

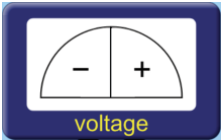
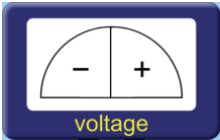
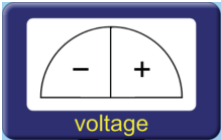
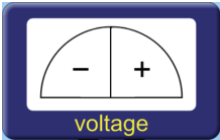
Building, Exploring, and Discovering how Electric Motors Work

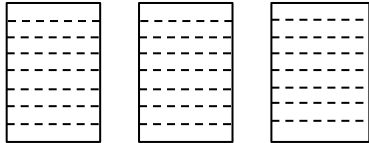
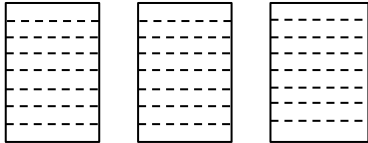
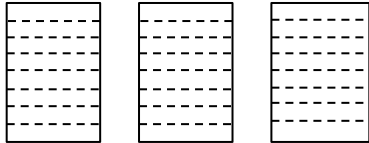
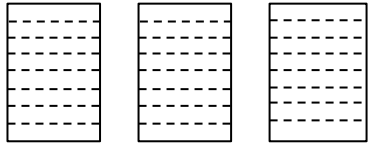
For rotary motor see <http://bit.ly/makeyourownmotor>

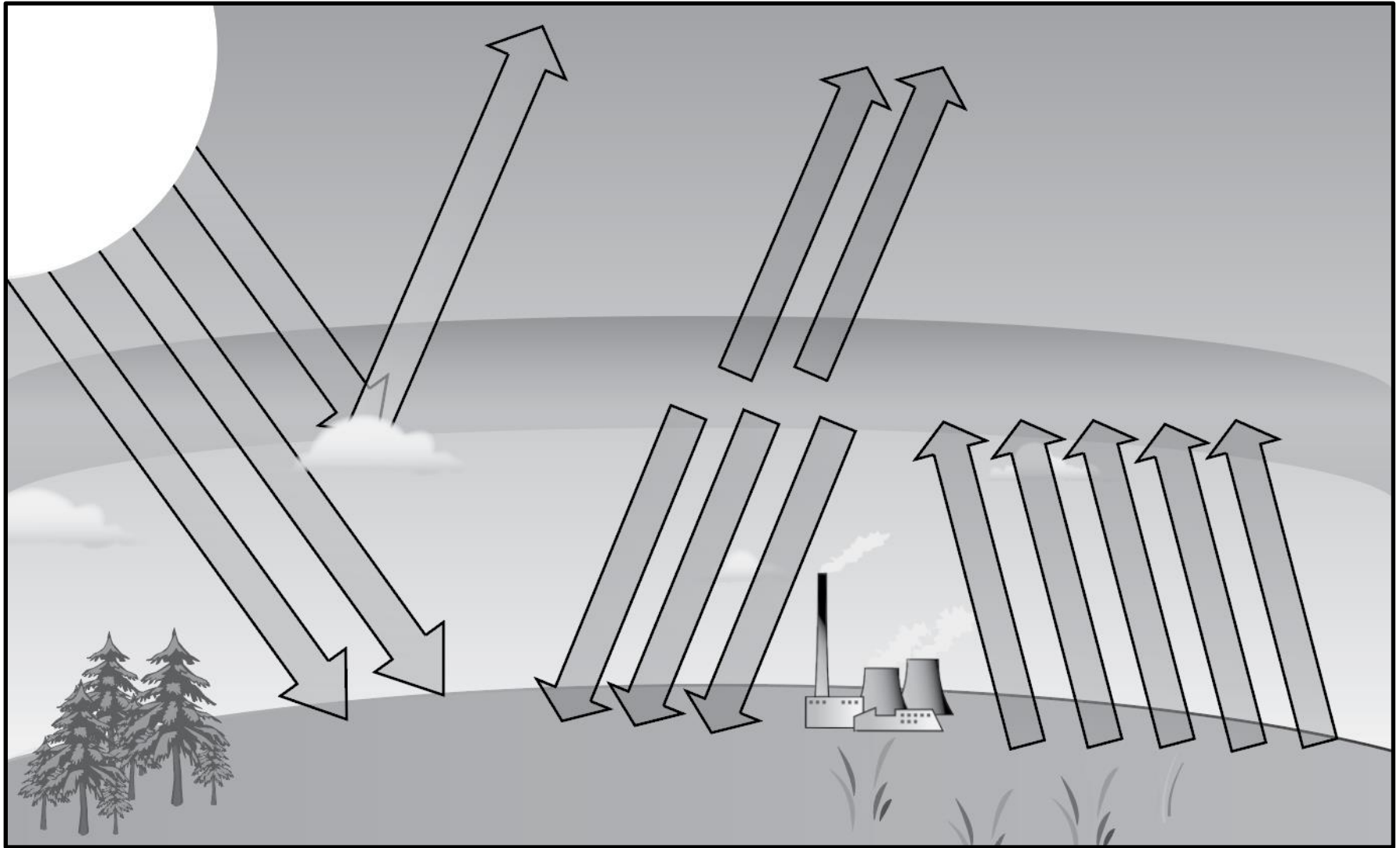
Time (ms)	0	5	10	15
Annotated Real World Picture				
Music/electric Signal from Phone				
Description in Words				
Energy Bar charts	<div> <div>Phone</div> <div>Speaker</div> <div>Air</div> <div>System</div> </div> <div> <div></div> <div></div> <div></div> <div></div> </div> <div>E Elec.</div>	<div> <div>Phone</div> <div>Speaker</div> <div>Air</div> <div>System</div> </div> <div> <div></div> <div></div> <div></div> <div></div> </div> <div>E Elec.</div>	<div> <div>Phone</div> <div>Speaker</div> <div>Air</div> <div>System</div> </div> <div> <div></div> <div></div> <div></div> <div></div> </div> <div>E Elec.</div>	<div> <div>Phone</div> <div>Speaker</div> <div>Air</div> <div>System</div> </div> <div> <div></div> <div></div> <div></div> <div></div> </div> <div>E Elec.</div>

