GRADE 10 PHYSICS SCHEMES OF WORK FOR TERM 1

NAME OF THE TEACHER:……

SCHOOL:…….. YEAR:…….

WK	LSN	STRAND	SUB-STRAND	LESSON LEARNING OUTCOME	LEARNING EXPERIENCES	KEY INQUIRY QUESTION	LEARNING RESOURCES	ASSESSMENT	REFLECTION
1	1	1.0 Mechanics and Thermal Physics	1.1 Introduction to Physics	By the end of the lesson, the learner should be able to: Explain the meaning of Physics as a body of knowledge in science[2].	The learner is guided to: Work with others to search for the meaning of Physics as a branch of science[3].	How is Physics relevant in day to day life? [4]	2024 Senior School Curriculum Design, Physics Learner's Book, Digital devices, Internet.	Oral questions, Written quizzes.	
	2			By the end of the lesson, the learner should be able to: Describe the main branches of Physics as a field of study[5].	The learner is guided to: Discuss with peers the main branches of Physics (mechanics, electricity, thermodynamics, etc.)[6].		Charts showing branches of Physics, Physics Learner's Book.	Checklists, Oral discussion.	
	3			By the end of the lesson, the learner should be able to: Outline the importance of Physics in day-to-day life[7].	The learner is guided to: Discuss with peers the importance of Physics in day-to-day life and share findings with the class[8].		Digital devices, Physics Learner's Book, Video clips.	Oral presentation, Observation schedule.	
	4			By the end of the lesson, the learner should	The learner is guided to: Discuss with peers the relationship of		Physics Learner's	Written questions,	

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				be able to: Relate Physics to other fields of study[9].	Physics with other fields of study (e.g., Biology, Geography, Chemistry)[10].		Book, Concept maps.	Peer assessment.	
2	1	1.0 Mechanics and Thermal Physics	1.1 Introduction to Physics	By the end of the lesson, the learner should be able to: Identify possible career opportunities in the field of Physics[11].	The learner is guided to: Engage resource person(s) or use print/non-print media to search for information on career opportunities[12].		Resource person, Career pamphlets, Digital devices.	Oral questions, Checklists.	
	2			By the end of the lesson, the learner should be able to: Create career charts highlighting areas related to Physics[13].	The learner is guided to: Design, produce, and present career charts highlighting areas related to Physics[14].		Manila papers, Markers, Glue, Pictures.	Project assessment, Portfolio.	
	3		1.2 Pressure	By the end of the lesson, the learner should be able to: Describe atmospheric pressure as used in physics[15].	The learner is guided to: Discuss with peers the meaning of atmospheric pressure[16].	How does density of fluid affect pressure? [17]	2024 Senior School Curriculum Design, Physics Learner's Book.	Oral questions, Written definition.	
	4			By the end of the lesson, the learner should be able to: Demonstrate	The learner is guided to: Carry out activities to demonstrate the existence of atmospheric pressure in		Tin cans, Heat source, Water, Crushing can apparatus.	Observation, Checklists.	

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				the existence of atmospheric pressure in nature[18].	nature (e.g., crushing can experiment)[19].				
3	1	1.0 Mechanics and Thermal Physics	1.2 Pressure	By the end of the lesson, the learner should be able to: Investigate the effect of density on pressure in fluids[20].	The learner is guided to: Carry out activities to investigate how the density of a fluid affects pressure[21].	How does density affect pressure in fluid? [22]	Liquids of different densities, Manometers, Measuring cylinders.	Lab reports, Observation schedule.	
	2			By the end of the lesson, the learner should be able to: Investigate the effect of depth on pressure in fluids[23].	The learner is guided to: Carry out activities to investigate how depth below the free surface affects pressure in fluids[24].	How does depth affect pressure in fluid? [25]	Tall cylinders, Water, Pressure sensors/gauges.	Lab reports, Oral questions.	
	3			By the end of the lesson, the learner should be able to: Derive the equation $P=\rho gh$ for pressure in fluids[26].	The learner is guided to: Carry out experiments/derivations to derive the equation $P=\rho gh$ to determine pressure in fluid[27].		Physics Learner's Book, Whiteboard, Notebooks.	Written derivation, Calculations.	
	4			By the end of the lesson, the learner should be able to: Apply the equation	The learner is guided to: Use the equation to solve numerical problems involving density, gravity, and height[29].		Calculator, Worksheets, Physics Learner's Book.	Written tests, Homework.	

