

Sample calculations per year

General formula = per hour x daily use x 365

Microwave on high

Energy = 1.679 per hour x 0.5 hours x 365 = 306.4 kWh

CO₂ = 1.7017 per hour x 0.5 x 365 =

Cost = 0.2331 per hour X 0.5 x 365 = \$42.54

Part B

Using the formula $E = P \times T$

Where **P** = Power in Watts

T = time in seconds

E = energy in Watts/sec

For each appliance determine if the Energy (kWh) from the above table is in agreement to that calculated using the wattage of the appliance. Show all calculations clearly.

Part C

Determine the energy transformations of the following appliances

Appliance	Energy Transformed
Microwave	
Incandescent	
CFL	
Hairdryer	
Computer	
Kettle	

Part D

Based on the above information make five (5) **recommendations** of how you could conserve energy in your home.

Recommendation	Strategy
1	
2	
3	
4	
5	

Criteria Sheet – Energy Audit

ASSESSABLE ELEMENTS	DESCRIPTORS				
	A	B	C	D	E
	The student work demonstrates evidence of:				
Knowledge and understanding	Comprehensive knowledge and understanding of concepts, facts and procedures	Thorough knowledge and understanding of concepts, facts and procedures	Satisfactory knowledge and understanding of concepts, facts and procedures	Variable knowledge and understanding of concepts, facts and procedures	Rudimentary knowledge and understanding of concepts, facts and procedures
Investigating	Insightful application of science procedures to plan and conduct investigations	Effective application of science procedures to plan and conduct investigations	Competent application of science procedures to plan and conduct investigations	Variable application of science procedures to plan and conduct investigations	Minimal application of science procedures to plan and conduct investigations
	Discerning analysis and evaluation to draw well-reasoned conclusions	Logical analysis and evaluation to draw reasoned conclusions	Relevant analysis and evaluation to draw credible conclusions	Narrow analysis and evaluation to propose obvious conclusions	Cursory analysis and evaluation to propose conclusions
Communicating	Clear and accurate communication using illustrations, representations and terminology	Coherent and accurate communication using illustrations, representations and terminology	Sound communication using illustrations, representations and terminology	Disjointed communication using some illustrations, representations and terminology	Unclear communication using some illustrations and representations and terminology
Reflecting	Perceptive reflection on science investigations, values, perspectives and learning	Informed reflection on science investigations, values, perspectives and learning	Relevant reflection on science investigations, values, perspectives and learning	Superficial reflection on science investigations, values, perspectives and learning	Cursory reflection on science investigations, values, perspectives and learning

Common Curriculum Elements addressed in this task:

- Translating from one form to another.
- Using correct spelling punctuation and grammar.
- Using vocabulary appropriate to a context.
- Recording/noting data
- Compiling results in tabular form.
- Calculating with or without a calculator.
- Setting out/presenting/arranging/displaying.
- Explaining to others.
- Applying a progression of steps to achieve the required answer.
- Analysing
- Synthesising
- Justifying
- Manipulating/operating/using equipment