



Chemistry in Ireland

Irish Drug Scandals

There are many examples of drugs being used to enhance performance in sporting events in Ireland as well as many other parts of the world.

The Federation Equestre Internationale (FEI), which is the international governing body for show-jumping and equestrian sports, bans a derivative of chilli powder which causes a burning sensation. When rubbed into an animal's leg's it causes the animal to jump higher because it is so painful to hit the pole. Denis Lynch was disqualified from competing in the show-jumping final at the Olympics because his horse Latinus had been tested positive for this banned substance.

As well as this, a new report says that greyhound



Denis Lynch with his horse Latinus




owners are feeding their dogs cocaine and illegal amphetamines in order to win races all over Ireland.

An Irish rower and an Irish rugby player have recently failed drugs tests. The rower had traces of cannabis in his system. The rugby player, Mark Mahony has escaped with

a warning.

Apparently, performance-enhancing substances have always been used. Mushrooms, caffeine, opium, ephedrine, and strychnine have been used as far back as the 1800s.

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Easy Chemistry Experiments



Here are two very easy chemistry experiments for you to do in your own home. The materials are all things that can be found around the house.

Honeycomb Candy

Honeycomb candy has an interesting texture because of the carbon dioxide bubbles trapped within it. The carbon dioxide is produced when baking soda (sodium bicarbonate) is added to hot syrup. This is actually the same process which causes baked goods to rise. Follow this recipe to make your own honeycomb candy.



When the mixture in the saucepan turns amber, it is time to add the baking soda.

- 1 teaspoon baking soda

Method:

1. Grease a baking sheet using oil, butter or non-stick cooking spray.
2. Add the sugar, honey and water to a saucepan and stir.
3. Cook the ingredients over high heat without stirring. The sugar will melt, small bubbles will form, the bubbles will become larger and the sugar will start to caramelize to an amber colour.
4. Remove the pan from the heat and whisk the baking soda into

the hot syrup.

5. The mixture now rapidly foams up, and should be dumped immediately onto the baking sheet. Do NOT spread it out, as this would pop the bubbles.
6. Allow the candy to cool, then break or cut it into pieces.
7. Do not panic if the mixture seems to be stuck solid to the saucepan, a little boiling water is all it needs to melt again!

Ingredients:

- 3/4 cup of sugar
- 2 tablespoons honey
- 2 tablespoons water



The finished honeycomb

Invisible Ink

Invisible ink can be made very easily and it is very enjoyable to watch it appear again. It works because the ink is basic and reacts with the acid, changing it a different colour.

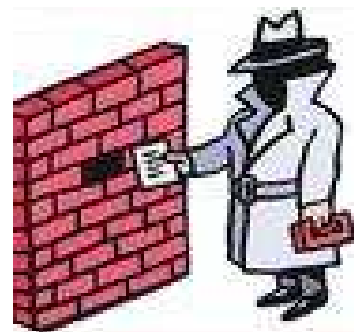
Materials:

- 1/4 cup of water
- 1/4 cup of baking soda
- Paintbrush

- Grape juice

Method:

1. Mix the water and baking soda together.
2. Use the paintbrush to write a message using the mixture
3. Allow to dry completely.
4. Paint over it with grape juice and watch the words appear!



Water Screen

This is just like magic! You will amaze your friends with this trick that defies gravity!

Materials:

- Plastic mesh bag used for produce at a grocery store
- Wide mouth bottle
- Index card
- Rubber band
- Pitcher of water
- Bucket to catch the fallen water

Method:

1. Stretch a piece of mesh over the bottle and secure it with a rubber band
2. Fill the bottle with water by pouring it through the screen, proving that water can pass through the screen
3. Place the index card over the opening and slowly tip the bottle

over

4. Slowly remove the index card. The water will not fall!
5. Now tilt the bottle slightly to the right or left and it will fall!



This trick works because of cohesion. The water stays in the bottle because the water molecules are joined together to form a thin membrane in each hole in the screen. Tipping the bottle will cause the membrane to break.

Chemistry in our Transition Year

We all spent part of our Transition Year doing chemistry-related activities. We got the opportunity to do a wide range of different things, from glass-blowing to computer programming to learning about cures for different genetic diseases. We have all learned a lot from the experience!

Work Experience in the Labs

Riona did her Transition Year work experience in a lab.

Work Experience in the labs was not as I expected it be. It was better! It was very interesting to see all the extra equipment and safety precautions that are in place.

"Work experience in the labs was not as I expected it to be. It was better!"

I was in a different lab each day and I learned about all the different areas there are. I also learned how to perform different experiments and test them to see if that certain batch was in working order.

The following week I was in the Quality Assurance department and the company I was in

was going to be audited. I saw how they file and write up the necessary documents. I also attended some meetings and how to come up with compromises and solutions.

After two weeks in this environment, I definitely think the science industry will be a possible future career.

- Riona Walsh

Chemistry Week in UCD

Lorna spent one week of her Transition Year seeing what life would be like as a chemistry student in UCD.

On Monday we were taken on an interesting tour of the UCD campus by a student ambassador. We were given a talk on the science of mass spectrometry, which was really interesting.

The first task for Tuesday morning was to "Shadow a Scientist", to experience the day-to-day routines of a scientist, and to meet the scientists themselves. Each one of us from the group of fourteen was assigned a scientist to take us under their wing for the next two mornings. We got a talk on glass-blowing. The man giving



the talk created a little swan for one of us to take home. The next session was entitled "Chemistry Illusions", where we were shown the lighter side of chemistry with explosions such as the chromium volcano and we played around with liquid nitrogen and a banana.

On Wednesday we paid a visit to UCD Conway Institute for an introduction to DNA and Neuroscience. We were given a lecture on investigations using zebra-fish to develop gene therapy and other cures for human blindness. We got a tour of the new building and then we finished with a fun but messy experiment extracting DNA from a banana.

On Thursday we went to the

UCD School of Computer Science and Informatics. We were taught all about the software "Scratch", a computer programme which teaches the basics of computer programming in a fun and interesting way. We then got a talk from an Italian lecturer in Chemical Biology in UCD who told us a bit about where she's from and why she decided to pursue a career in science and what she does every day.

We went over to the UCD School of Chemical and Bioprocess Engineering on Friday for a half-day workshop, where we got to do different experiments. Then we had a tour of National Institute of Bio processing research and training.

- Lorna McSherry

Work Experience with a Geneticist

Anna did her Transition Year work experience in the Smurfit Institute of Genetics in Trinity College.

I learned so much from my work experience in Trinity. It showed me some of the important applications of science in modern life.

The geneticists in Trinity were really friendly and helpful as they patiently explained all the work they were doing. At that time, all the scientists there were researching a cure for the

genetic disease retinitis pigmentosa. This is a disease which affects the eye, causing vision to deteriorate until the victim eventually becomes blind. The geneticists were trying to find a way to cure the disease by replacing part of the DNA. They let me watch as they did various tests and experiments, including running a gel and dissecting a mouse's eye to examine the retina. I also was able to attend a lecture about some other ge-



The Smurfit Institute of Genetics, where I spent the week

netic research with some of the genetics students.

I loved getting the opportunity to see what life is like in a lab and talking to the geneticists about their work. It was so interesting to see a real application of science that is changing the lives of people living with genetic diseases. It made me even more certain that a career in science is definitely one that I would like to follow.

- Anna Lawless



CHEMISTRY NEWSLETTER

Team Members:

Anna Lawless
Lorna McSherry
Riona Walsh

Rathdown School, Glenageary, Co. Dublin
Teacher: Ms Rice

Team Leader: Anna Lawless
Phone: 087 255 3956
Email: anna-page@hotmail.com



Bibliography

- <http://www.kidzworld.com/article/3844-making-invisible-ink-appear>
- <http://chemistry.about.com/od/foodscienceprojects/a/honeycombcandy.htm>
- www.tribune.ie/article/2008/aug/24
- www.boardsie.com
- www.independent.ie
- www.irishmedicalnews.ie
- www.stevespanglerscience.com



Many compounds can be found in your very own kitchen! Can you guess any? Well,

- Sodium chloride (salt)
 - Carbon dioxide
 - Calcium Carbonate (marble table)
 - Sugar (made up of carbon, hydrogen, oxygen)
 - Hydroxide (water, ice)
 - Ammonia (glass cleaner)
- ...are all compounds found in the home!



Did You Know...

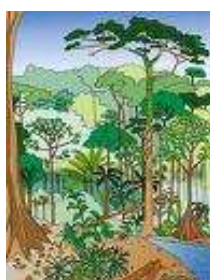


- Chemical reactions occur all the time...even in your home! Try adding an **acid** such as vinegar to a **base** such as baking soda and **see what happens!**

- If you pour a handful of **salt** into a **completely full** glass of water, it will not overflow - instead the **water level will go down!**

- It is estimated that a **plastic container** can resist decomposition for as long as **50,000 years**.

- 20% of the world's **oxygen** is produced by the **Amazon forest**.



- The only letter not appearing on the **Periodic table** is the letter **"J"**.
- **One inch** of **rain** is equal to **10 inches** of **snow**.



- **Natural gas** has **no odour** - the smell is added artificially so that leaks can be detected easily.
- **Gold** and **copper** are the only two **non-white** metals. Absolutely pure gold is so soft that it can be **moulded with the hands!**

Cheesy Chemistry Crack-Ups!

"My name is Bond - **Covalent Bond**"

What is the name of 007's Eskimo cousin? **Polar Bond!**

Why are chemists great for solving problems? **They have all the solutions!**

What do you do when you find a dead chemist? **Barium!**

What is the purpose of a doctor? **Helium!**

Two atoms are walking down the street. One atom says to the other, "Hey! I think I've lost an electron!" The other says, "Are you sure?" **"Yes, I'm positive!"**

A small piece of sodium which lived in a test tube fell in love with a Bunsen burner. "Oh Bunsen, my flame, I melt whenever I see you..." the sodium pined. The Bunsen burner replied, **"It's just a phase you're going through!"**

A neutron goes into a bar and asks the bartender, "how much for a beer?" The bartender replies, **"For you, no charge!"**

Teacher: What is the formula for water?

Student: H, I, J, K, L, M, N, O

Teacher: That's not what I taught you.

Student: But you said the formula for water was **H to O!**

