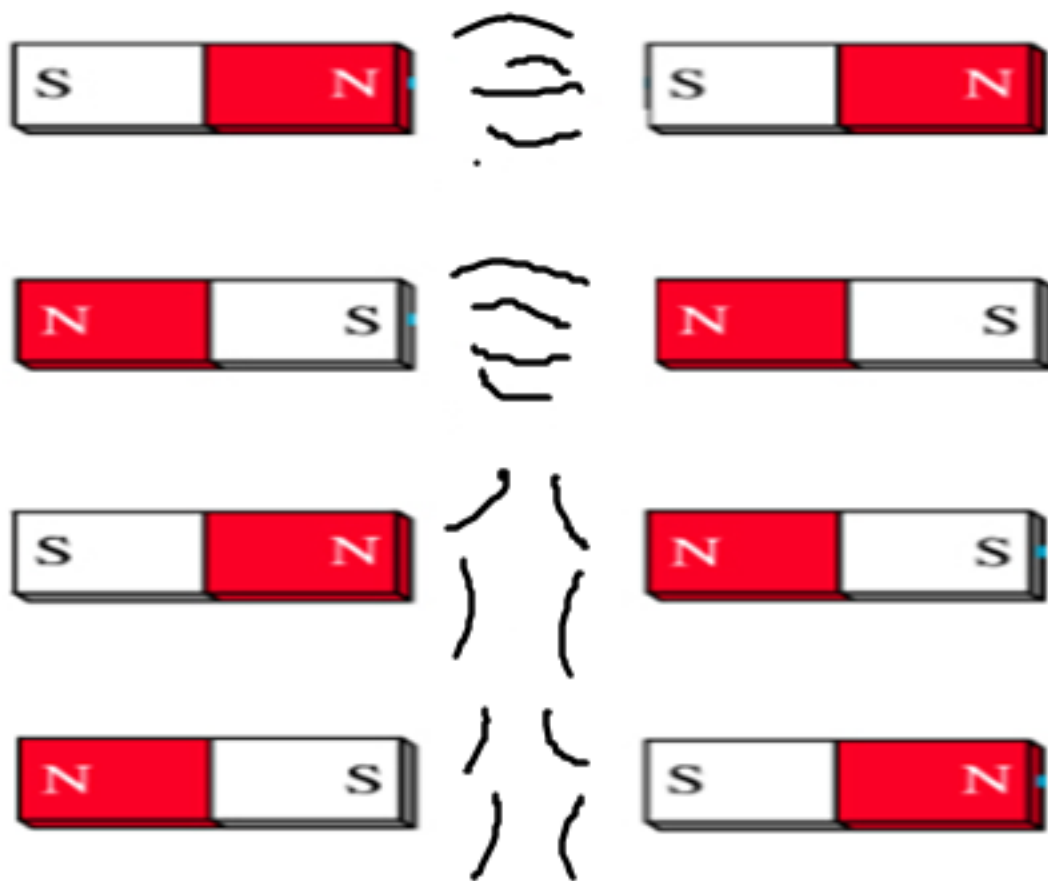


Draw the magnetic field lines around the bar magnet below:



Draw the magnetic field lines that would occur between each set of magnets below:



