FIRST TERM WEEKLY LESSON NOTES WEEK 9

Duration: 100mins Strand: Forces & Energy Class: B9 Class Size: Sub Strand: Energy Content Standard: Indicator: B9.4.1.1 Show understanding of the concept of conservation of energy and ways of conservation of energy and ways of conserving energy Indicator: Lesson: Performance Indicator: Learners can explore and identify various strategies for conserving energy. Core Competencies: I of 3 Description Communication and Collaboration (CC) Digital Literacy (DL), Creativity and Innovation	Week Ending: 30-11-2023			Y:	Subject: Science			
Class: B9 Class Size: Sub Strand: Energy Content Standard: B9.4.1.1 Show understanding of the concept of conservation of energy and ways of conservation of energy and ways of conserving energy Indicator: B9.4.1.1 List the ways to conserve energy. Examples: ironing in bulk, using energy efficient appliances and switching off appliances when not in use. Lesson: I of 3 Performance Indicator: Learners can explore and identify various strategies for conserving energy. Core Competencies: Critical Thinking and Problem Solving (CP), Communication and Collaboration (CC) Digital Literacy (DL), Creativity and Innovation Digital Literacy (DL), Creativity and Innovation	Duration: 100mins				Strand: Forces & Energy			
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References: Science Curriculum Pg. 106	References: Science Cu	ırriculum Pg. 10)6					
New words: Energy Conservation, Sustainable Practices, Energy Efficiency,	New words: Energy Co	nservation, Sust	staina	able Practices, Energy Efficien	су,			
Phase / Dumption Learnang Activities	Phase/Duration	Loownowa Activ				Pasau		
PHASE I: STARTER Begin the lesson with a simple question: "What do you think it	PHASE I: STARTER	Begin the less	on w	vith a simple question: "What	do you think it	Resources		
Allow learners to share their initial thoughts and ideas. Write their responses on the board.		Allow learners responses on	serve s to the l	e energy?" share their initial thoughts ar board. icators and introduce the less	nd ideas. Write their			
PHASE 2: NEW Facilitate a discussion on the importance of conserving energy and Pictures and charts	PHASE 2: NEW	Facilitate a discussion on the importance of conserving energy and Pictures and charts						
LEARNINGits impact on the environment.Interactive activities related to energy conservation, sustainable practices, and energy efficiency.	LEARNING	its impact on t Introduce key practices, and	the e v terr l enei	environment. ms such as energy conservation rgy efficiency.	on, sustainable	Interactive activities related to energy conservation		
Ask learners to brainstorm everyday activities that require energy and ways these activities can be done more efficiently.		Ask learners to brainstorm everyday activities that require energy and ways these activities can be done more efficiently.						
Divide learners into small groups. Provide each group with a list of energy conservation tips.		Divide learner Provide each g	rs int grou	to small groups. 1p with a list of energy conser	vation tips.			
Ask them to discuss and categorize the tips into practical strategies for conserving energy at home, school, or in their community.		Ask them to d for conserving	discu g ene	iss and categorize the tips int ergy at home, school, or in th	o practical strategies eir community.			
Have each group present their categorized tips to the class.		Have each gro	oup p	present their categorized tips	to the class.			
Challenge learners to identify and list electronic devices that consume energy when turned off.		Challenge lear consume ener	rners rgy w	s to identify and list electroni vhen turned off.	c devices that			
Discuss strategies to reduce phantom energy consumption.		Discuss strate	egies	to reduce phantom energy c	onsumption.			

	Have learners come up with additional energy conservation tips and encourage learners to pick one tip to implement in their daily lives.
	 <u>Assessment</u> I. Explain the concept of energy conservation in your own words. Why is it important in our daily lives? 2. Discuss a specific energy conservation tip that you find practical and explain how you can implement it at home or school. 3. What are sustainable practices, and how do they contribute to energy conservation?
PHASE 3:	Use peer discussion and effective questioning to find out from
REFLECTION	learners what they have learnt during the lesson.
	Take feedback from learners and summarize the lesson.

Week Ending: 30-11-2023		D	AY:	Subject: Science		
Duration: 100mins				Strand: Forces & Energy		
Class: B9 C			lass Size:	Sub Strand: Energy		
Content Standard: B9.4.1.1 Show understanding of the concept of conservation of energy and ways of conserving energy			Indicator: B9.4.1.1.2 Explain the import in daily life.	rtance of energy conservation 2 of 3		Lesson: 2 of 3
Performance Indicator: Learners can explore and understand the conservation in their daily lives.			importance of energy	Core Competencies: Critical Thinking and Problem Solving (CP), Communication and Collaboration (CC) Digital Literacy (DL), Creativity and Innovatio		
References: Science Cu	rriculum Pg. 10	07				
New words: Energy Co	nservation, Sus	stai	nability, Environmental Impact,	Renewable Energy		
Phase/Duration	Learners Act	iviti	es	novaling guardian	Kesour	rces
	Allow learner Write their r for the discus	rs to rs to resp ssio	o share their initial thoughts ar onses on the board to create a n.	in our daily lives?" nd experiences. a visual reference		
PHASE 2: NEW	Discuss the in	<u>ייי 8</u> חסמ	ortance of gathering informatio	on to understand	Picture	es and charts
LEARNING	complex topi Introduce the important in Explain that le this topic.	es l e ma our ear	ike energy conservation. ain question: "Why is energy c daily lives?" ners will conduct research to f	onservation find information on		
	Provide learn such as: • What conse • How • In wh activit Allow learner information. Form small gr Encourage th different person	t ar erva do nat ties rs te rou em	with guiding questions on ene e the environmental benefits of ation? es energy conservation contrib ways can individuals save energy ? o use computers or tablets to ps and have learners discuss th to share insights, ask question	ergy conservation, of energy oute to sustainability? gy in their daily research and gather neir findings. s, and consider		

