



# Motion, Energy, Work & Power Crossword

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## CLUES ACROSS:

1. & 3 across & 5 across: In this simple machine the fulcrum is situated between the effort and the load, e.g. scissors [5, 5, 5]
3. See 1 across
5. See 1 across
8. Speech defect in which 's' is pronounced like 'th' [4]
9. Basically, fundamentally [11]
12. Protective cover, e.g. for a bottle or a camera lens [3]
13. Workshop where art is produced [6]

14. The ratio of useful work/energy output to total energy input. A number always less than 1, but the closer to 1, the better [10]
15.  $F \times S$  where  $F$  = force acting on an object and  $S$  = distance the object moves as a result [4]
17. To be carried by (e.g.) a horse, a vehicle or a wave [4]
19. Vector quantities require this as well as magnitude to fully define them [9]
23. A measure of how much matter is in an object. A fundamental quantity with the kilogram as its SI unit [4]
25. The SI unit for both Work and Energy [5]
26. Spider's network [3]
28. The kind of quantity which does not require a direction [6]
29. Close by [4]
30. The capacity to do work, measured in Joule [6]
31. Greek letter often used in formulae as an irrational number, approximately 3.14 [2]
32. Common house pet [3]
33. SI unit of length [5]
34. Foe [5]
35. Any push, pull, twist or tear [5]
37. Factual, real [6]
39. SI unit of time [6]
42. The kind of quantity that requires a direction to fully define it [6]
43. Rebound [6]
44. Anger [3]
45. SI unit of force [6]
46. & 47 across & 49 across: In this simple machine the effort is situated between the effort and the load, e.g. cricket bat or baseball bat [5, 5, 5]
47. See 46 across
48. See 46 across

### **CLUES DOWN:**

1. This resisting force is always present when surfaces move against each other [8]
2. Fast [5]
4. Boredom [5]
5. Depart [5]
6. The rate of change in an object's position with time. Has a magnitude and a direction so is a vector quantity [8]
7. Large body of water [3]
10. The rate of change in an object's position with time. Like 6 down except that it has a magnitude but no direction so is a scalar quantity [5]
11. & 27 down & 41 down: In this simple machine the load is situated between the effort and the fulcrum, e.g. wheelbarrow [6, 5, 5]
12. Fibre from coconuts used for making ropes and mats [4]

16. SI unit of mass [8]
18. Period in history [3]
20. Come in [5]
21. The rate of change of velocity, in other words the rate at which a moving object is speeding up or slowing down. It's a vector quantity [12]
22. Partakes of recreation [5]
24. The property of matter that causes it to resist changes in velocity [7]
26. SI unit of power, equivalent to one joule per second [4]
27. See 11 down
28. Agitate [4]
31. The rate of doing work [5]
33. Movement [6]
36. Symbol of royalty [5]
38. A thing that happens or takes place, especially one of importance [5]
39. Detectable vibrations that travel through the air [5]
40. To detect water underground by paranormal means (never established as fact) [5]
41. See 11 down
43. The heavy mass at the end of a pendulum or plumb-line [3]

## SOLUTION

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	R		A			S				N			E		E				
L	I	S	P			E	S	S	E	N	T	I	A	L	L	Y		S	
	C		I		C	A	P			U			V		O			E	
S	T	U	D	I	O		E	F	F	I	C	I	E	N	C	Y		C	
	I				I		E								I			O	
W	O	R	K		R	I	D	E		D	I	R	E	C	T	I	O	N	
	N		I				R			I			N		Y			D	
A			L		P		M	A	S	S			T			I			
C		J	O	U	L	E				T		W	E	B		N		O	
C			G		A			S	C	A	L	A	R		N	E	A	R	
E	N	E	R	G	Y			T		N		T				R		D	
L			A		S		P	I		C	A	T		M	E	T	R	E	
E	N	E	M	Y			F	O	R	C	E			O		I		R	
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A		E					S	E	C	O	N	D			I			L	
T		V	E	C	T	O	R		W		O			B	O	U	N	C	E
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O		N				N						S		B					E
N		T	H	I	R	D			O	R	D	E	R		L	E	V	E	R