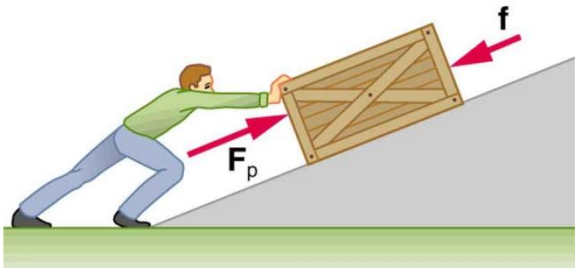
Name: _____ Period: _____ Date Due: _____ ★

Energy, Work and Motion Project
Guidelines and Rubric

FOCUS QUESTIONS:

- ✓ How are energy, work and motion related?
- ✓ How can these relationships be demonstrated?



STANDARDS:

7.1.1 Explain that when energy is transferred from one system to another…
7.1.5 Describe and investigate how forces between objects can act at a distance… or by means of direct contact between objects.
7.1.7 Demonstrate and describe how an object's speed or direction of motion ….
7.4.1 Understand that energy is the capacity to do work.

PROCESS STANDARDS

A2 -Plan and carry out investigations … in small groups or independently… over a period of several class lessons.
A11 - Communicate findings …through oral and written reports.
B1 - Identify a need or problem to be solved.
B2 - Brainstorm potential solutions.
B4 - Select a solution to the need or problem.
B5 - Select the most appropriate materials to develop a solution that will meet the need.
B7 - … evaluate how well the solution meets the goal.
B10 - Communicate the solution including evidence using … drawings or prototypes.

1. The problem you are trying to solve is HOW you can demonstrate your understanding of and the relationships between the following concepts:
   - energy
   - work
   - position
   - reference point
   - motion
   - distance
   - speed
2. Use the DATA SHEET and the provided TEXT to help you research and plan for this. Each person in the group will turn in their own data sheet.
3. You (and your partners) will brainstorm a solution and plan how you can SHOW the relationships.
4. Select appropriate MATERIALS to show the relationships. I have some materials for you to use, such as ramps, pinwheels, scooter boards, measuring tape, etc.

You may also come use your own materials. You may use as many objects as needed. If you use your own materials, you MUST get them APPROVED by me first.

5. Once you have selected materials and how you will show the relationships, write a SCRIPT to explain the relationships in terms of HOW you are SHOWING the relationships. (For example, if one of the materials you are using is a scooter board, describe how it is being used to demonstrate your understanding and the relationship between motion and distance.)
6. The script must follow proper sentence structure, grammar, punctuation, spelling, etc.
7. EVERYONE in the group should work on the script. I recommend you create a document in your Google Drive and SHARE it with your partner/group. This way everyone can have access to see and edit it. The script will be turned in for part of your grade.

8. Once everything above is finalized you will CREATE a 2 to 6 minute video to SHOW and DEMONSTRATE YOUR UNDERSTANDING of the concepts and their relationships. Your script should be your guide. You may choose to create an Educreations or something else. Please check with me FIRST if you use a different method.
9. These will be presented in class. HAVE FUN AND SHOW YOUR CREATIVITY!

NOTE: You will evaluate yourself your own group. You will also evaluate other groups when presenting. You will be able to give constructive feedback to your classmates. I will provide a form for you.

Energy, Work and Motion Project
Rubric

	3	2	1	0
NOTES/ RESEARCH	Notes are turned in and completed well and accurately.	Notes are turned in and are incomplete/ messy; may be partially inaccurate.	Notes are turned in and very incomplete/ messy; many inaccurate parts	No are notes turned in or they are unreadable.
VIDEO SCRIPT LANGUAGE CONVENTIONS: • word spelling • capitalization • punctuation • grammar or word usage • paragraphing • full sentences (no run-on or sentence fragments)	There are few or no errors. None of the errors impact the flow of communication.	Errors are occasional. They do not impede the flow of communication.	Errors are frequent. They may cause the reader to stop and reread part of the writing. Flow of communication is impaired.	Errors are serious and numerous. They cause the reader stop often to figure out writer's meaning.
CONCEPTS – DESCRIPTIONS • energy • work • position • reference point • motion • distance • speed	All 7 concepts are described and shown accurately. (2X)	At least 5 concepts are described and shown accurately. (2X)	At least 3 concepts are described and shown accurately. (2X)	Two or less concepts are described and shown accurately. (2X)
CONCEPTS RELATIONSHIPS	Relationships described and shown in a very creative and meaningful way.	Relationships described and shown.	Relationships are shown in a confusing way.	No relationships shown.
COMMUNICATION	Effectively used materials. Images are clear and easy to understand. Speakers spoke clearly. Was able to keep attention of audience.	Several technical errors in materials, images, and speaking, but still allow audience to understand.	Communication is unclear. Many errors with materials, images, and speaking.	Communication is irrelevant or missing.
			TOTAL SCORE	/18