

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

বিস্মিল্লাহির রাহমানির রাহীম



উদ্ভাস

একাডেমিক এন্ড এডমিশন কেয়ার



# Class X Academic Program -2020

## Chemistry

*Prepared by : Sadat Ahmed Dipro*



# (Fossil Fuel)

animal + plants  
↓  
Decompose

Heat energy

Wood  
+ O<sub>2</sub>  
↓  
BURN  
↓  
energy  
↓  
Diff. Type





# জীবশ্ম ভ

4 Factors

animal  
plant

Decompose

Fossil

extract

Detect



ORGANIC MATTER



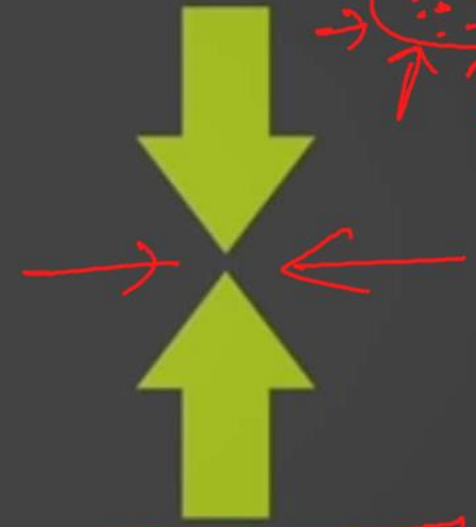
TEMPERATURE



lengthy  
process

TIME

crucial  
factor



PRESSURE CONDITIONS

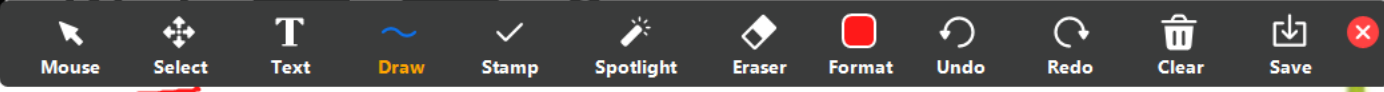
insects +  
bacteria

enzyme



# জীবাম্ম জ্বালানি

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Fossil Fuel



**COAL**

Ingredient  
C



**OIL**

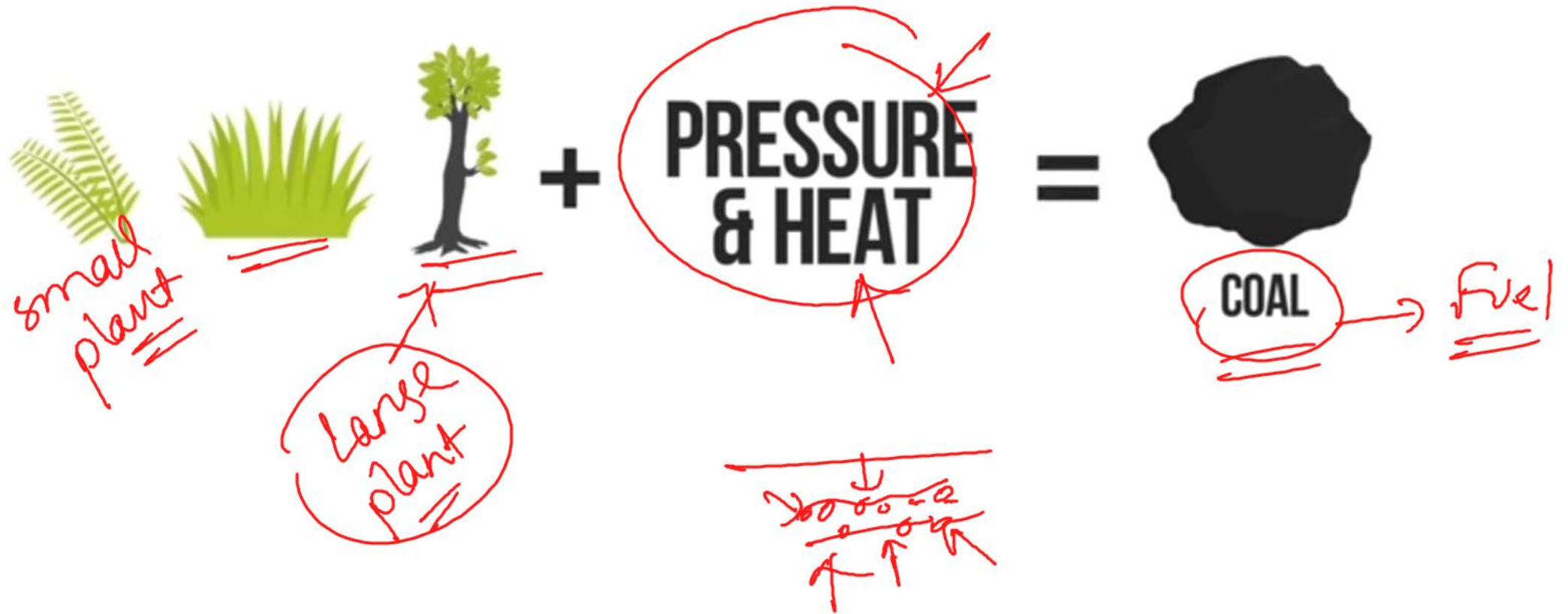
petroleum  
oil

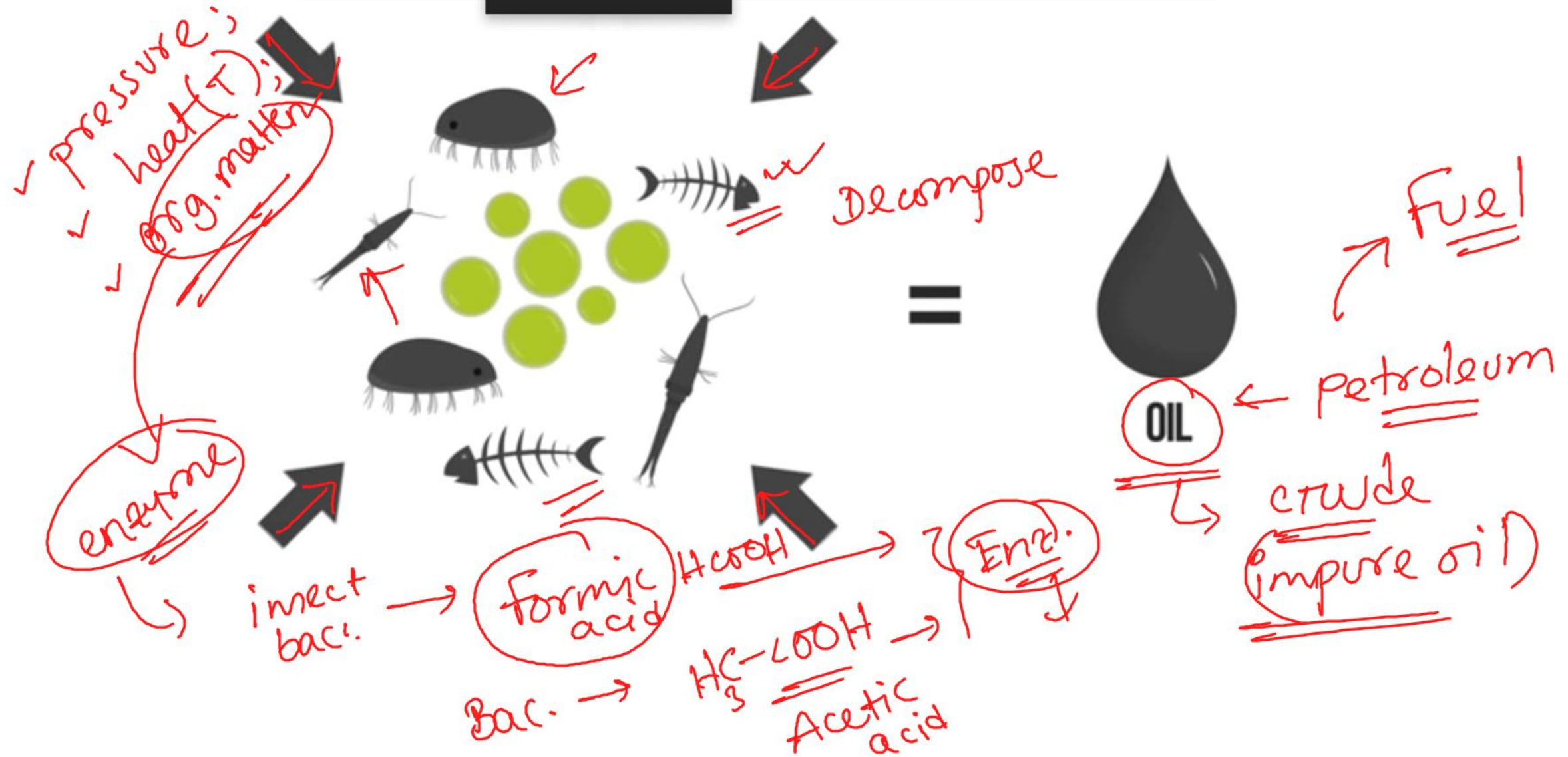