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				$P=\rho gh$ to determine pressure in fluids[28].					
4	1	1.0 Mechanics and Thermal Physics	1.2 Pressure	By the end of the lesson, the learner should be able to: Demonstrate transmission of pressure in fluids[30].	The learner is guided to: Carry out activities to demonstrate the principle of transmission of pressure in fluids (Pascal's Principle)[31].		Pascal's vases, Syringes, Tubing, Water.	Observation, Oral discussion.	
	2			By the end of the lesson, the learner should be able to: Relate transmission of pressure to the fluid pressure formula[32].	The learner is guided to: Discuss with peers the transmission of pressure in fluid and relate it with the fluid pressure formula[33].		Physics Learner's Book, Digital simulation.	Written questions, Peer review.	
	3			By the end of the lesson, the learner should be able to: Discuss the application of pressure in hydraulic machines[34].	The learner is guided to: Discuss with peers the applications of transmission of pressure in fluids specifically in hydraulic machines[35].		Diagrams of hydraulic systems, Video clips.	Oral questions, Checklists.	
	4			By the end of the lesson, the learner should be able to: Solve problems	The learner is guided to: Apply knowledge of pressure transmission to solve numerical tasks regarding hydraulic lifts and brakes[37].		Worksheets, Calculators.	Written assessment.	

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				involving hydraulic machines[36].					
5	1	1.0 Mechanics and Thermal Physics	1.2 Pressure	By the end of the lesson, the learner should be able to: Explain the working mechanism of a drinking straw and syringe[38].	The learner is guided to: Use print or non-print media to search for information on the applications of atmospheric pressure in drinking straws and syringes[39].		Drinking straws, Syringes, Beakers, Water.	Observation, Oral explanation.	
	2			By the end of the lesson, the learner should be able to: Describe the operation of a siphon[40].	The learner is guided to: Set up a simple siphon and explain how atmospheric pressure enables the transfer of liquid[41].		Rubber tubes, Beakers, Water at different levels.	Practical assessment, Lab report.	
	3			By the end of the lesson, the learner should be able to: Explain the working mechanism of a bicycle pump[42].	The learner is guided to: Dismantle or observe a bicycle pump to understand how valves and pressure work together[43].		Bicycle pump, Diagrams.	Checklists, Oral questions.	
	4			By the end of the lesson, the learner should be able to: Describe mechanisms of water pumping[44].	The learner is guided to: Search for information on mechanisms of water pumping (e.g., lift pump, force pump) and discuss with peers[45].		Charts of pumps, Digital devices.	Written description, Sketches.	

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6	1	1.0 Mechanics and Thermal Physics	1.3 Mechanical Properties of Materials	By the end of the lesson, the learner should be able to: Explain the properties of ductility and malleability[46].	The learner is guided to: Discuss with peers and carry out activities to demonstrate ductility and malleability of locally available materials[47].	Why is it important to study mechanical properties? [48]	Wires, Metal sheets, Hammer, Physics Learner's Book.	Observation, Oral questions.	
	2			By the end of the lesson, the learner should be able to: Demonstrate the properties of elasticity and brittleness[49].	The learner is guided to: Carry out activities to demonstrate elasticity (springs/rubber) and brittleness (chalk/glass)[50].		Springs, Rubber bands, Chalk, Glass rod.	Checklist, Practical log.	
	3			By the end of the lesson, the learner should be able to: Explain strength, hardness, and stiffness of materials[51].	The learner is guided to: Carry out activities to compare strength, hardness, and stiffness of different locally available materials[52].		Stones, Wood, Metal bars, Scratch tests.	Oral discussion, Written summary.	
	4			By the end of the lesson, the learner should be able to: Investigate the relationship between tensile force and extension (Hooke's Law)[53].	The learner is guided to: Carry out activities to determine the relationship between tensile force and extension (constant of elasticity)[54].	Why does a string snap easily compared to a spring? [55]	Retort stands, Springs, Masses, Rulers.	Graph plotting, Lab report.	

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7	1	1.0 Mechanics and Thermal Physics	1.3 Mechanical Properties of Materials	By the end of the lesson, the learner should be able to: Determine tensile stress and strain using formulae[56].	The learner is guided to: Use mathematical relationships to determine tensile stress (F/A) and tensile strain ($\Delta L/L_0$)[57].		Calculators, Worksheets.	Written calculations.	
	2			By the end of the lesson, the learner should be able to: Determine the modulus of elasticity (Young's Modulus)[58].	The learner is guided to: Calculate Young's modulus ($Y = \text{stress}/\text{strain}$) for different materials using provided data[59].		Physics Learner's Book, Data tables.	Written quiz.	
	3			By the end of the lesson, the learner should be able to: Analyze breaking stress and elastic limit[60].	The learner is guided to: Interpret stress-strain graphs to identify elastic limit, yield point, and breaking stress[61].		Graph papers, Pre-drawn stress-strain curves.	Data interpretation exercises.	
	4			By the end of the lesson, the learner should be able to: Describe applications of mechanical properties of materials[62].	The learner is guided to: Use digital devices to search for industrial applications of various mechanical properties of materials[63].		Digital devices, Internet, Industry case studies.	Group presentation.	
8		**MID-TERM**	**MID-TERM**	**MID-TERM**	**MID-TERM**	**MID-TERM**	**MID-TERM**	**MID-TERM**	