# Circle the 3 metals that can be used to make a magnet:

hydrogen 1 H 1.0079																	helium 2 He 4.0026				
lithium 3 Li 6.941	beryllium 4 Be 9.0122															boron 5 B 10.811	carbon 6 C 12.011	nitrogen 7 N 14.007	oxygen 8 O 15.999	fluorine 9 F 18.998	neon 10 Ne 20.180
sodium 11 Na 22.990	magnesium 12 Mg 24.305															aluminum 13 Al 26.982	silicon 14 Si 28.086	phosphorus 15 P 30.974	sulfur 16 S 32.065	chlorine 17 Cl 35.453	argon 18 Ar 39.948
potassium 19 K 39.098	calcium 20 Ca 40.078	scandium 21 Sc 44.956	titanium 22 Ti 47.867	vanadium 23 V 50.942	chromium 24 Cr 51.996	manganese 25 Mn 54.938	<b>iron 26 Fe 55.845</b>	<b>cobalt 27 Co 58.933</b>	<b>nickel 28 Ni 58.693</b>	copper 29 Cu 63.546	zinc 30 Zn 65.39	gallium 31 Ga 69.723	germanium 32 Ge 72.61	arsenic 33 As 74.922	selenium 34 Se 78.96	bromine 35 Br 79.904	krypton 36 Kr 83.80				
rubidium 37 Rb 85.468	strontium 38 Sr 87.62	yttrium 39 Y 88.906	zirconium 40 Zr 91.224	niobium 41 Nb 92.906	molybdenum 42 Mo 95.94	technetium 43 Tc 98	ruthenium 44 Ru 101.07	rhodium 45 Rh 102.91	paladium 46 Pd 106.42	silver 47 Ag 107.87	cadmium 48 Cd 112.41	indium 49 In 114.82	tin 50 Sn 118.71	antimony 51 Sb 121.76	tellurium 52 Te 127.60	iodine 53 I 126.90	xenon 54 Xe 131.29				
cesium 55 Cs 132.91	barium 56 Ba 137.33	lanthanum 57-70 * Lu 174.97	hafnium 71 Hf 178.49	tantalum 72 Ta 180.95	tungsten 73 W 183.84	rhenium 74 Re 186.21	osmium 75 Os 190.23	iridium 76 Ir 192.22	platinum 77 Pt 195.08	gold 78 Au 196.97	mercury 79 Hg 200.59	thallium 80 Tl 204.38	lead 81 Pb 207.2	bismuth 82 Bi 208.98	polonium 83 Po 209	astatine 84 At 210	radon 85 Rn 222				
francium 87 Fr 223	radium 88 Ra 226	actinide series 89-102 ** Lr 260	actinide series 103 Rf 261	actinide series 104 Db 262	actinide series 105 Sg 263	actinide series 106 Bh 264	actinide series 107 Hs 265	actinide series 108 Mt 266	actinide series 109 Uun 271	actinide series 110 Uuu 272	actinide series 111 Uub 273	actinide series 112 Uub 273	actinide series 114 Uuq 289								

