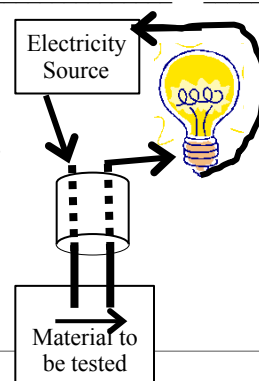


Introduction

As you know, electricity is electrons on the move. We will test the ability of various solid materials to conduct electricity to determine if they are conductors or insulators. We will use electrical conductivity to give us insight to the atomic structure of the solid substance. Then we will test the conductivity of various liquids and solutions to give us insight to the structure of those liquids and solutions at the nanoscopic level. We will define an electrolyte at the bottom.

Procedure

We will use a conductivity tester that is similar to the schematic diagram drawn to the right. The two probes will be touched to the material in question to determine if the electricity can flow through the material. Then we will develop a model for what allows electricity to be conducted.



	Material	Conduct or not?	Electrolyte?	Explanation
1	Metal			
2	Wood			
3	Plastic			
4	Graphite			
5	Glass			
6	Air			
7	Solid water - Ice			
8	Liquid water			
9	Solid salt			
10	Melted salt			
11	Dissolved salt			
12	Melted sugar			
13	Solid sugar			
14	Dissolved sugar			
15	Alcohol			
16	Salt in alcohol			
17	strong acid, 1 M HCl			
18	strong acid, 0.01 M HCl			
19	weak acid 0.85 M HC ₂ H ₃ O ₂			

Definition of an electrolyte: