Srini Science Mind

Abdul Kalam Physical Science Group

INSPIRATION * INNOVATION * CREATION * ASPIRATION

APSG

NEW

9th class

PHYSICAL SCIENCE

MODEL LESSON PLAN

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MODEL LESSON PLAN

CLASS: 09 **SUBJECT: PS** **Name of the Teacher: M.Srinivasa Rao** **Name of the School: A.G.K.M.H.School, Gudivada**

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Units and Graphs (Chapter-12)	Physical quantities - Units	1	xx/xx/xxxx	xx/xx/xxxx	
	Fundamental quantities-Units	1	xx/xx/xxxx	xx/xx/xxxx	
	Derived quantities-Units	1	xx/xx/xxxx	xx/xx/xxxx	
	SI system	1	xx/xx/xxxx	xx/xx/xxxx	
	Units of conversion	1	xx/xx/xxxx	xx/xx/xxxx	
	Rules of writing units	1	xx/xx/xxxx	xx/xx/xxxx	
	Graphs	4	xx/xx/xxxx	xx/xx/xxxx	

Prior Concept/Skills:

1. Write fundamental quantities.
2. Write some units of measurements expressed in the name of scientists.
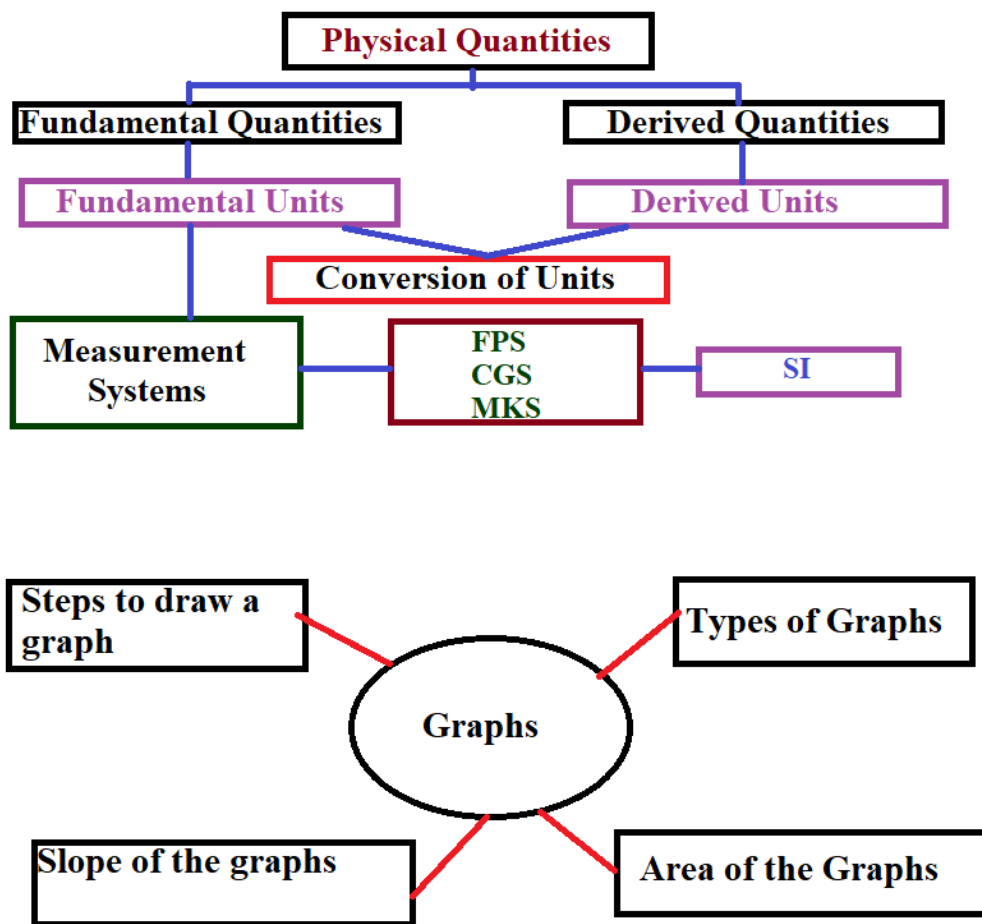3. What is the horizontal line in a graph?

