

المزيد من مادة
فيزياء:

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التواصل الاجتماعي بحسب الصف العاشر



صفحة المناهج
الإماراتية على
فيسبوك

المزيد من الملفات بحسب الصف العاشر والمادة فيزياء في الفصل الأول

كتاب الطالب Physics Inspire باللغة الانجليزية

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أسئلة الوزارة للأعوام السابقة

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الاسئلة الرسمية السابق للصف العاشر عربي - علوم - رياضيات - اجتماعيات وفق المنهاج الاماراتي

3

نموذج الاجابة لامتحان الوزارة

4

تحميل دليل المعلم

5

تحميل تطبيق المناهج للهواتف الذكية

تطبيق المناهج على Play Google (أندرويد)

تطبيق المناهج على Store App (آبل)

Lesson One: Picturing Motion

Physics – Unit 2: Representing Motion | Section 1: Picturing Motion

● Part 1 | What Is Motion?

Motion: A change in the position of an object relative to another, stationary reference object.

A motion diagram is built from two key pieces of information:

- **Position** – where the object is.
- **Time** – when the object was at that position.

● Part 2 | Motion Diagrams

Motion Diagram: A series of images that shows the position of an object at equal time intervals.

Reading a Motion Diagram

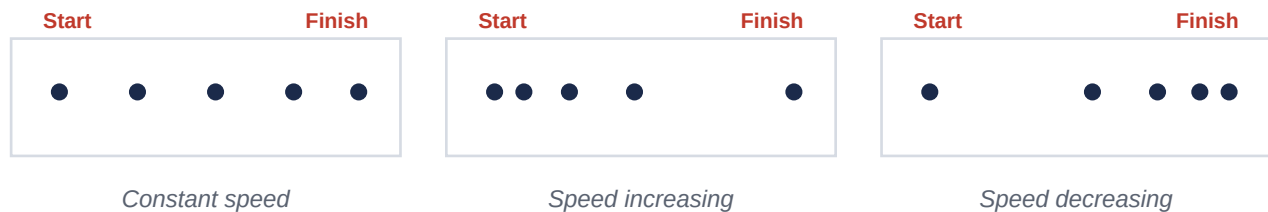


Figure 1. A motion diagram shows an object's position captured at equal time intervals. Wider gaps between marks mean the object covered more distance in the same amount of time — that is, it was moving faster.

● Part 3 | The Particle Model

Particle Model: A simplified way of representing the motion of an object as a series of single points (dots), placed at equal time intervals along the object's path.

- The dot is placed at the **center of the object**.
- It is used because, when an object's size is large compared to the distance it travels, a single point makes the pattern of motion much easier to see and analyze.

The Same Three Patterns, as Points



Figure 2. The particle model reduces each motion diagram to a simple sequence of points, keeping only the information needed to describe the motion.

● Part 4 | Worked Examples: Building a Particle Model

Example 1: A Moving Car



Figure 3. Successive images of a car moving along a road, with the particle model (red dots) marked underneath.

Reading the diagram:

The dots below the car get closer together moving from right (Start) to left (Finish).

The car's speed decreases as it moves toward the finish (to the left).

Example 2: A Flying Bird



Figure 4. Successive images of a bird in flight, with the particle model (red dots) marked underneath.

Reading the diagram:

The dots below the bird are evenly spaced.

The bird is moving at a constant speed.

Practice: Draw the Particle Model

- **Draw the particle model for the car:** the car's speed decreases moving to the left.
- **Draw the particle model for the bird:** the bird moves at a constant speed.

● Part 5 | Applying the Particle Model: A Two-Runner Race

Activity: Draw particle-model motion diagrams for two racers during a race, in which one of them crosses the finish line, while the other covers only three-quarters of the distance to the finish line.

Runner 1 (faster – reaches the finish line)



Runner 2 (slower – covers three-quarters of the distance)

