

# Molecule Madness Club

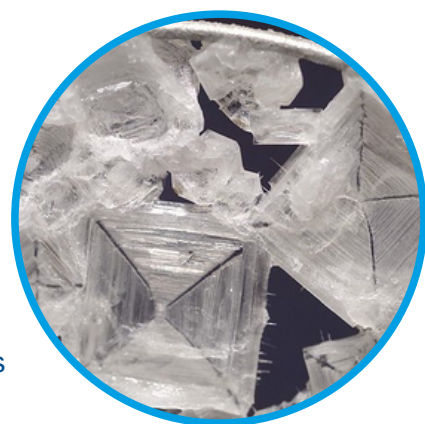
## 2023 Report

Aberdeen Science Centre's (ASC) first Molecule Madness Club concluded after a successful week of fun biochemistry related activities. Running from 10th - 13th July, the club consisted of a total of 16 children - six girls and ten boys. Across the four sessions, the club was extremely well attended with an average attendance of 97%. This club represented a new area for ASC to explore as chemistry and biochemistry have rarely been covered during the Centre's themes and clubs. The club met the objectives set out by ASC as it successfully attracted the target number of participants while also implementing fun, practical and engaging learning experiences for participants. Group work integrated key social skills into the club and allowed for discussion of biology and biochemistry in the context of further education.



In the first session, attendees were introduced to the concept of biochemistry by learning about microorganisms. The children were given cotton buds to take swabs from areas around the Centre which were then used to culture bacteria in pre-made agar plates. These were checked every day to monitor growth, with most displaying several small colonies. The second half of this session involved extracting a DNA precipitate from strawberries using isopropyl alcohol. This was very well received as it was very hands on and messy. This session allowed for discussion of lab based careers that the children could pursue in the future.

The second session introduced the participants to catalysts and enzymes by looking at yeast. They mixed the yeast into two beakers - one with warm water and one with cold water - and tied a rubber glove over the top of each beaker. The children learned about optimum temperature as the glove inflated in the warm beaker due to the yeast's production of carbon dioxide while the cold beaker's glove remained deflated. The attendees also made some crystals by saturating three different beakers of water with salt, sugar, and bicarbonate of soda, respectively. They then pipetted many small drops of each solution into petri dishes and allowed them to evaporate overnight, leaving behind small crystals of three different consistencies.



# Molecule Madness Club

## 2023 Report Continued



Session three was popular due to its very messy nature. In the first half of the session, the group partook in a revamped version of ASC's "how to make the perfect poo" workshop. The children were split into groups and tasked with following the steps of food from swallowing to digestion, culminating in producing the "perfect poo" at the end. The participants learned about the chemistry of the human body and how it affects digestion. The teamwork aspect of this session was very successful as it proved to be an easy way for the children to make friends and improve social skills. The session finished off with a slime making lesson using PVA glue, contact lens solution and bicarbonate of soda. This proved to be a hit and the children were thrilled to take their creations home.

The final session focused on messy biochemistry fun. The participant's new knowledge of catalysts and enzymes was put to the test as they made their own elephant's toothpaste using hydrogen peroxide and yeast. ASC's garden was covered in sticky fizzy juice as the children compared different soft drinks' reactions with mentos before finishing off the club with a hydrogen peroxide and manganese dioxide smoking vent. Visually spectacular demonstrations were the focus in an attempt to create memorable experiences at Aberdeen Science Centre and inspire a lifelong interest in science.



The Biochemistry Society's funding made this club possible. ASC purchased eight new microscope kits which allowed us to examine our yeast, bacteria and crystals in much more detail. Part of the funding was used to obtain "molymod" kits to give the children an idea of the different chemical structures we were utilising during the club such as hydrogen peroxide and water. The funding also allowed us to bring in consumables which contributed to the club's smooth running.

There are some ways in which the club could have been improved. A seating plan may have prevented some behavioural disruption and improved enjoyment at times throughout the sessions. This would have made delivery of the sessions easier for the staff while making instructions clearer for the participants, therefore improving their experience. Access to some more specialised equipment and facilities, such as a fume cupboard, gas taps or certain metals may have allowed for the safe undertaking of more impressive activities. While these aspects would have improved the club, their absence certainly did not hinder it. Scripts and activities from this club may be used as part of the public and schools programmes going forward.