Name: _____ 42

What would you insulate your home with?

<u>Test</u>: Use your assigned material to test its insulation/conductivity

1. Collect your materials: bag, film canister, and the material your table is assigned. Each table is testing only 1 material.

2. Fill the bag with your material, leaving enough space to slide the film canister in the center.

3. Obtain the mass of your film canister. _____g ***Mass of empty Film Canister***

3. Get an ice cube from your teacher and place it in your film canister. Obtain the **initial mass** of your ice cube by subtracting the mass of the film canister from the total. Place the film canister with the ice cube in the center of the bag. Record in the data table. ***Initial mass= (ice cube+film canister) – (film canister)*** _____g ****Initial Mass of Ice Cube***

4. Place bag outside in the sun for 20 min. Remember to time!

5. Bring your bag inside, pour the melted ice (water) down the sink and obtain the mass of your film canister and ice (what didn't melt). Record in the data table. ***Final mass= (initial mass) – (un-melted ice+film canister)***

_____g ****Final Mass of un-melted Ice***

6. Clean up and return to class where you will fill in the class data and graph.

<u>Data</u>:

Table	1	2	3	4	5	6	7	8	9
Material	Cotton Balls	Styrofoam	Cotton Batting	Fiberglass Insulation (wear gloves)	Shredded paper	Tissue Paper	Popcorn	Aluminum Foil	Fleece
Initial Mass of ice									
Final Mass of ice									
Change in Mass of ice									

<u>Graph</u>: Construct a bar graph to show your class data.

Change in mass (g)

Cotton Balls	Styrofoam	Cotton Batting	Fiberglass Insulation	Shredded Paper	Tissue Paper	Popcorn	Aluminum Foil	Fleece

Notes- Heat Transfer

Heat Transfer	The _____ of thermal energy from a _____ to _____ substance. There are 3 types of heat transfer:
1. Conduction	The transfer of heat through _____ _____. _____ conduct heat well. Examples of Conduction: _____
2. Convection	The transfer of heat through a _____ or _____in a _____. Examples of Convection: _____
3. Radiation	The transfer of heat _____ direct contact (radiation can travel through _____ or a vacuum). Examples of Radiations: _____
Insulator	An insulator is any material that _____ the _____of heat.
Conductor	A material through which electric _____ _____ pass. List examples of conductors: _____ List examples of insulators: _____