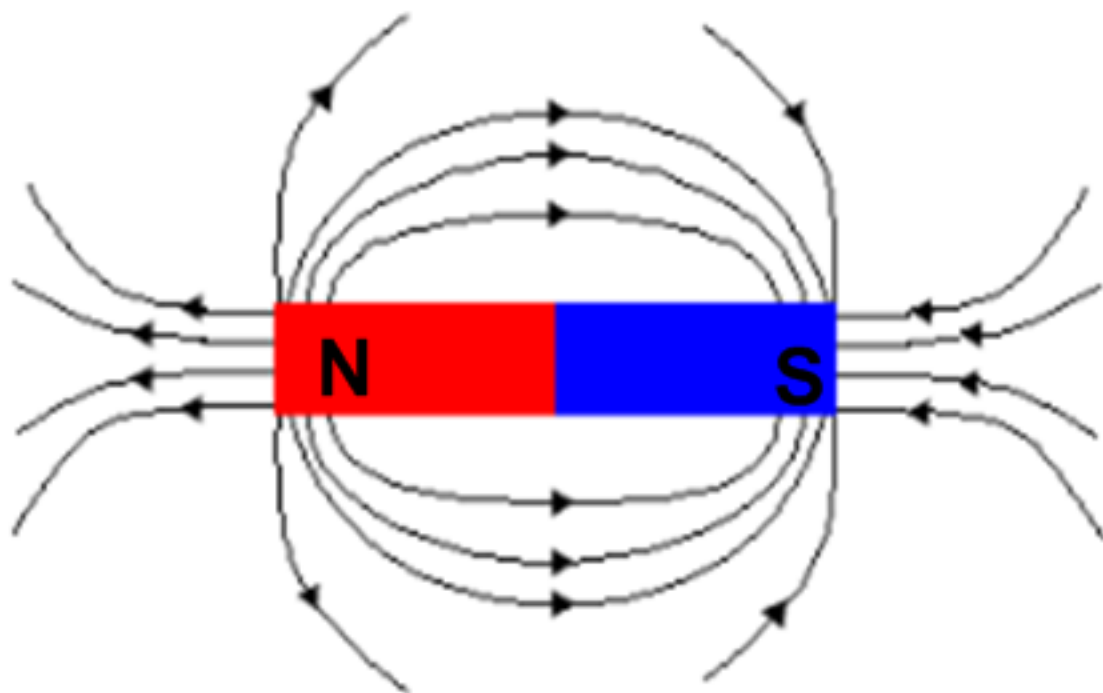
\* Lanthanide series

lanthanum 57 La 138.91	cerium 58 Ce 140.12	praseodymium 59 Pr 140.91	neodymium 60 Nd 144.24	promethium 61 Pm [145]	samarium 62 Sm 150.36	europium 63 Eu 151.96	gadolinium 64 Gd 157.25	terbium 65 Tb 158.93	dysprosium 66 Dy 162.50	holmium 67 Ho 164.93	erbium 68 Er 167.26	thulium 69 Tm 168.93	ytterbium 70 Yb 173.04
actinium 89 Ac [227]	thorium 90 Th 232.04	protactinium 91 Pa 231.04	uranium 92 U 238.03	neptunium 93 Np [237]	plutonium 94 Pu [244]	americium 95 Am [243]	curium 96 Cm [247]	berkelium 97 Bk [247]	californium 98 Cf [251]	einsteinium 99 Es [252]	fermium 100 Fm [257]	mendelevium 101 Md [258]	nobelium 102 No [259]

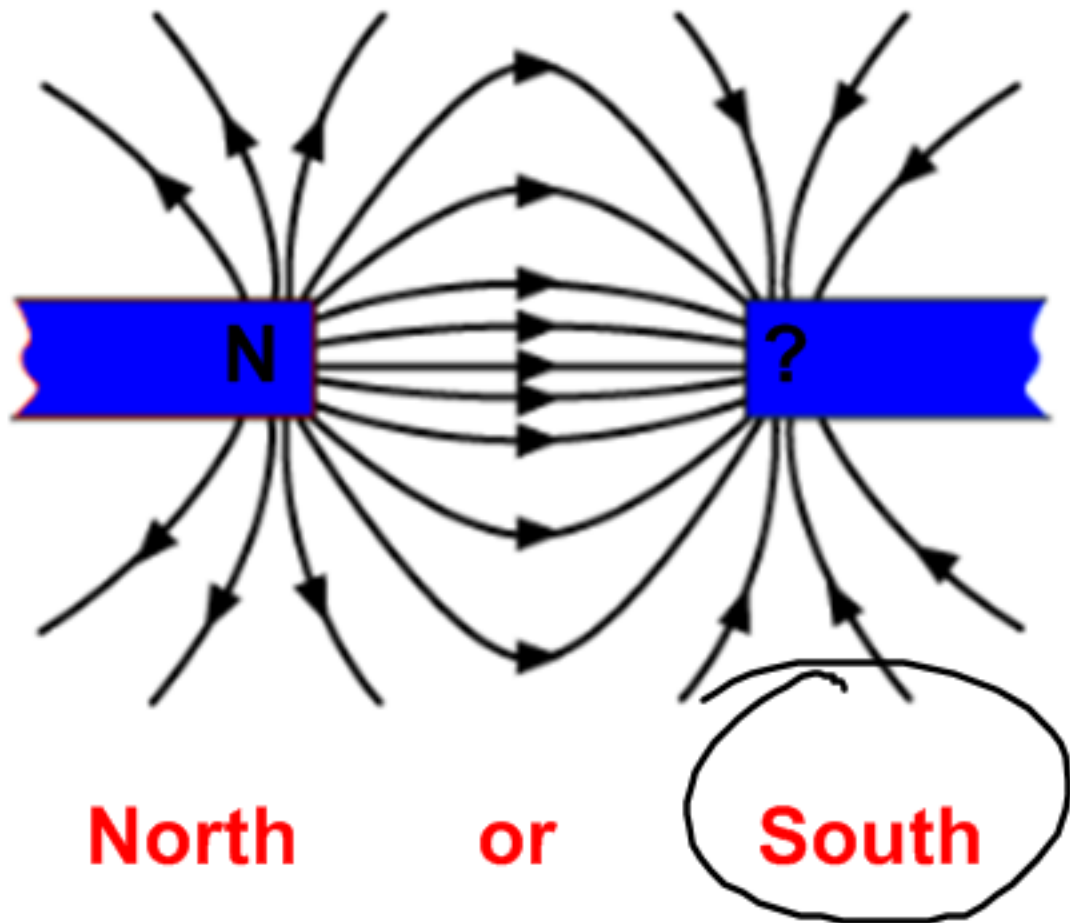
\*\* Actinide series

Magnetic Field lines always  
move out of the  
north pole and  
into the south  
pole of a magnet.

