DR. CHRISTOPHER'S

THERMAL ENERGY LAB WORKSHEET

Name: Date:

Record Your Data

Chilly Balloons

	Before	After
Circumference		

Describe Your Observations

Did the Circumference go up or down?

More Information

It should go down because even though the same amount of air is in the balloon now as there was when you first blew it up, the air got colder. The air particles moved closer together as the air got colder. Most things shrink as they get cold and expand as they get warm. This is one of the reasons that streets in Michigan crack and get potholes in the winter. The particles move closer and closer together and eventually a crack forms.

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Particles on the Move Experiment

	Hot Water Cup	Cold Water Cup
Start		
1 minute		
2 minutes		
3 minutes		
4 minutes		
5 minutes		
6 minutes		
7 minutes		
8 minutes		
9 minutes		
10 minutes		

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Describe Your Observations
What did you notice?

What was the difference between the particle movement in the hot and cold cups?

More Information
Since food coloring was added you can see how much faster particles moved in the hot cup than the cold cup. Thermal or heat energy causes particles to move and expand, whereas cold or the absence of heat energy reduces particle movement, and in the case of the cold balloon, gas particles even move closer together.

Share your findings with me
in the comments on Youtube!