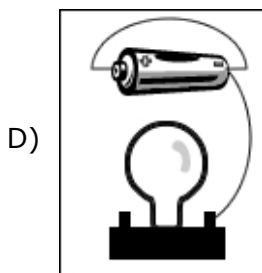
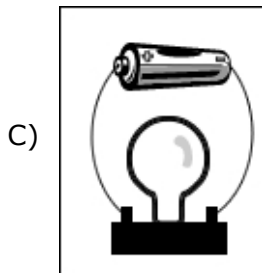
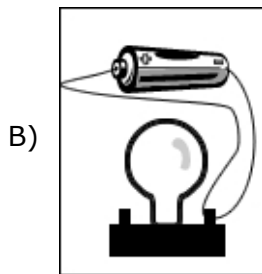
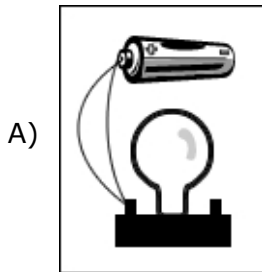


## Electricity and Magnetism (Demo Version)

Read each question carefully.

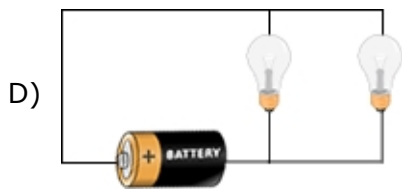
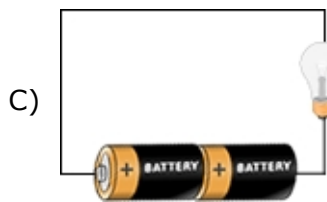
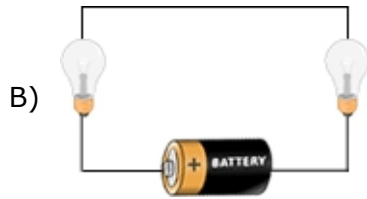
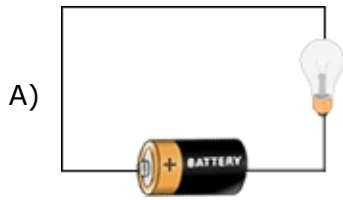
- 1) The pictures show different arrangements of a battery, a light bulb, and a piece of copper wire.

Which arrangement will light the bulb?



## Electricity and Magnetism (Demo Version)

2) In which of the following circuits will the bulb(s) most likely shine brightest?



## Electricity and Magnetism (Demo Version)

3) The picture below shows a drill that is plugged into an outlet.

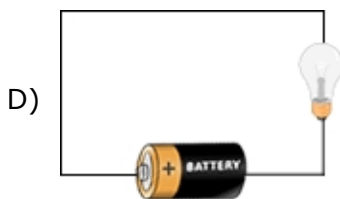
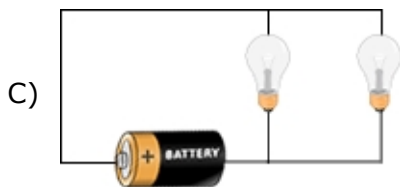
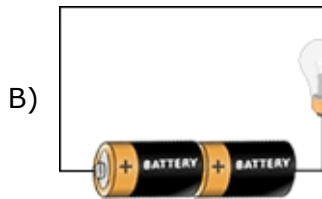
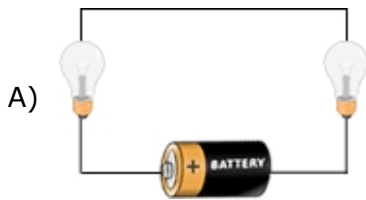
Why does the drill turn on when the trigger is pulled?



- A) The trigger turns the drill into an electromagnet.
  - B) The trigger is a switch that closes the circuit.
  - C) The trigger causes the drill to produce electricity.
  - D) The trigger sends a signal to the outlet.
-

## Electricity and Magnetism (Demo Version)

4) Which of the following is a parallel circuit?





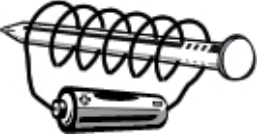

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5) Which of the following best describes the relationship between magnetism and electricity?