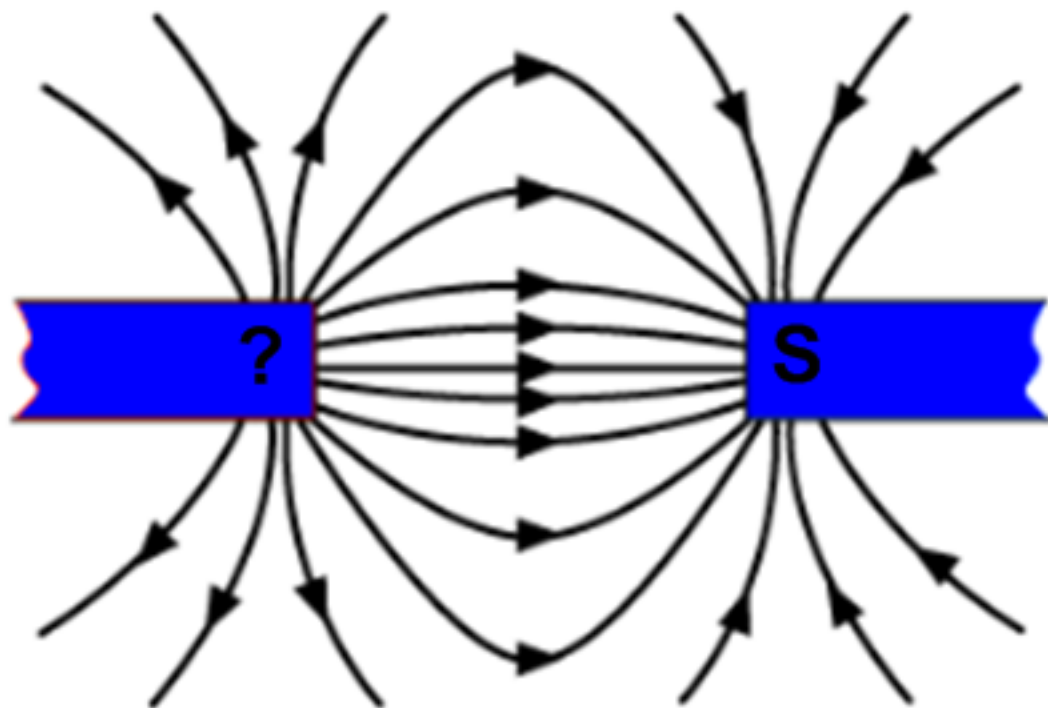
Identify the North and South poles of the magnet below:  
(Drag the Letters to the proper place)



