

## الكيمياء السنة الرابعة الخدمة والعمل

استوحى طلبة السنة الرابعة من بيان الاستفسار للوحدة الثالثة ؛ "فكر عالميا و نفذ محليًا ". واتفقوا على أنه سيكون من الصعب تخيل حياتنا دون المواد الكيميائية الحديثة لأن استخداماتها تشمل أقمشة الملابس والأدوية وإنتاج الغذاء والهواتف المحمولة والأقراص المدمجة DVD والسكن والعمور والأصباع والسيارات الجديدة وأشكال الطاقة الجديدة. ومع ذلك ، كما هو الحال مع العديد من التطورات العلمية والتكنولوجية، غالبًا ما تكون هناك آثار جانبية غير متوقعة تحتاج إلى معالجة. لذلك، قرر الطلبة إجراء خدمة غير مباشرة ونشر الكلمة والتعاون وإنشاء عرض تقديمي لذكر بعض المواد الكيميائية الضارة وتأثيراتها على الغلاف الجوي للأرض.

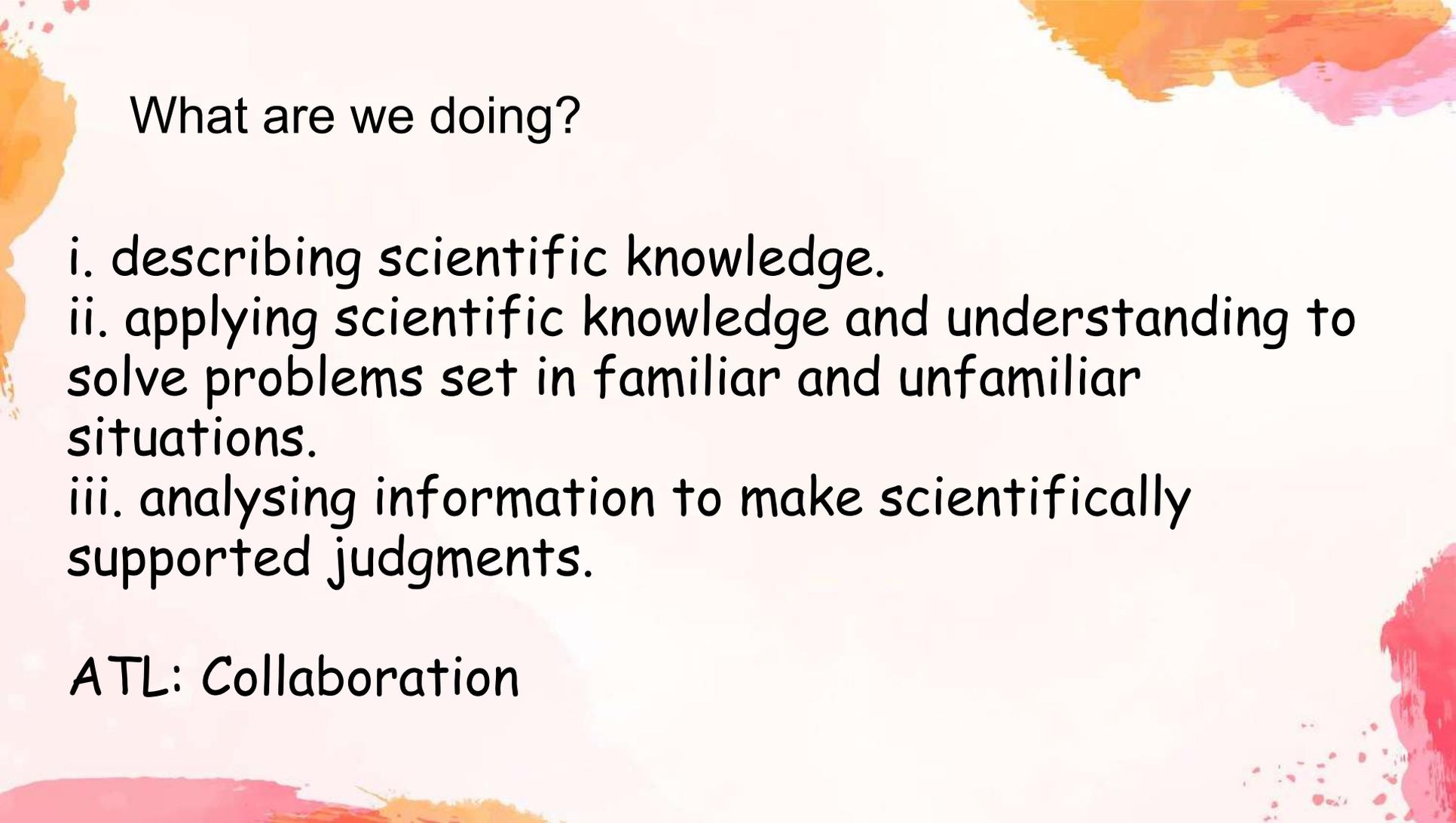
### المخرجات التعليمية للخدمة والعمل

- الوعي بنقاط القوة الخاصة بهم ومجالات النمو.
- النظر في الآثار الأخلاقية لأفعالهم.



# Responsible Citizenship in a Chemical Age

We can change the world into a better one.  
**MYP-Year 4 students**



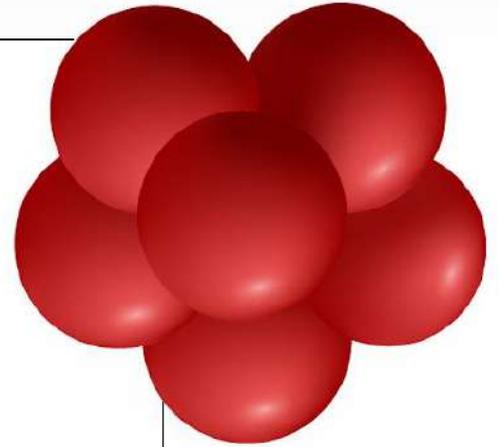
What are we doing?

