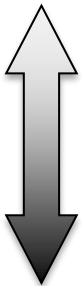


Charging By Friction

Name _____ **KEY**

Some materials tend to accumulate extra electrons on their surfaces; others tend to lose electrons from their surfaces. When two different materials are rubbed together, electrons are usually transferred from one to the other. The list below shows which direction electrons will be transferred between various materials.

1. For the scenarios in the table below, identify which materials lose and which gain electrons.

Rabbit's fur	<ul style="list-style-type: none"> • GIVES UP ELECTRONS • BECOMES POSITIVE  <ul style="list-style-type: none"> • GAINS ELECTRONS • BECOMES NEGATIVE
Glass	
Nylon	
Wool	
Cat's fur	
Silk	
Your skin, hair	
Cotton	
Paper	
Amber	
Styrofoam	
Rubber	
Hard Plastic	
Plastic wrap	

ACTION	RESULT: Electrons transfer from to	
Comb hair with rubber comb	hair	comb
Pet a cat with your hand	cat	hand
Slide bare feet on a nylon carpet	carpet	foot
Dust plastic furniture surface with a cotton cloth	cotton	plastic

- Circle the items above that will be positive (+) after rubbing and box the items that will be negative (-) after rubbing.
- Explain why your hair may rise towards a comb or brush after you have run it through your hair several times.

Electrons have been transferred from your hair to the hard plastic comb. Positively charged hair is then attracted to the negatively charged comb.

- A Styrofoam cup could be given a net negative charge by rubbing it with rabbit's fur through amber

It could be rubbed with rubber, hard plastic, or plastic wrap to give it a net positive charge.

- The materials on this list ARE **ARE NOT** good electrical conductors. (circle one)