## Identify the Unknown Pole:



**Identify the Unknown Pole:**

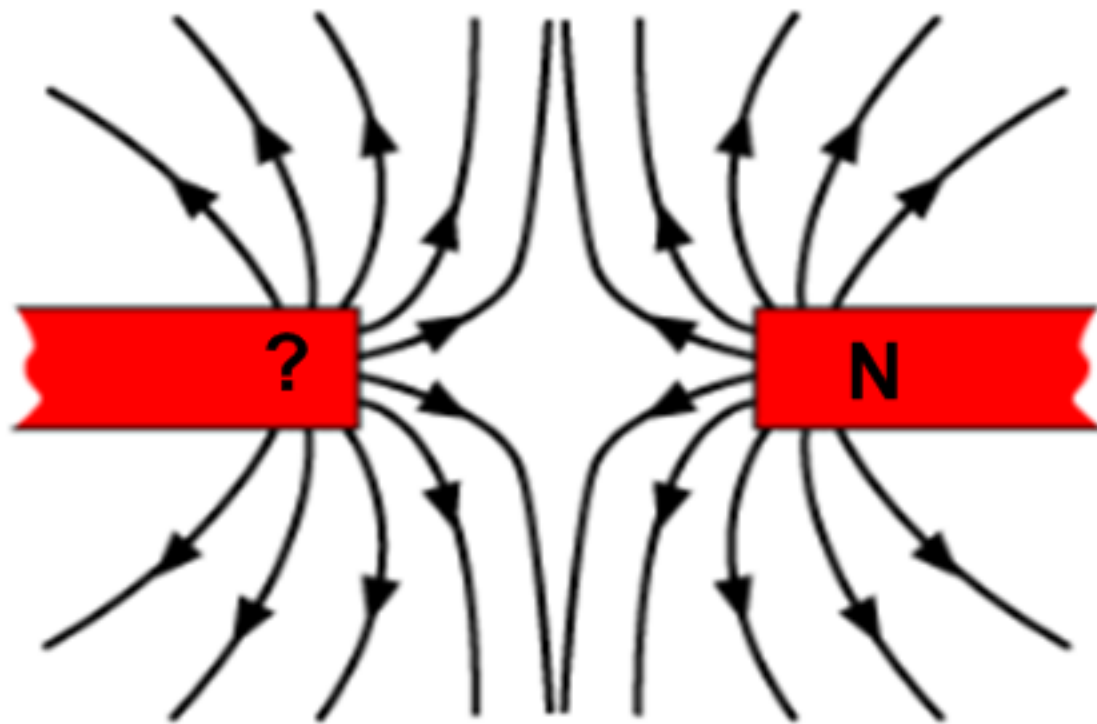


**North**

**or**

**South**

# Identify the Unknown Pole:



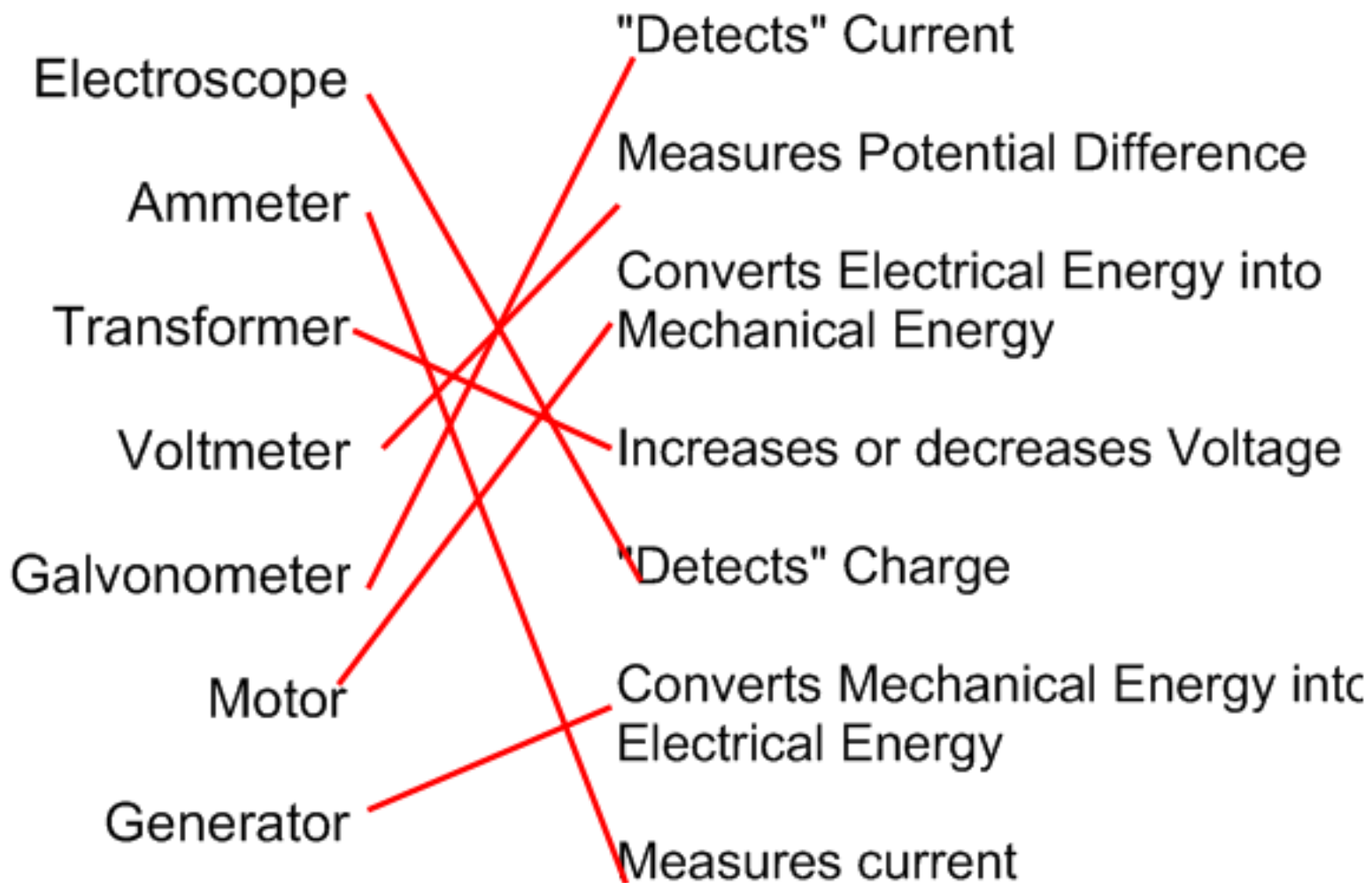
North

or

South



Match the following Devices with their application:



Oersted discovered that moving a Current through a wire produced a magnetic field around the wire.