- i. describing scientific knowledge.
- ii. applying scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations.
- iii. analysing information to make scientifically supported judgments.

ATL: Collaboration

# INTRODUCTION

It would be difficult to imagine our lives without modern chemicals. Their uses include fabrics for clothes, medicines, food production, mobile phones, DVDs, housing, perfumes, dyes, new motor car and new forms of energy. However, as with many scientific and technological developments, there are often unexpected side effects which need to be addressed.

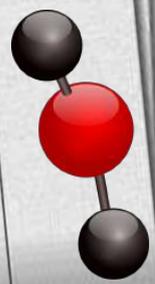


# George NEWS

**FERTILIZER FOUND IN SOIL!**  
A fertilizer is any material of natural or synthetic origin that is applied to soil or to plant tissues to supply one or more plant nutrients essential to the growth of plants.  
Reported By George

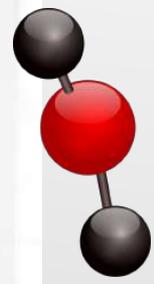


Robbery  
on psst  
Street



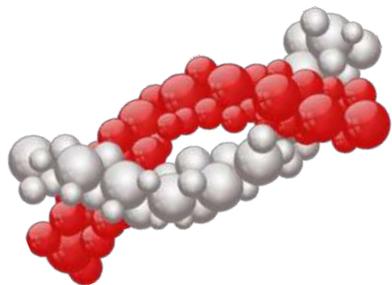
## Arsenic!