- A) When a circuit is closed, it repels any magnets that are placed nearby.
  - B) When magnets are rubbed against a wire, electricity begins flowing through the wire.
  - C) When wire is wrapped around a magnet, electricity stops flowing through the wire.
  - D) When an electric current flows through a wire, a magnetic field forms around the wire.
-

## Electricity and Magnetism (Demo Version)

6) Which of the following converts electrical energy into magnetic effects?

- A) 
- B) 
- C) 
- D) 
- 

7) When one plugs in an electrical cord, they do not get an electric shock.

Which statement best explains why?

- A) The rubber around the electrical wires is a good conductor of electricity.
- B) The rubber around the electrical wires changes the direction of the electric current.
- C) The rubber around the electrical wires does not conduct electricity well.
- D) The rubber around the electrical wires changes the charge of the electric current.
-

## Electricity and Magnetism (Demo Version)

8) Which best explains the purpose of metal burners on a stove?

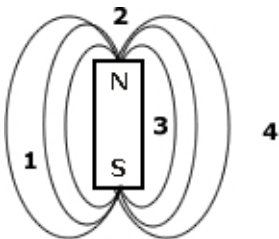


- A) They conduct heat.
- B) They are easy to clean.
- C) They make food taste better.
- D) They do not use energy to cook food.

---

9) The picture below shows a bar magnet's magnetic field.

At which point is the magnetic field strongest?



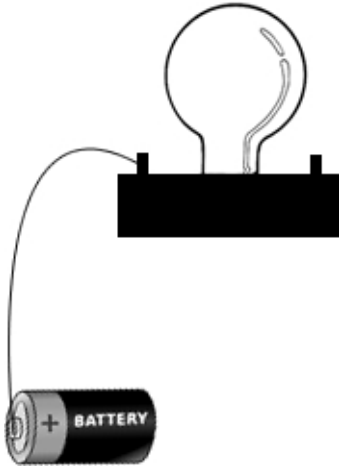
- A) 1
- B) 2
- C) 3
- D) 4

## Electricity and Magnetism (Demo Version)

- 10) The diagram shows an incomplete circuit that includes a light bulb, copper wire, and a battery. The light bulb will not light unless the circuit is completed.

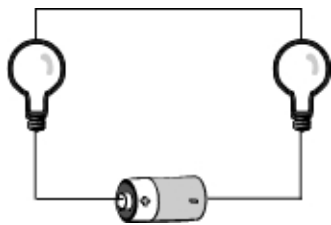
Complete the following:

- Identify what material is needed to complete the circuit.
- Explain how that material should be used to complete the circuit.



- 11) The picture below shows a circuit.

What will happen if another light bulb is added to this circuit?

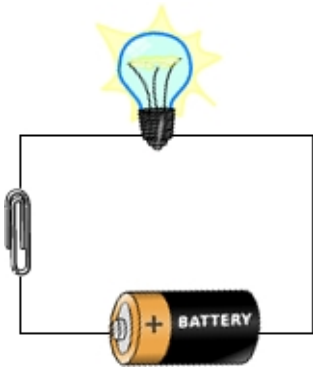


- The first two bulbs will burn out.
- The first two bulbs will dim.
- The first two bulbs will become brighter.
- The first two bulbs will not change.

## Electricity and Magnetism (Demo Version)

12) The graphic below shows electricity flowing through a circuit to light a bulb.

Which of the following best describes the paperclip?



- A) The paperclip is a conductor.
  - B) The paperclip is a battery.
  - C) The paperclip is an insulator.
  - D) The paperclip is a magnet.
- 

13) The picture below shows two magnets.

What will happen as the two magnets are pushed toward each other?



