



LESSON PLAN

Who is Afraid of Mathematics ?

Category: MATHS IN NATURE

Title of the activity: Bubble Geometry

Year Group: Form 6

Teacher: Līga Bužere

Learning Objectives:

Refresh knowledge about different shapes.
To raise students' interest about Math and physics.
The team work.
Encourage student's to experiment with possible shapes of bubbles.
Discuss basics of physics.

Success Criteria:

Everyone is involved.
Students are practicing and using their imagination to create different shapes.
Pupils experiment and make conclusions.
Students follow safety rules when they are using dry ice.

Resources:

To make strong bubble soap mix- Liquid dish soap, water (better distilled water), glycerin

Straws, scissors, modelling clay, deep bucket, a pair of gloves, safety glasses,
dry ice

For fun experiment- <http://www.sciencekids.co.nz/experiments/dryicebubble.html>

Lesson Description (including context):

Interactive activity, where students learn through co-operation and experimenting. Pupils learn about interactions of substances to make a strong bubble mix. Students make their own shapes from straws for getting different shapes of bubbles. Activity is full of fun and excitement, students learn through the play and experiment.

Differentiation:

It is team work, students collaborate for better results.

Introduction:

Teacher selects information how much do students already know about bubbles– Do bubbles always make a spherical shape, what are they made of, shapes, what affects their durability. As round bubbles are more common for students, teacher invites to organize a bubble geometry activity.

Main Lesson:

Teacher demonstrates how to make a super strong bubble soap mix, telling about the role and proportion of liquids he/she adds.

Pour the bubble mix in the deep bucket.

Students make different 3D shapes from straws sticking them together with modelling clay. It is a good, playful way for revising shapes.

Students carefully one by one dip their shapes into the bubble mix and find out that the liquid covers all the sides.

Pupils can experiment with different ways of blowing out/in bubbles.

Children recognise that bubbles can be in different sizes and different shapes and it is possible to blow bubbles inside the shape.

They catch the bubbles and count how long they last before pop.

Teacher takes a box with dry ice. Informs the students that they mustn't touch the ice, because it can cause skin damage

Teacher tells the main information about it (Dry ice is frozen carbon dioxide. A block of dry ice has a surface temperature of - 78.5 degrees C)

Teacher puts some dry ice cubes in the pot and covers with warm water. Students see that it turns into Gas.

Students experiment with this gas, blowing it in the bubbles. It helps to see the shapes.

Activity can be followed by the experiment Make a Big Dry Ice Bubble <http://www.sciencekids.co.nz/experiments/dryicebubble.html>

Plenary:

This activity involves students in active cooperation. Pupils are very interested in making experiments, they revise their knowledge and learn in natural way. For big groups of students, teacher's assistant is needed.

PHOTOS