**Arsenic:** Arsenic is a chemical element with the symbol As and atomic number 33. Arsenic occurs in many minerals, usually in combination with sulfur and metals, but also as a pure elemental crystal. Arsenic is a metalloid.  
Written By George



# VOCs in offices and the home

Jessica

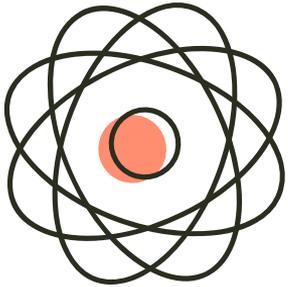
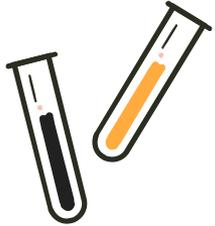


VOCs are a major group of chemicals which are referred to as Volatile Organic Chemicals. They include chemicals from paintings, carpets, fuels, cleaning agents, couches and furniture

VOCs are usually never the cause of a health hazard. However, some are controversial. → →

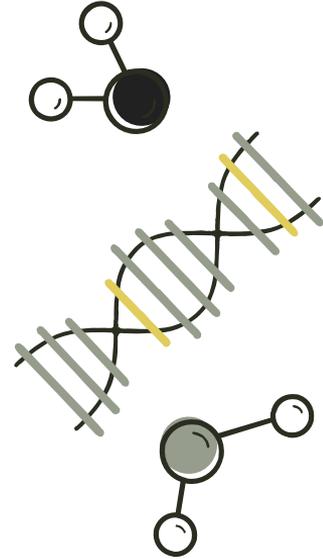
Household furniture must be treated with flame retardants. One example of a flame retardant is PBDE, it has shown to reduce fertility to humans due to the fact that it has attracted increasing scrutiny. It has also been banned in several counties.

Chlorofluorocarbons are non-toxic, non-flammable, and very stable gaseous compounds that are used in spray cans, foams, and in refrigeration units, manufactured under the trade name Freon.

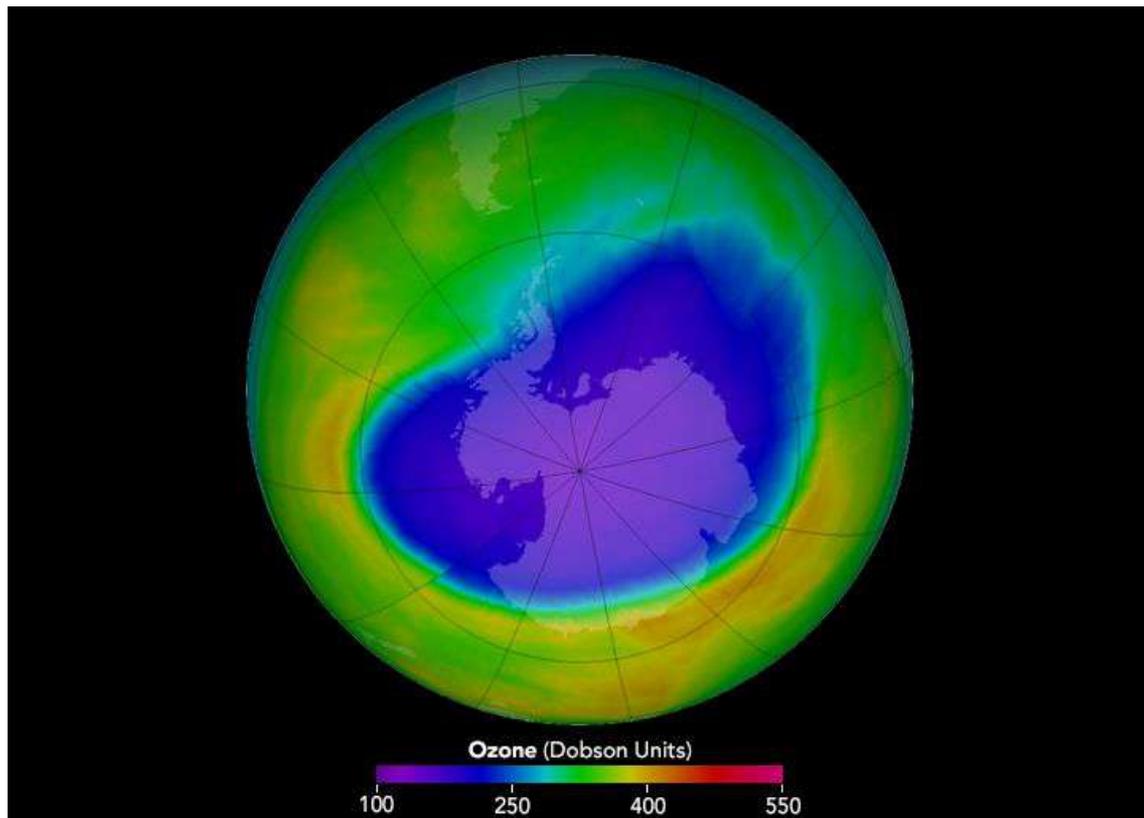
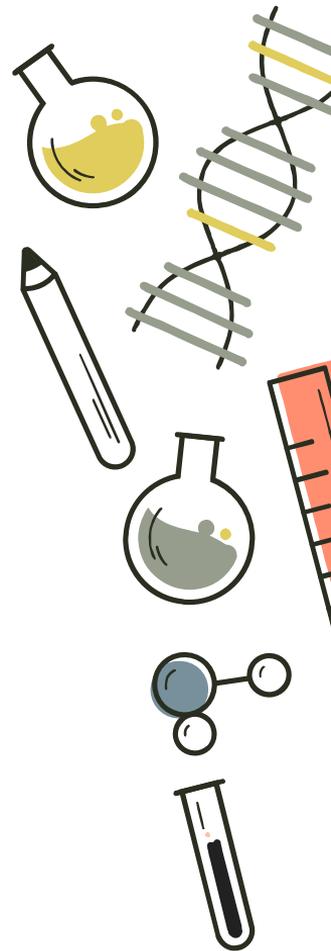
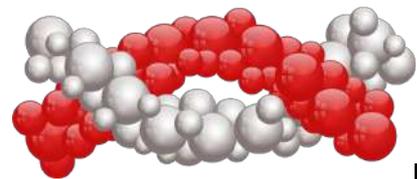