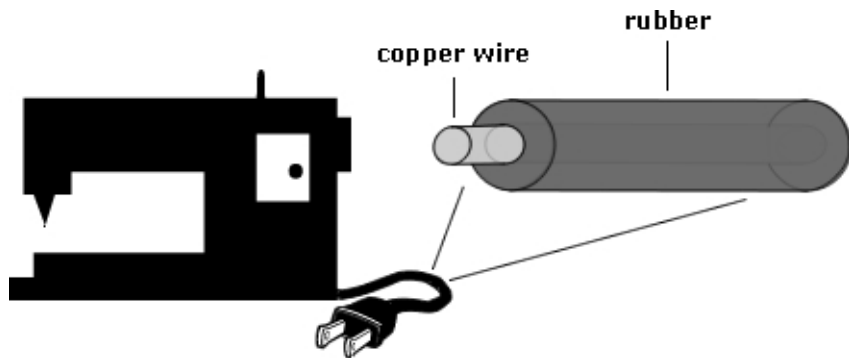
- A) The magnets will give off light.
  - B) The magnets will repel each other.
  - C) The magnets will produce electricity.
  - D) The magnets will revolve around each other.
-



## Electricity and Magnetism (Demo Version)

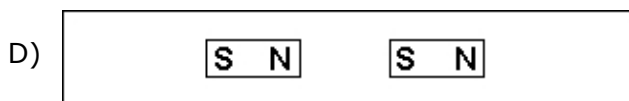
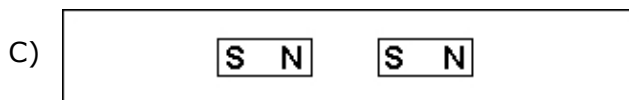
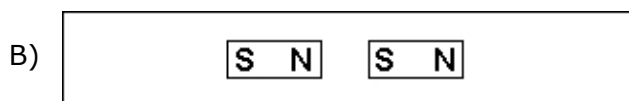
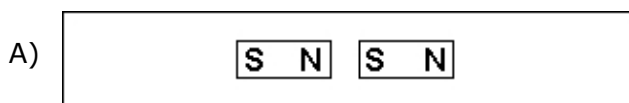
14) The picture below shows the parts of a sewing machine power cord.

Which statement is true?



- A) The copper wire conducts the electric current that flows through the rubber.
  - B) The copper wire insulates the electric current that flows through the rubber.
  - C) The rubber conducts the electric current that flows through the copper wire.
  - D) The rubber insulates the electric current that flows through the copper wire.
- 

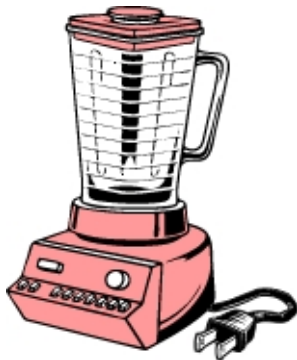
15) Which arrangement will lead to the strongest attraction between the magnets?



## Electricity and Magnetism (Demo Version)

16) The graphic below shows a blender.

Which of the following best describes the rubber in the electrical cord?



- A) It is a switch.
  - B) It is a battery.
  - C) It is an insulator.
  - D) It is a conductor.
- 

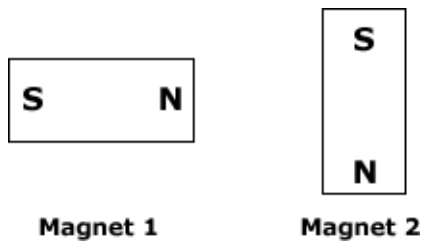
17) Which statement is true?

- A) If electricity is conducted through a magnet, the magnet will turn a coil of copper wire.
  - B) Turning magnets inside a coil of copper wire causes an electrical current to change directions.
  - C) Conducting electricity through a circuit will turn anything connected to the circuit into a magnet.
  - D) Spinning a piece of copper between magnets will cause electricity to flow into an attached copper wire.
-

## Electricity and Magnetism (Demo Version)

18) The picture below shows two magnets.

What will happen as Magnet 1 is pushed toward Magnet 2?



- A) Magnet 2 will begin to spin and move in the opposite direction of Magnet 1.
  - B) Magnet 2 will change its poles so that the N pole is on the top and the S pole is on the bottom.
  - C) Magnet 2 will rotate clockwise so that its N pole lines up with the N pole on Magnet 1.
  - D) Magnet 2 will rotate counterclockwise so that its S pole lines up with the N pole on Magnet 1.
- 

19) Imagine a circuit has one battery and one bulb.

