

Motors, Generators, and Transformers...oh my!

Where can you find electric motors, electric generators, and electrical transformers? Your task is to make a product presenting each of these devices. You may make a powerpoint, prezi, video, physical "book", or make a suggestion if you have an alternative idea.

Required pieces:

1. First, you will need to write/narrate a complete description of each device and how it works in terms of physics.
2. Find one example each of the actual devices. Provide a visual representation of your example: pictures, video clip, diagram/drawing. None of these can already be labeled with explanations and descriptions. Video clips cannot already include narration on how it works, you must provide your own description. Try to find unique examples in your own home around you. If you do just use search results on Google, Bing, or Yahoo...you may want to look past the first page of results.
3. Write/narrate a complete description of how each example is used as the device. Identify and explain the purpose as many of the parts of the device in your example as possible.

Order:

Start with

- Title of Project
- Your name
- Your block #
- Date

Electric Motor

- Completely describe what an electric motor is and how it operates. Terms you must have (but not limited to): magnetic field, electric current, commutator, voltage source, electromagnet, mechanical energy, electrical energy
- One electric motor example
- One paragraph describing how the example is used as an electric motor.

Electric Generator

- One paragraph describing what an electric generator is and how it operates. Terms you must have (but not limited to): magnetic field, electric current, electromagnet induction, mechanical energy, electrical energy, coil of wire
- One electric generator example
- One paragraph describing how the example is used as an electric generator.

Electrical Transformer

- One paragraph describing what an electrical transformer is and how it operates. Terms you must have (but not limited to): magnetic field, electric current, electromagnet induction, primary coil, secondary coil, iron core, voltage
- One electrical transformer example
- One paragraph describing how the example is used as an electrical transformer.

Use the provided rubric to grade yourself before you submit your final product.

Please make sure your references are school appropriate. Any evidence of plagiarism and the project will not be graded.

Submit your final project through my county email...michael.teters@cobbk12.org

Please include your name and "Motor Project" in the email's subject.

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Student Name: _____

		Points Available				Total
Overall Quality and Creativity		5 Top notch!	4 Above average	3 Average	1 Looks like it was thrown together at last second	
Electric Motor	Motor description	6 • Complete and accurate description of a motor • Correctly uses all required terms	4 • Mostly complete and accurate description of a motor • Uses most required terms. Terms are mostly used correctly	2 • Incomplete and/or inaccurate description of a motor • Uses few if any required terms. Terms used incorrectly	0 • No description provided	
	Example	3 • Example represents a motor in use.	2 • Example mostly represents a motor. • Just a motor, but not in use.	1 • That's a bit of stretch to be a motor or used as a motor	0 • No example provided • That's not a motor	
	Description of example	6 • Complete and accurate description of the example being used as a motor. • All parts accurately identified and explained.	4 • Mostly complete and accurate description of the example being used as a motor. • Most parts accurately identified and explained.	2 • Description present, but does not accurately describe being used as a motor or its parts	0 • No description of example provided	
Electric Generator	Generator description	6 • Complete and accurate description of a generator • Correctly uses all required terms	4 • Mostly complete and accurate description of a generator • Uses most required terms. Terms are mostly used correctly	2 • Incomplete and/or inaccurate description of a generator • Uses few if any required terms. Terms used incorrectly	0 • No description provided	
	Example	3 • Example represents a generator in use.	2 • Example mostly represents a generator. • Just a generator, but not in use.	1 • That's a bit of stretch to be a generator or used as a generator	0 • No example provided • That's not a generator	
	Description of example	6 • Complete and accurate description of the example being used as a generator. • All parts accurately identified and explained.	4 • Mostly complete and accurate description of the example being used as a generator. • Most parts accurately identified and explained.	2 • Description present, but does not accurately describe being used as a generator or its parts	0 • No description of example provided	
Electrical Transformer	Transformer description	6 • Complete and accurate description of a transformer • Correctly uses all required terms	4 • Mostly complete and accurate description of a transformer • Uses most required terms. Terms are mostly used correctly	2 • Incomplete and/or inaccurate description of a transformer • Uses few if any required terms. Terms used incorrectly	0 • No description provided	
	Example	3 • Example represents a transformer in use.	2 • Example mostly represents a transformer. • Just a transformer, but not in use.	1 • That's a bit of stretch to be a transformer or used as a transformer	0 • No example provided • That's not a transformer	
	Description of example	6 • Complete and accurate description of the example being used as a transformer. • All parts accurately identified and explained.	4 • Mostly complete and accurate description of the example being used as a transformer. • Most parts accurately identified and explained.	2 • Description present, but does not accurately describe being used as a transformer or its parts	0 • No description of example provided	