14.2 **Work and Machines** Honors **Integrated** Science

Name:	Date:	Per
Directions : Answer the following questions in compinformation from the video to support your learning. your final answer should include appropriate units a	plete sentences and thoug . For all math questions, s	ghts, using the
A machine produces a larger force than y the input distance of the machine compar	-	
2. You do 200 J of work pulling the oars of a of work the oars do to move the boat? Ex	-	say about the amount
3. How can you increase the work output of	a machine?	
4. When you swing a baseball bat, how does compare with the distance you move your useful?		

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5.	An advertisement for a new type of wrench claims it reduces the force needed to tighten a bolt. If the advertisement is correct, what do you know to be true about the input distance?
6.	Recall what you learned about forces in Ch. 12. Explain how friction and Newton's third law of motion influence the movement of the oar as it is pulled by the rower.
7.	A machine you designed has input and output arms that pivot around a fulcrum. When the input arm is pushed down through a short distance, the output arm moves down through a longer distance. Is the output force less than, equal to, or greater than the input force. Explain your answer.
8.	Explain why you might shift into a lower gear to climb a hill on a bike. Your explanation should include a discussion of the input force and distance.