Why might the bulb become very bright and then burn out if two more batteries are added to the circuit?

- A) because the three batteries cancelled each other out
  - B) because the two extra batteries caused the first battery to die
  - C) because the most batteries any circuit can contain is one
  - D) because the extra batteries sent too much electricity into the bulb
-

## Electricity and Magnetism (Demo Version)

20) Which of the following best explains the purpose of a plastic handle on a metal pan?

- A) Plastic handles help the pan heat up quickly.
  - B) Plastic handles make the pan lighter.
  - C) Plastic handles control how fast the food cooks.
  - D) Plastic handles insulate hands from hot metal.
- 

21) Which statement is true?

- A) Motion is required for magnetism to produce electricity.
  - B) Water is required for magnetism to produce electricity.
  - C) Friction is required for electricity to produce magnetism.
  - D) Iron is required for electricity to produce magnetism.
- 

22) Why does a bulb light turn on when one closes the switch in a circuit?

- A) because closing the switch hooks up the battery
  - B) because closing the switch completes the circuit
  - C) because closing the switch produces electricity
  - D) because closing the switch magnetizes the circuit
-

## Electricity and Magnetism (Demo Version)

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23) Which statement is true?

- A) Copper is the best insulator for electricity.
  - B) Electric currents make magnetic fields.
  - C) Two magnets produce electricity when they repel each other.
  - D) Copper wire turns off the magnetic field between two magnets.
- 

24) How does an electromagnet work in an electric motor?

- A) Electricity creates magnetic fields that turn a rotor.
  - B) Magnets create electricity by rubbing against each other.
  - C) The motor powers the battery that produces electricity.
  - D) Batteries produce electricity by being attracted to the magnets.
- 

25) Which statement best describes an insulator?

- A) a material that releases heat
  - B) a material that captures heat
  - C) a material that stops the flow of heat
  - D) a material that makes heat move faster
-

## Electricity and Magnetism (Demo Version)

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26) Which of the following is the best conductor of electricity?

- A) string
  - B) copper
  - C) wood
  - D) glass
- 

27) Which turns electrical energy into light energy?

- A) grandfather clock
  - B) popcorn popper
  - C) computer monitor
  - D) microphone
- 

28) Which best explains the purpose of metal inside an electric power cord?

- A) It acts as a switch.
  - B) It conducts current.
  - C) It produces electricity.
  - D) It heats the power cord.
-

## Electricity and Magnetism (Demo Version)

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29) Which statement is true?

- A) A bar magnet's field is strongest near the center of the magnet.
  - B) A magnet's north pole will be attracted to another magnet's south pole.
  - C) Magnetic fields have no effect on electrical currents.
  - D) Magnets need light or heat in order to attract other magnets.
- 

30) Which results when electricity flows through a wire?

- A) air pressure
  - B) cold water
  - C) vapor clouds
  - D) magnetic fields
- 

31) Which of the following converts electrical energy into sound?

- A) piano
  - B) drum
  - C) doorbell
  - D) lamp
-

## Electricity and Magnetism (Demo Version)

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32) Which turns electrical energy into thermal energy?

- A) stove
  - B) fork
  - C) faucet
  - D) tape
- 

33) Which turns electrical energy into mechanical energy?

- A) sink
  - B) cabinet
  - C) refrigerator
  - D) dishwasher
- 

34) Which of the following will produce magnetic effects?

- A) heat energy
  - B) electric current
  - C) boiling water
  - D) solar eclipse
-



## Electricity and Magnetism (Demo Version)

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35) Which of the following has the greatest effect on the force between two magnets?

- A) the amount of time the magnets are near each other
  - B) the color difference between the magnets
  - C) the amount of light shining on the magnets
  - D) the position of the magnets' poles
- 

36) Which results when electricity flows through a wire?

- A) heat
  - B) water
  - C) atoms
  - D) molecules
- 

37) Which of the following will produce heat?

- A) sound
  - B) thermometer
  - C) electricity
  - D) gravity
-