



THIS IS AN EXAMPLE OF A LESSON PLAN USING JUSTIN.TV THAT COULD BE USED TO TEACH A 9TH GRADE CLASS

SCIENCE: SNOWFLAKE CREATION

Overview	Students will supersaturate water with alum, borax or sugar and then suspend a pipe cleaner "snowflake" into it as a framework for crystals to develop.
Objective	Students will create a snowflake with real crystals on it to hang as a Christmas decoration
Learning environment	<ul style="list-style-type: none">• Classroom with a large projection screen.• Computer with a high speed internet connection.• Appropriate tables and benches for the experiment.
ISTE/NETS Standards	1. Facilitate and Inspire Student Learning and Creativity
Materials	<ul style="list-style-type: none">• clear jar or glass• 1 cup water• 3 Tbsp of alum, borax or sugar• 2 white pipe cleaners string pencil
Procedure	<ul style="list-style-type: none">• Have students watch a channel on Justin.tv that involved snow falling out doors, or broadcast the snow experiment on Justin.tv for other classrooms to watch the experiment taking place.• Cut pipe cleaners in half. Using 3 halves twist them together in the center so they resemble the spokes of a wheel.• Tie the string to one end of a pipe cleaner point. Connect it to each one of the points by wrapping the string around it. Tie it off where you started and leave enough string to suspend the "snowflake" in solution.• Use a microwave or coffeepot to get the water very hot. Stir in the alum., borax or sugar slowly until it all dissolves. It is then a supersaturated solution. If you need more solution, use the 3Tbsp to one cup water proportion.• Tape the string on the snowflake frame to a pencil that will lie across the mouth of the jar.

<p>Procedure</p>	<ul style="list-style-type: none"> • Lower the snowflake into the solution, making sure it doesn't touch the bottom and that it is completely submerged. • Put the jar in a place where it won't be disturbed. The crystalline structure will align itself, if not disturbed. • As it cools it can't hold as much of the borax/alum/sugar. As it comes out of suspension it will form on the framework. Don't allow any of the solution to be poured from glass to glass. The forming crystals will travel up the side of the glass where it was poured. • Let it set at least 24 hours before removing from solution. Try tying the string in various patterns. Try adding food coloring to the solution.
<p>Application</p>	<ul style="list-style-type: none"> • Students will work in groups to make the snowflakes • They will answer questions and ask questions that I will give them after the experiment has been completed.
<p>Evaluation</p>	<p>The students will complete a short quiz about the making of crystals.</p>
<p>Resources</p>	<p><u>HTTP://LESSONPLANS.FUNDINGFACTORY.COM/PLAN_DETAILS.ASPX?ID=756</u></p>