Faraday and Henry discovered that moving a wire through a Magnetic Field or moving a magnetic field through a coil of wire produced a Current on the wire!!

Motors use  
electromagnets to convert  
electrical energy to mechanical energy.

generators use  
electromagnets to convert  
mechanical energy to electrical energy .

There are 2 types of transformers:  
step-up transformers increase the  
voltage and step-down  
transformers decrease the voltage.

In a step-up transformer, there are more  
turns of wire in the secondary coil  
than in the primary coil.

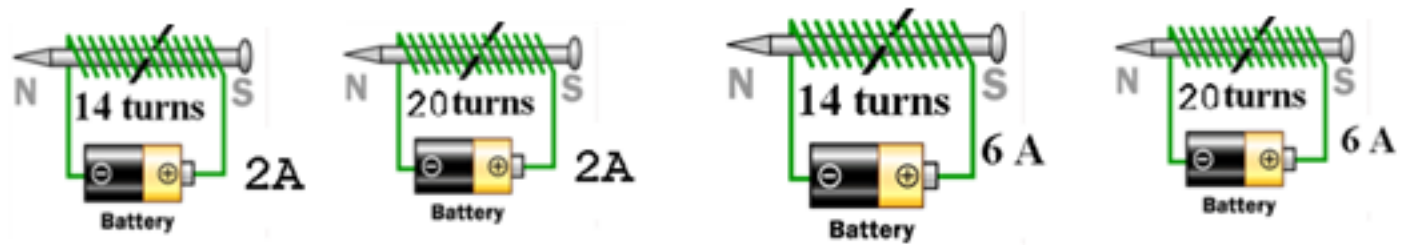
In a step-down transformer, there are  
more turns of wire in the primary  
coil than in the secondary coil.

transformers are used to increase or decrease the voltage of alternating currents.

Each consists of 2 turns of wire:

The primary coil is the coil the current enters and the secondary coil is the coil the current leaves.

Place the Electromagnets below in order of strength(from weakest to strongest):



Weakest



strongest

A student coiled wire around a nail, attached both ends to a 1.5-V battery, and attempted to lift paper clips with the nail.

### Results

Number of Turns of Wire	Paper Clips Picked Up
10	2
20	4
30	10
40	20

What is a valid conclusion for this investigation?

- A Increasing voltage increases electromagnetic strength.
- B Increasing the number of turns of wire decreases electromagnetic strength.
- C** Increasing the number of turns of wire increases electromagnetic strength.
- D Increasing the number of turns of wire has no effect on electromagnetic strength.

A student performed an experiment to determine the number of paper clips that are attracted to an electromagnet as the amount of current changes.