Learning Outcomes:	No. of Periods
1. Classifies physical quantities as fundamental and derived quantities based on properties.	1
2. Classifies physical units as fundamental and derived units based on properties.	1
3. Measures physical quantities using appropriate apparatus, instruments, and devices.	1
4. Uses scientific conventions, symbols, and equations to represent various quantities and units of SI units.	1
5. Calculates using the data given Conversion of units	1
6. Draws graphs and interprets the data.'	1
7. Analyses and interprets Distance – Time, Velocity - Time graphs	1
8. Calculates Slope in Curved Graph.	1
9. Calculates the area of graphs.	1
10. Draws conclusion from graphs.	1

TEACHING LEARNING PROCESS

Induction/Introduction:

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                        Physical Quantities
              ┌──────────────────┴──────────────────┐
      Fundamental Quantities                  Derived Quantities
              │                                        │
        Fundamental Units                        Derived Units
                        └──────────┬──────────┘
                          Conversion of Units
                                    │
     Measurement              FPS
     Systems                  CGS  ──────────     SI
                              MKS
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   Steps to draw a                               Types of Graphs
   graph
                          ┌─────────────┐
                          │   Graphs    │
                          └─────────────┘
   Slope of the graphs                          Area of the Graphs
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Experience and Reflection:
1. Students will learn the measurement systems of things used in daily life.
2. Students can show any information meaningfully through graphs.
3. Students illustrate information by making graphs.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and explain the units of physical quantities.	1. Students collect information on the measuring of mass of the substance in how many ways.	1. Students give a reason. Which is bigger 2 kg or 900g of sugar bags?	1. What is a physical quantity?

2. Discussion and explain the units of measurements.	2. Can we express the mass of chalk in a kilogram? – Group discussion.	2. Students give examples of physical quantities units.	2. What is a unit? Where it is placed?
3. Explain Fundamental quantities and Fundamental units.	3. Students express the measuring systems	3. Students write the common difference in MKS and SI systems.	3. What are fundamental quantities?
4. Discussion and conduct an activity on Derived quantities and Derived units with help of measure the surface area of book using a scale.	4. Students measure the area of a given textbook and express their units.	4. Students complete the homework.	4. Kelvin a derived unit?
5. Discussion and explain Unit Conversion.	5. Students simply approach the conversion methods.	5. Students will solve the problems.	5. Which system of units is universally accepted?
6. Explain the rules of writing units.	6. Students observe the rules of writing units.	6. Students read the units in the names of scientists.	6. dB is the unit for?
7. Discussion and demonstrate the steps in the construction of a graph.	7. Students collect information on the steps in the construction of a graph.	7. Students express the steps in the construction of a graph.	7. What is Range?
8. Explain and draw a graph of Distance-Time.	8. Students draw the distance-time graph in their own way.	8. Students complete the homework.	8. What is a graph?
9. Discussion and demonstrate the draw a graph of Mass – Extension.	9. Students carefully identify the values on X and Y axis.	9. Students draw the mass-Extension graph in their own way.	9. What is Hooke's law?
10. Explain the graph of Pressure – Volume.	10. Students plot the graph.	10. Students follow the construction steps in graph.	10. Which variable is taken on x-axis?
11. Discussion and explain the determine slope in curved graph and area of graph.	11. Students find the slope of a given graph.	11. Students complete the homework.	11. What is the area of graph?

Check For Understanding Questions	TLM's (Digital + Print)
1. Factual: 1. How do you find x – axis scale? 2. Why do we use different units for different items? 3. What is the advantage of knowing the range of values?	1. Used prepared Quiz paper.

2. Open Ended/Critical Thinking:
1. Is displacement a fundamental quantity?
2. What happens if unknown the units of physical quantities?
3. What could be the relation between the two quantities when the graph is a straight line?

3. Student Practice Questions & Activities:
1. Differentiate fundamental quantities and derived quantities.
2. Write any four rules of writing units of measurements.
3. Show that $v = u + at$ in the graphical method.
4. What is slope of the straight line graph?

2. Utilized digital classroom.
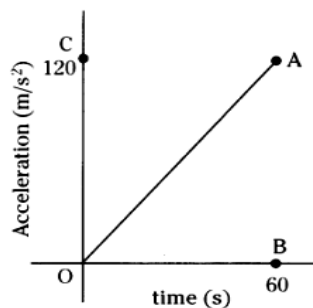
3. Provide video links QR codes, DIKSHA App

4. YouTube video links

Assessment:
1. Draw a graph to the given data.

Velocity (m/s)	0	2	5	8	11	14	16
Time (sec)	0	1	2	3	4	5	6

2. How do you appreciate the role of graphs in solving problems?
3. Write steps in the construction of a graph to the given data in a tabular form.
4. Find the velocity from the graph at A.

SIGNATURE OF THE TEACHER   SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS