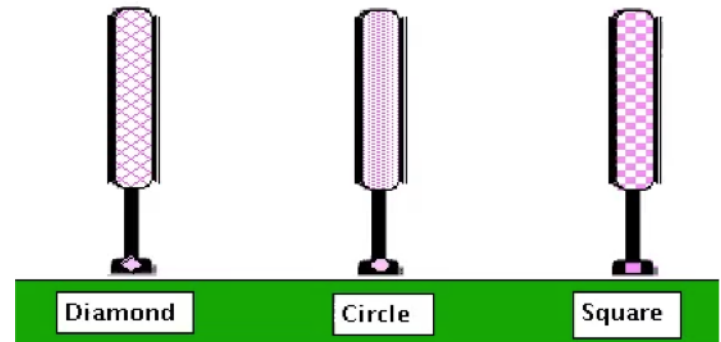


Quiz Question 1

- 1) In the extension activity, you constructed a simple triboelectric series for the three materials in the simulation (diamond, circle and square). According to the simulation evidence, which one of the choices below is the correct order for how they should be placed in this series? A '1' is for the material most likely to be positively (+) charged, a '2' is equally likely to be either positively (+) or negatively (–) charged, and a '3' is most likely to be negatively (–) charged.



- A) (1) Square; (2) Diamond; (3) Circle.
- B) (1) Square; (2) Circle; (3) Diamond.
- C) (1) Diamond; (2) Square; (3) Circle.
- D) (1) Diamond; (2) Circle; (3) Square.
- E) (1) Circle; (2) Diamond; (3) Square.
- F) (1) Circle; (2) Square; (3) Diamond.

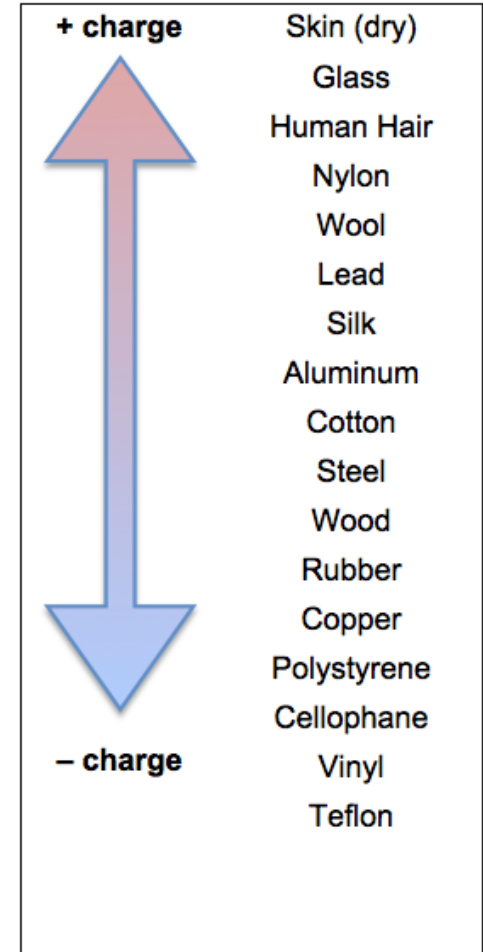
Feedback: Choice B is correct. If you're not sure, review the evidence provided by the simulation movie.

Quiz Question 2

According to the triboelectric series shown here, what would happen if Vinyl were rubbed on Teflon?

- A. Both the Vinyl and the Teflon would become negatively (–) charged.
- B. The Vinyl would become positively (+) charged and the Teflon would become negatively (–) charged.
- C. The Teflon would become positively (+) charged and the Vinyl would become negatively (–) charged.
- D. Both the Vinyl and the Teflon would become positively (+) charged.

Feedback: Choice B is correct. Because Vinyl is located above Teflon in the triboelectric series, it will become positively charged when rubbed on Teflon, and the Teflon will become negatively charged.