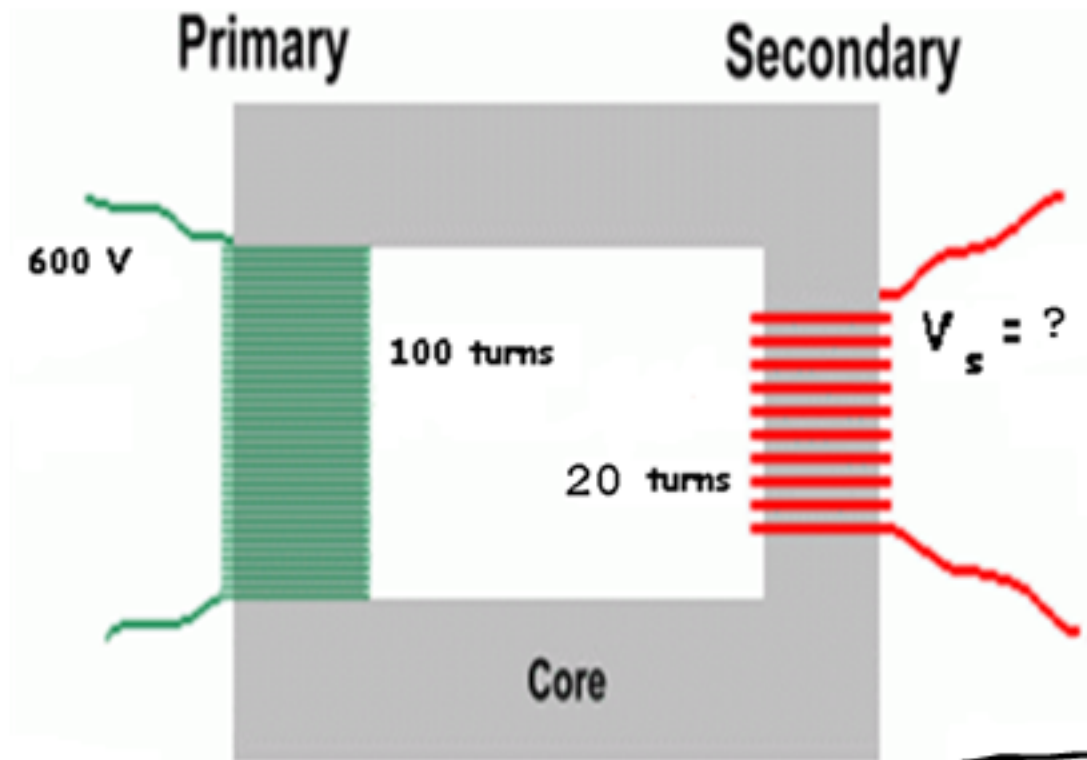
**Data Table**

<b>Current</b>	<b>Number of Paper Clips</b>
5 A	20
10 A	40
15 A	60
20 A	80

What is a valid conclusion for this investigation?

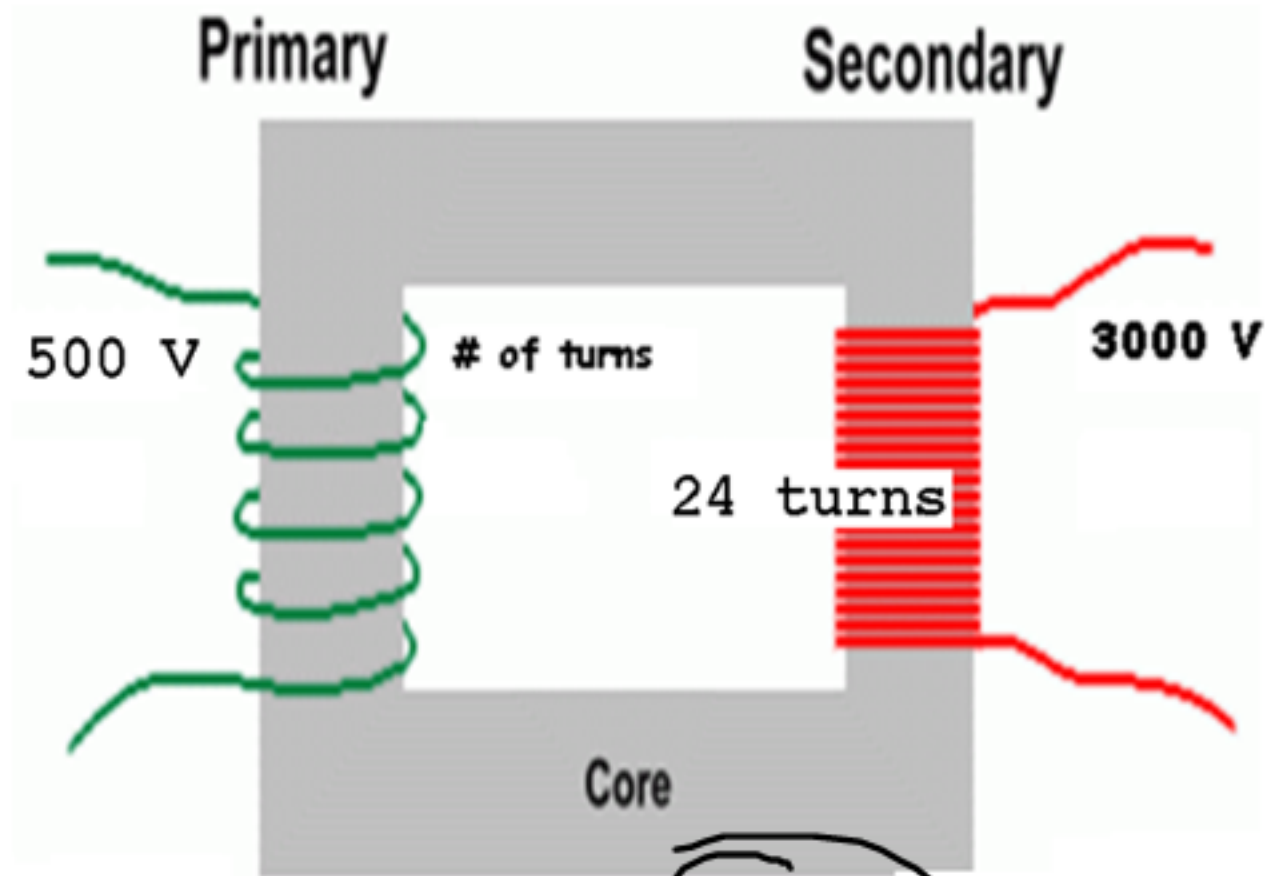
- a) Increasing current decreases magnetic field strength.
- b) Increasing current increases magnetic field strength.
- c) Increasing the turns of wire increases magnetic field strength.
- d) Increasing the turns of wire decreases the magnetic field strength.