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9	1	1.0 Mechanics and Thermal Physics	1.3 Mechanical Properties of Materials	By the end of the lesson, the learner should be able to: Appreciate the importance of mechanical properties in day-to-day life[64].	The learner is guided to: Discuss and present on why specific materials are chosen for specific tasks (e.g., bridges, car bodies) based on properties[65].		Pictures of structures, Real-life objects.	Oral discussion, Reflection journal.	
	2		1.4 Temperature and Thermal Expansion	By the end of the lesson, the learner should be able to: Explain the meaning of temperature and its units[66].	The learner is guided to: Discuss the meaning of temperature and the SI and common units used[67].		Physics Learner's Book.	Oral questions.	
	3			By the end of the lesson, the learner should be able to: Measure temperature using liquid expansion devices[68].	The learner is guided to: Carry out activities to measure temperature using liquid-in-glass thermometers[69].		Laboratory thermometers, Water baths (warm/cold).	Practical observation.	
	4			By the end of the lesson, the learner should be able to: Describe temperature measurement using bimetallic devices and	The learner is guided to: Use digital media to search for information on bimetallic strips and thermocouples[71].		Bimetallic strips, Digital resources, Videos.	Written descriptions.	

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				thermocouples [70].					
10	1	1.0 Mechanics and Thermal Physics	1.4 Temperature and Thermal Expansion	By the end of the lesson, the learner should be able to: Describe advanced temperature measurement technologies[72].	The learner is guided to: Search for information on resistive temperature devices (RTDs), thermistors, and infrared radiators[73].		Digital devices, Internet.	Research notes, Oral sharing.	
	2			By the end of the lesson, the learner should be able to: Investigate thermal expansion in solids[74].	The learner is guided to: Carry out activities to demonstrate thermal expansion in solids (e.g., ball and ring experiment)[75].	Why does a lid of a sufuria made wider? [76]	Ball and ring apparatus, Burners.	Observation, Checklists.	
	3			By the end of the lesson, the learner should be able to: Determine linear expansivity of metals[77].	The learner is guided to: Perform experiments to determine linear expansivity of metals like iron, steel, or copper[78].		Expansion apparatus, Metal rods, Micrometers.	Lab report, Calculations.	
	4			By the end of the lesson, the learner should be able to: Investigate thermal expansion in fluids[79].	The learner is guided to: Perform experiments to demonstrate thermal expansion in liquids and gases[80].		Flasks, Glass tubes, Colored water, Balloons.	Observation, Oral explanation.	
11	1	1.0 Mechanics	1.4 Temperature	By the end of the lesson, the	The learner is guided to: Discuss the	Why does a glass bottle	Graphs of water density	Written explanation.	

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		and Thermal Physics	and Thermal Expansion	learner should be able to: Explain the unusual expansion of water[81].	anomalous expansion of water and its ecological significance (ice floating)[82].	break when water freezes? [83]	vs temp, Physics Learner's Book.		
	2			By the end of the lesson, the learner should be able to: Describe applications of thermal expansion: Thermostats[84].	The learner is guided to: Discuss the application of thermal expansion in thermostats used in electrical devices[85].		Real thermostats (if available), Diagrams.	Oral questions.	
	3			By the end of the lesson, the learner should be able to: Describe applications of thermal expansion in construction[86].	The learner is guided to: Search for information on expansion joints in bridges, power lines, and railway tracks[87].		Pictures of bridges/railways, Digital devices.	Case study analysis.	
	4			By the end of the lesson, the learner should be able to: Appreciate the applications of thermal expansion in day-to-day life[88].	The learner is guided to: Summarize various applications including flash light/indicator systems and metal work[89].		Posters, Charts.	Portfolio, Peer presentation.	
12		**END OF TERM**	**END OF TERM**	**END OF TERM**	**END OF TERM ASSESSMENT**	**END OF TERM**	**END OF TERM**	**END OF TERM**	

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13		CLOSURE OF SCHOOL	CLOSURE OF SCHOOL	CLOSURE OF SCHOOL	CLOSURE OF SCHOOL	CLOSURE OF SCHOOL	CLOSURE OF SCHOOL	CLOSURE OF SCHOOL	