	Facilitate a whole-class discussion where each group shares key points from their research.Summarize the collective understanding of why energy conservation is crucial in daily life.	
	 <u>Assessment</u> Based on your research, what are the environmental benefits of energy conservation? How does energy conservation contribute to the concept of sustainability? In what ways can individuals save energy in their daily activities? Provide specific examples. Reflect on your own habits: What changes can you make in your daily life to contribute to energy conservation? 	
PHASE 3: REFLECTION	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.	
	Take feedback from learners and summarize the lesson.	

Week Ending: 30-11-2023		D	AY:	Subject: Science			
Duration: 100mins				Strand: Forces & Energy			
Class: B9			lass Size:	Sub Strand: Energy	y		
Content Standard: B9.4.1.2 Demonstrate understanding in and the capability to do calculations involving energy.			Indicator: B9.4.1.2.1 Explain how to calculate energy consum- over a period of time		ed	Lesson: 3 of 3	
Performance Indicator: Learners can calculate electrical energy consumption using the formula P = IV, where P is power, I is current, and V is voltage and apply this knowledge to calculate energy consumption in Kilowatt- hours (kWh) for common electrical appliances.					s: Problem Solving (CP), Collaboration (CC) Creativity and Innovation		
New words: Electrical E	Irriculum Pg. 10		on: Power Voltage (V) and C	urrent (I) Kilowatt-bo	ur (kW	b)	
INCO WOLDS. LIECUICAL		ipu	on, i ower, voltage (v) and C	un enc (1), Kilowalt-IIC		'' '	
Phase/Duration	Learners Act	iviti	ies		Resour	rces	
PHASE I: STARTER	Begin the lesson with a real-world scenario: "Imagine you have a device that uses electrical energy. How do you think we can measure and calculate the amount of energy it consumes?" Allow learners to share their initial thoughts, and write their responses on the board. Introduce the term "electrical energy consumption" and explain that it's measurable using specific formulas. Share learning indicators and introduce the lesson						
PHASE 2: NEW LEARNING	Introduce the power when	e fo vol	rmula P = IV, explaining that it tage (V) and current (I) are kn	is used to calculate own.	Picture List of	es and charts typical power	
	Discuss the c consumption	ono.	cept of power and its relevance	e to electrical energy	ratings electric	for common cal appliances	
	Provide examples of electrical appliances and their power ratings.						
	Guide learned consumption	rs t in l	hrough the calculation of elect kilowatt-hours (kWh) using th	rical energy e formula P = IV.			
	Distribute a l appliances.	ist (of typical power ratings for co	mmon electrical			
	In pairs or sm consumption	nall (k\	groups, have learners calculate Wh) for each appliance using th	e the energy ne formula.			
	Facilitate a dia discusses any	scu ch	ssion where each group shares allenges faced during the calcul	s their findings and ations.			
	Encourage lea different appl	arno iano	ers to compare the energy cor ces.	nsumption of			

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Give learners a set of practice problems or scenarios that involve calculating energy consumption for various appliances.	
Encourage learners to apply the formula independently, and circulate the room to provide assistance as needed. Example: Calculate the energy consumption (in kWh) for a device with a power rating of 500 watts running for 3 hours	
Solution To calculate the energy consumption (in kilowatt-hours, kWh) for a device with a power rating of 500 watts running for 3 hours, you can use the formula:	
Energy Consumption (kWh)} = $\frac{Power(Watts)*Time(Hours)}{1000}$	
Given: - Power (P) = 500 watts - Time (t) = 3 hours	
Substitute these values into the formula:	
Energy Consumption (kWh)} = $\frac{500 * 3}{1000}$	
Energy Consumption (kWh)} = $\frac{1500}{1000}$	
Energy Consumption (kWh) = 1.5 kW	
Therefore, the energy consumption for the device is 1.5 kilowatt- hours.	
 Assessment Calculate the energy consumption (in kWh) for a device with a power rating of 500 watts running for 3 hours. List two factors that contribute to the power consumption of an electrical appliance. How might you reduce the energy consumption of a device? A computer has a power rating of 120 watts. If it runs continuously for 5 hours, what is the energy consumption in kilowatt-hours? An LED light bulb has a power rating of 9 watts. If it is used for 8 hours per day, how much energy does it consume in kilowatt-hours over a week? A microwave oven has a power rating of 800 watts. If it is used for 10 minutes to heat food, what is the energy consumption in 	

PHASE 3: REFLECTION	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.	
	Take feedback from learners and summarize the lesson.	