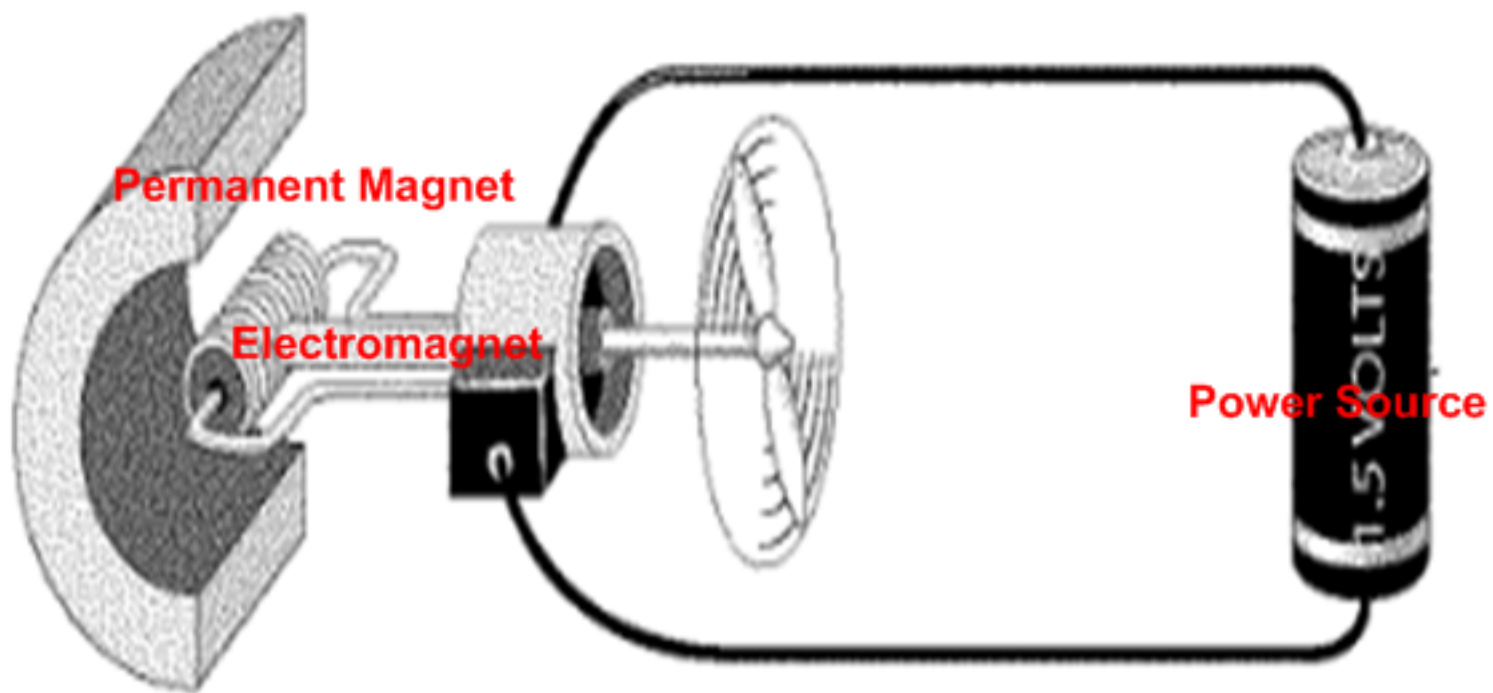


What type of transformer is shown above? Step up or

Step down



What type of transformer is shown above?  Step up  or  Step down



Review will can be downloaded from  
[www.albphysicalscience.weebly.com](http://www.albphysicalscience.weebly.com).  
Click on Magnetism Test Review tab  
and follow instructions!!!!

- P. 230 1-6
- P. 237 1-5
- P. 244 1-6
- \*p. 250 1- 14