The problem with CFC's links to one of it's good qualities; It is very stable. It does not break down, and it gradually rises up into the stratosphere. This is a natural example of chemicals being transferred naturally from one place to another, which in this case, *produces unexpected and negative consequences towards the environment.*

# The impact of CFC's



# Yasmina

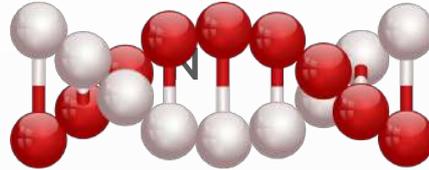


(Allen)

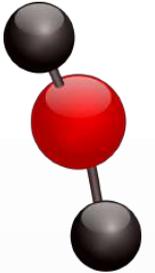


# Photochemical reactions

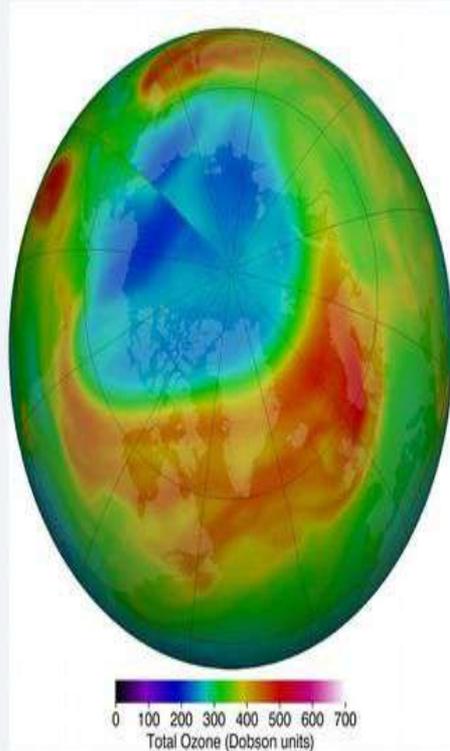
A photochemical reaction is a chemical reaction triggered when light energy is absorbed by a substance's molecule. This response leads the molecules to experience a temporary excited state.