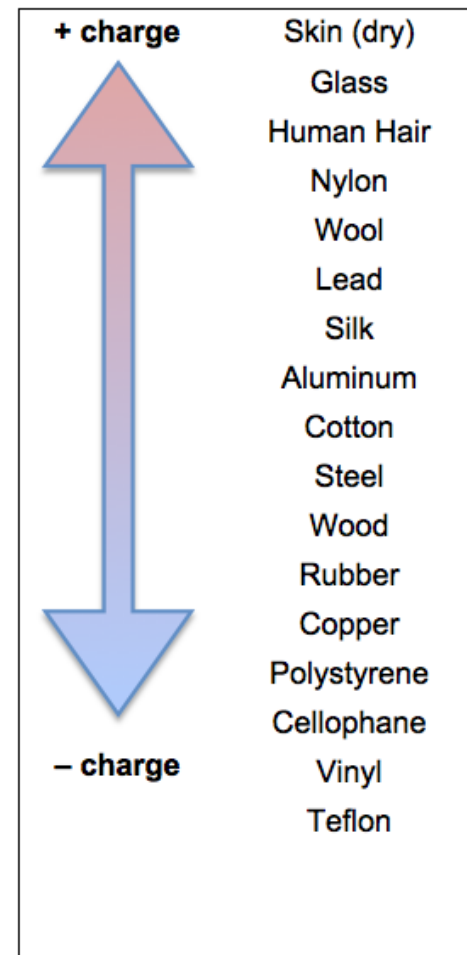


Quiz Question 3

Earlier in the unit you determined that when an acrylic sheet is rubbed with a Styrofoam plate (which is a trade name for a particular form of **polystyrene**), the acrylic becomes positively (+) charged and the Styrofoam becomes negatively (–) charged. From this information where should acrylic be placed in the triboelectric series shown here?

- A. Somewhere above polystyrene
- B. Somewhere below polystyrene
- C. It is impossible to say with this information.

Feedback: Choice A is correct. Since acrylic becomes positively charged when rubbed with polystyrene (Styrofoam), it should be placed above polystyrene in the triboelectric series.



Quiz Question 4

You have probably experienced the phenomenon of 'static cling', particularly when taking your laundry out of the dryer. A student dries three separate loads of laundry as described in the choices below. For which load (if any) is she most likely to notice a large amount of 'static cling'?

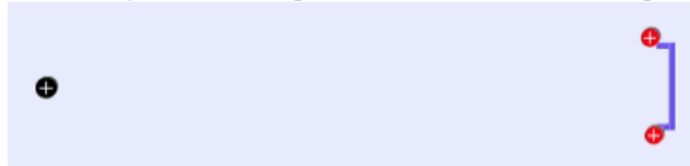
- A. A load consisting of only cotton materials.
- B. A load consisting of a mixture of cotton and nylon materials.
- C. A load consisting of only nylon materials.
- D. All of these loads (A, B, and C) will produce a large amount of 'static cling'.

Feedback: Choice B is correct. Static cling in laundry loads occurs when items in a laundry load are rubbed against one another and acquire a charge. However, when items made of the same material (e.g., cotton) are rubbed against one another, they do not acquire a charge. Only by rubbing items made of different materials, such as nylon clothes and cotton clothes, against each other can the items acquire a static charge.

Quiz Question 1

- 1) Below are images and descriptions of three different arrangements of charges from the 'Electric Field Hockey' simulation. Which one of these would result in a goal being scored when the positively-charged puck is released?

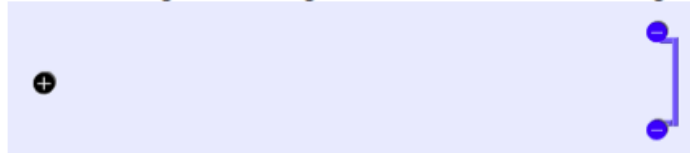
Arrangement A. A positive charge beside each side of the goal.



Arrangement B. A positive charge at one side of the goal and a negative charge at the other side. Both are the same distance from the puck.



Arrangement C. A negative charge beside each side of the goal.



Feedback: Arrangement C is the only arrangement that works to score a goal.

Quiz Question 2

The arrangement below from the 'Electric Field Hockey' simulator shows a negatively ($-$) charged puck in front of the goal. Directly behind the goal is a line of three charges ($-$, $+$, $-$), with a second $+$ charge directly behind the first.



How would the negatively-charged puck behave when it is released, and why?

- A. It would be attracted toward the goal because the $+$ charges are both in the middle of the arrangement.
- B. It would not move toward or away from the goal because there are equal numbers of $+$ and $-$ charges behind the goal.
- C. It would be repelled away from the goal because taken together, the two negative charges are nearer to it than the two positive charges.

Feedback: Choice C is correct.

Quiz Question 3

When you bring a small object close to a charged tape you find that there is an attraction between them. Considering all the evidence you saw in early in this unit, what can you conclude about the charge of the small object?

- A. It has the same charge as the tape.
- B. It is uncharged.
- C. It has the opposite charge to the tape.
- D. Either B or C could be true.

Feedback: Choice D is correct. A charged tape attracts both uncharged objects and objects that have a charge opposite to the tape's.