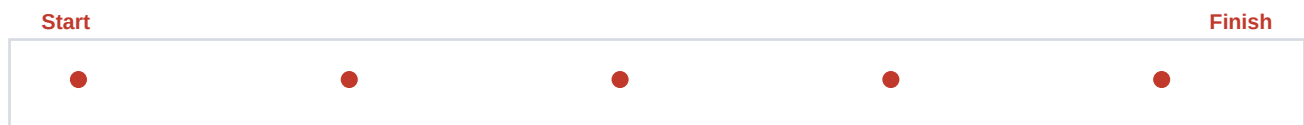


More Motion Patterns

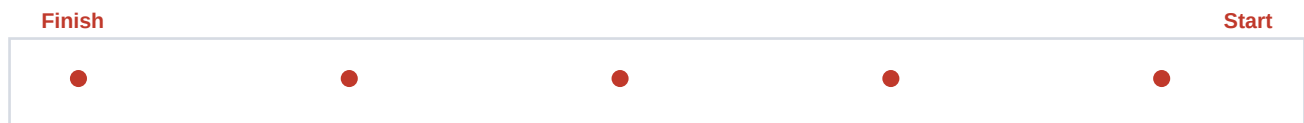
A stationary object



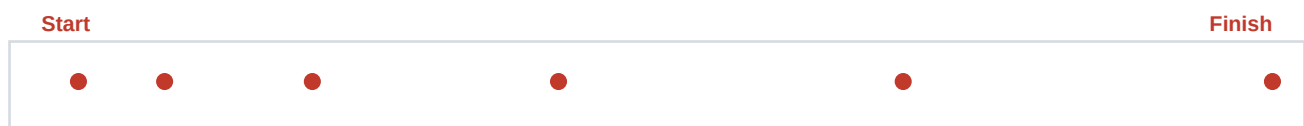
Object moves at a constant speed to the right



Object moves at a constant speed to the left



Object's speed increases moving to the right



Object first moves at a constant speed, then its speed increases, moving to the right

Start

Finish



● Part 6 | Practice Questions

Q1. Which of the following motion diagrams matches the motion of the bird shown in the figure?



A



B

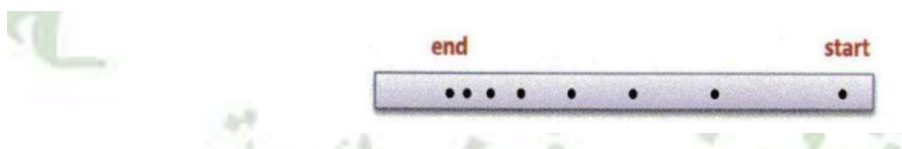


C



D

Q2. Based on the particle model shown below, which of the following statements is correct regarding the object's motion?



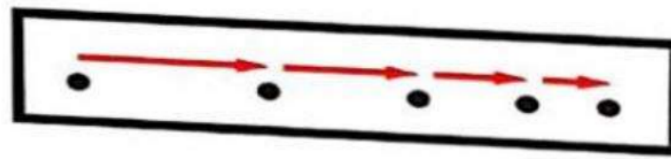
A. The object moves at a constant speed

B. The object accelerates

C. The object decelerates

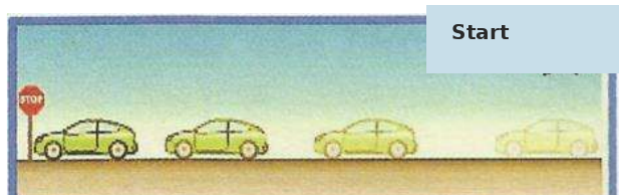
D. The object accelerates at first, then decelerates

Q3. Based on the particle model shown below, which of the following statements is correct regarding the object's motion?



A. The object accelerates	B. The object moves at a constant speed
C. The object is stationary	D. The object decelerates

Q4. Based on the motion of the toy car shown in the adjacent figure, which of the following particle-model motion diagrams for the car is correct?



Q5. Representing an object's motion using a successive series of single points is called

A. The particle model	B. A data table
C. The pictorial representation	D. A (position – time) curve

Q6. When drawing a particle model for an object's motion, if the points were close together at the beginning and then spread farther apart, then the object

A. Is stationary	B. Is accelerating
C. Is decelerating	D. Is moving at a constant speed

Q7. The figure below shows successive positions of two cars (1 and 2) moving along a straight line. Which of the following statements is correct?



A. Both cars are decelerating	B. Both cars are moving at a uniform speed
C. Car 1 is accelerating and Car 2 is decelerating	D. Both cars are accelerating

Q8. Which of the following statements is correct regarding a particle-model motion diagram for a plane flying at a constant speed of 850 km/h?

A. The points will start close together at the beginning, then get farther apart as the plane moves farther from the airport	B. The points will start far apart, then get closer together as the plane moves farther from the airport
C. The points will start close together, then get farther apart, then get close together again another time as the plane moves farther from the airport	D. The points will be evenly spaced, consistently, throughout the diagram