Naya



# How did the Ozone layer change during Corona Pandemic?



© NASA

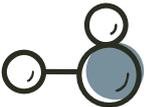


By Rits

-the pollution rate has decreased from the lockdown because us humans we are the reason of pollution so when we quarantine we stopped polluting and the ozone layer is healing

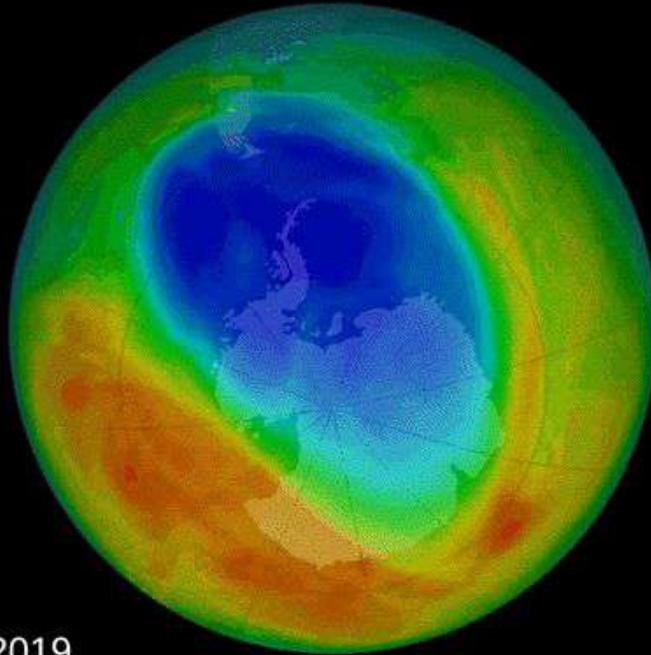


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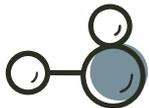