Summary	Motors work by _____.
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Building, Exploring, and Discovering how Electric Generators Work see bit.ly/PhETFaradaysLaw

Description	0	5	10	15
Annotated Real World Picture				
Output Electricity				
Description in Words				

Energy Bar charts	 F	 F	 F	 F
Summary	Generators work by _____.			



Energy Stored

Exploring Our Engineering Challenge

Problem Statement: What is the problem that you are trying to solve?

Describe the Constraints for your Energy Plan:

Constraint 1

Constraint 2

Constraint 3

Describe the Criteria for Each of the Energy Sources

Criterion 1

Criterion 2

Criterion 3

Make a claim: Which of the criteria above is your highest priority, and why? (This will help develop your strategy.)

What possibly might happen if you do not solve the problem?

Evaluating Competing 50 Year Energy Plans

What are the strengths and weaknesses of your plan in terms of the criteria?

What are the strengths and weaknesses of the competing plan in terms of the criteria?

Describe the overall strategy of your plan.

Describe the overall strategy of the competing plan.

Strengths	Weaknesses	Strengths	Weaknesses
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Reasoning about the Best Design		
Claim: Restate your claim about which criterion is most important (see introduction paragraph) and state which plan best fulfills that priority.		
Most Important Criterion	Important Difference Between Plan A and Plan B	What energy resource / strategy did the plan use to achieve that difference?
Very Important	Important Difference Between Plan A and Plan B	What energy resource / strategy did the plan use to

Criterion		achieve that difference?
Really Important Criterion	Important Difference Between Plan A and Plan B	What energy resource / strategy did the plan use to achieve that difference?
Concluding statement: Summarize (in terms of the priority of the criteria) why your chosen solution (plan A or B) is better.		

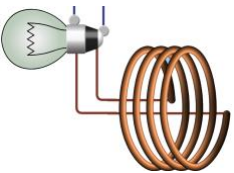
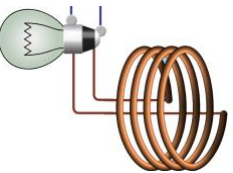
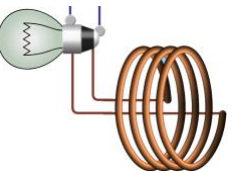
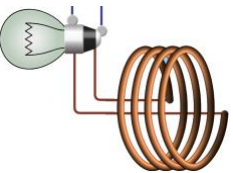
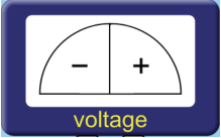
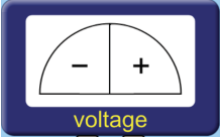
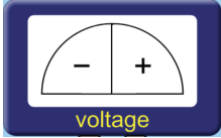
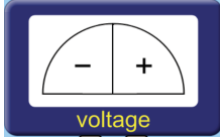
Limitations of Your Plan		
What challenges do you envision in implementing your solution? Have you made any assumptions?	What problems may still remain if your proposed plan is implemented?	What technological breakthroughs might change your plan design? How might it change?

What else do you want to include in your essay?	

Building, Exploring, and Discovering how Electric Motors Work with Pictures

Time (ms)	0	5	10	15
Annotated Real World Picture				
Music/electric Signal from Phone				
Description in Words				
Energy Bar charts	<div>PhoneSpeakerAirCone</div> <div><div></div><div></div><div></div><div></div></div> <div>E Elec.</div>	<div>PhoneSpeakerAirCone</div> <div><div></div><div></div><div></div><div></div></div> <div>E Elec.</div>	<div>PhoneSpeakerAirCone</div> <div><div></div><div></div><div></div><div></div></div> <div>E Elec.</div>	<div>PhoneSpeakerAirCone</div> <div><div></div><div></div><div></div><div></div></div> <div>E Elec.</div>

Building, Exploring, and Discovering how Electric Generators Work with Pictures see <http://bit.ly/PhETFaradaysLaw>

Description	Magnet not moving	Magnet moving toward coil, no detectable electricity yet	Magnet just outside the coil, moving into the coil	Magnet just outside the coil, moving away from coil
Annotated Real World Picture				
Output Electricity				
Description in Words				

Energy Bar charts	<div data-bbox="312 185 409 326"></div> <div data-bbox="443 185 539 326"></div> <div data-bbox="573 185 674 326"></div> <div data-bbox="506 337 531 358">F</div>	<div data-bbox="741 185 837 326"></div> <div data-bbox="871 185 968 326"></div> <div data-bbox="1001 185 1102 326"></div> <div data-bbox="936 337 961 358">F</div>	<div data-bbox="1169 185 1266 326"></div> <div data-bbox="1299 185 1396 326"></div> <div data-bbox="1430 185 1530 326"></div> <div data-bbox="1365 337 1390 358">F</div>	<div data-bbox="1600 185 1696 326"></div> <div data-bbox="1730 185 1827 326"></div> <div data-bbox="1860 185 1961 326"></div> <div data-bbox="1795 337 1820 358">F</div>
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