# Earth during the year

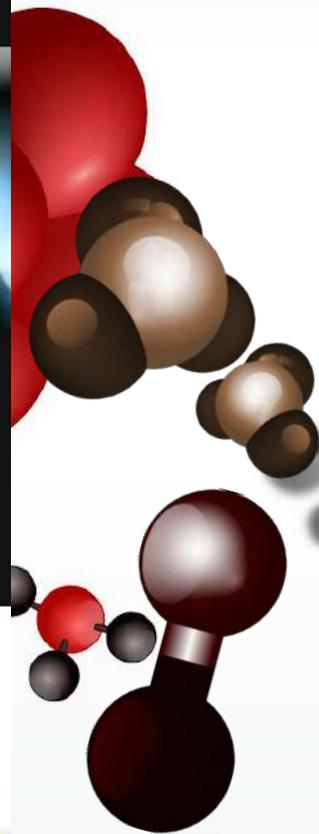
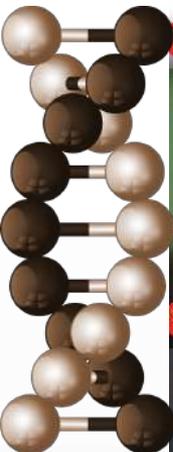
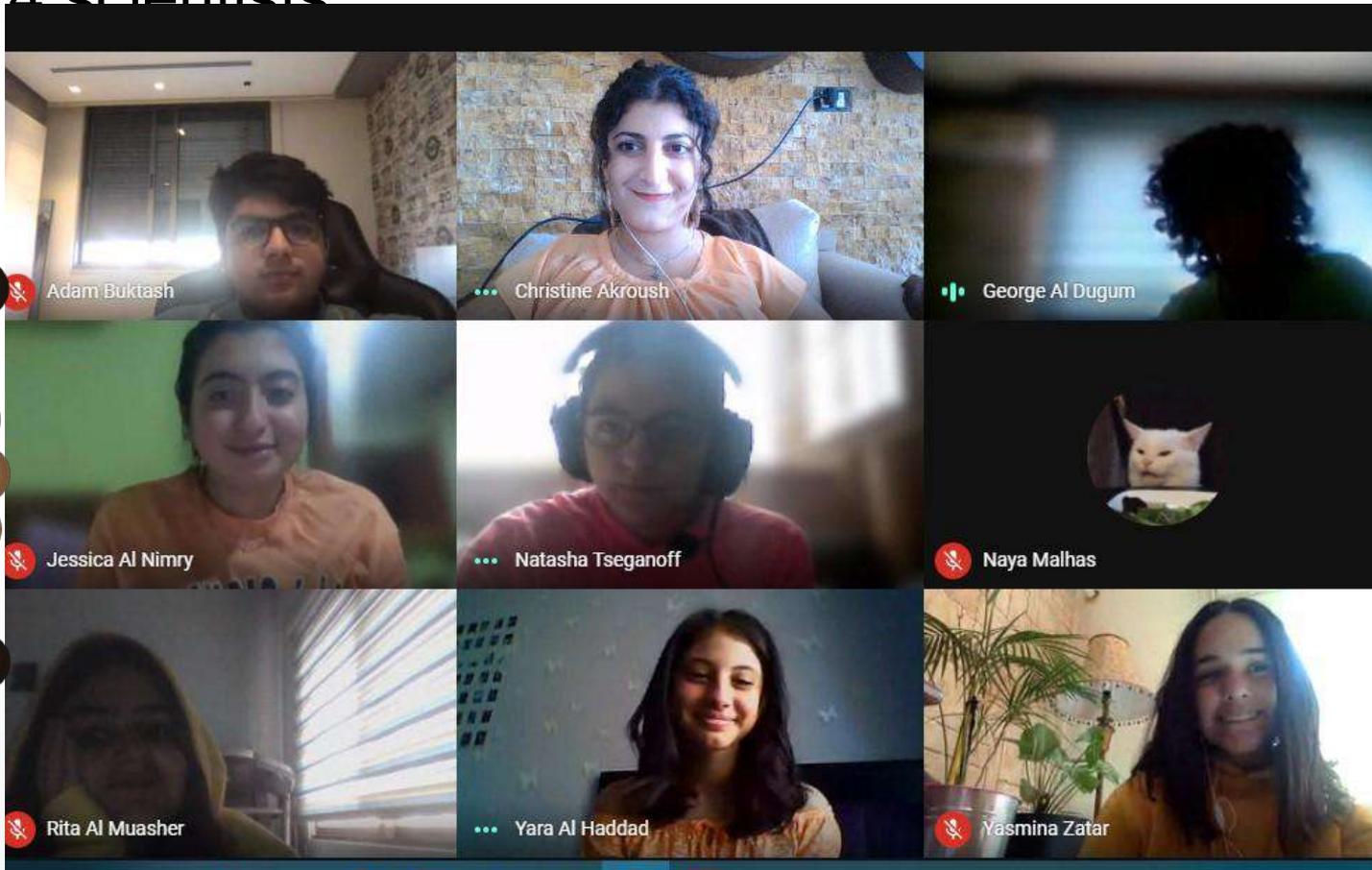


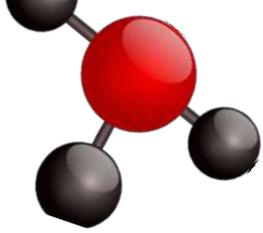
Sep 15, 2019

Rits

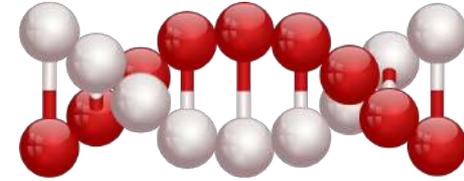


# “We can change the world” “Think Globally, Act Locally!” MYP - Year 4 scientists

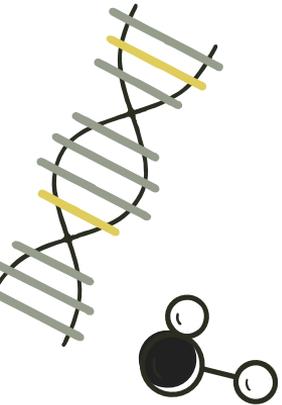
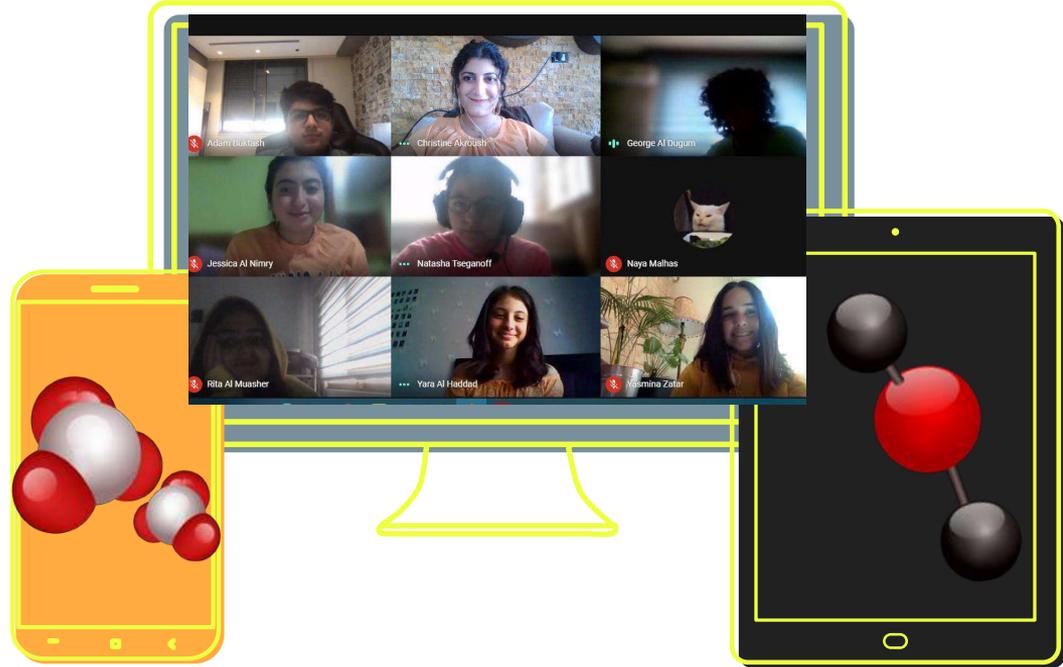




“Think Globally, Act Locally!”



Take action to  
improve responsible  
use and disposal in  
your own home.

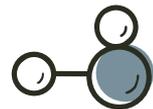




# Citations & References:

Allen, Courtesy Jesse. “NASA Began Measuring Earth’s Stratospheric Ozone Layer by Satellite in 1979. By the Time the Montreal Protocol Went into Effect in 1989, Ozone Concentrations (in Dobson Units) Had Declined Significantly over the Antarctic, Enlarging the Ozone Hole. Ozone Levels Have since Stabilized, but Recovery Is Still Decades Away, According to NASA.” *Chlorofluorocarbons and Ozone Depletion*, 2016, [www.acs.org/content/acs/en/education/whatischemistry/landmarks/cfcs-ozone.html](http://www.acs.org/content/acs/en/education/whatischemistry/landmarks/cfcs-ozone.html).

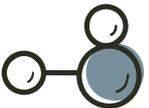
PCA, M. *Chlorofluorocarbons (CFCs) and Hydrofluorocarbons (HFCs)*. 11 Jan. 2019, [www.pca.state.mn.us/air/chlorofluorocarbons-cfcs-and-hydrofluorocarbons-hfcs](http://www.pca.state.mn.us/air/chlorofluorocarbons-cfcs-and-hydrofluorocarbons-hfcs).

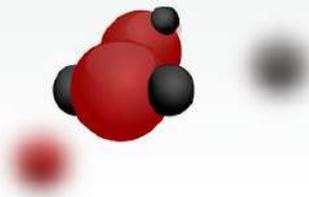




# Citation

(www.dw.com), D. (n.d.). Record-size ozone hole over Arctic now healed and closed: DW: 01.05.2020. Retrieved January 11, 2021, from <https://www.dw.com/en/record-size-ozone-hole-over-arctic-now-healed-and-closed/a-53304374>





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- 