**NATURAL GAS**

CH<sub>4</sub>  
C<sub>2</sub>H<sub>6</sub>





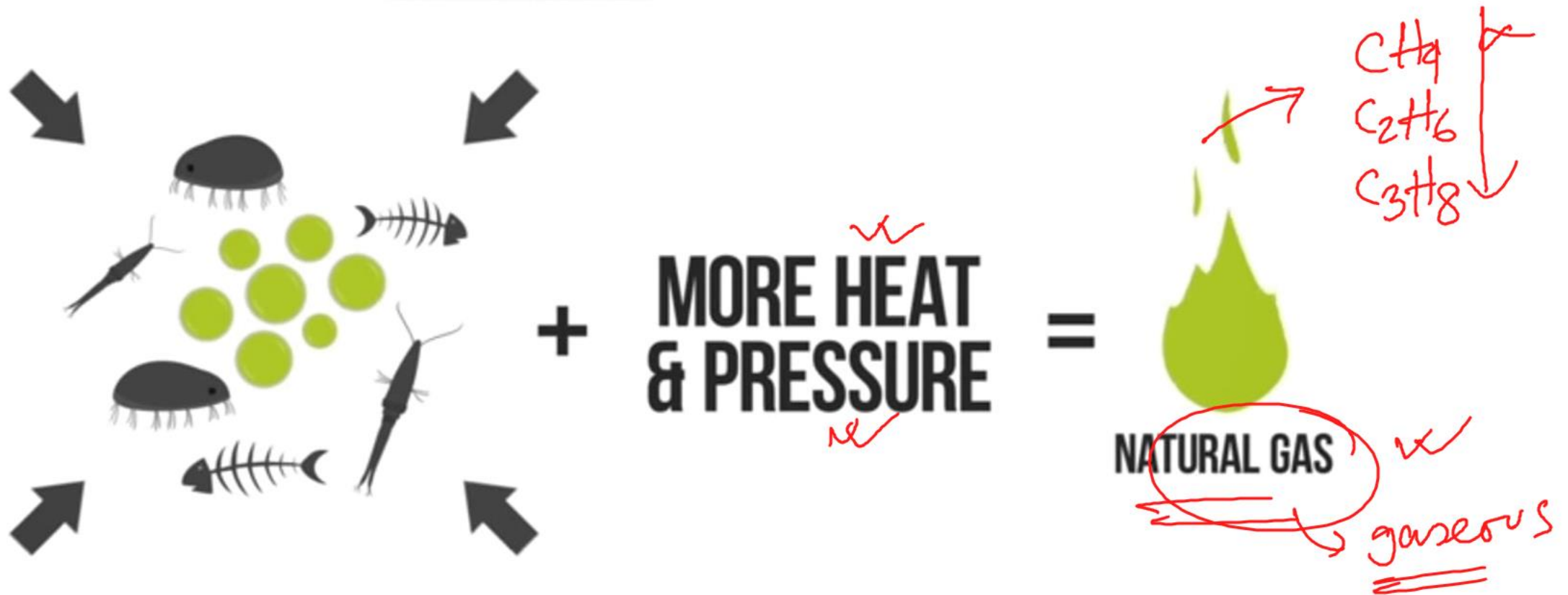




Mute Start Video Participants 292 Q&A 56 Polls New Share Pause Share Annotate Remote Control More 23

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Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save





✓ 1. Natural Resource  
✓ 2. Enough sufficient

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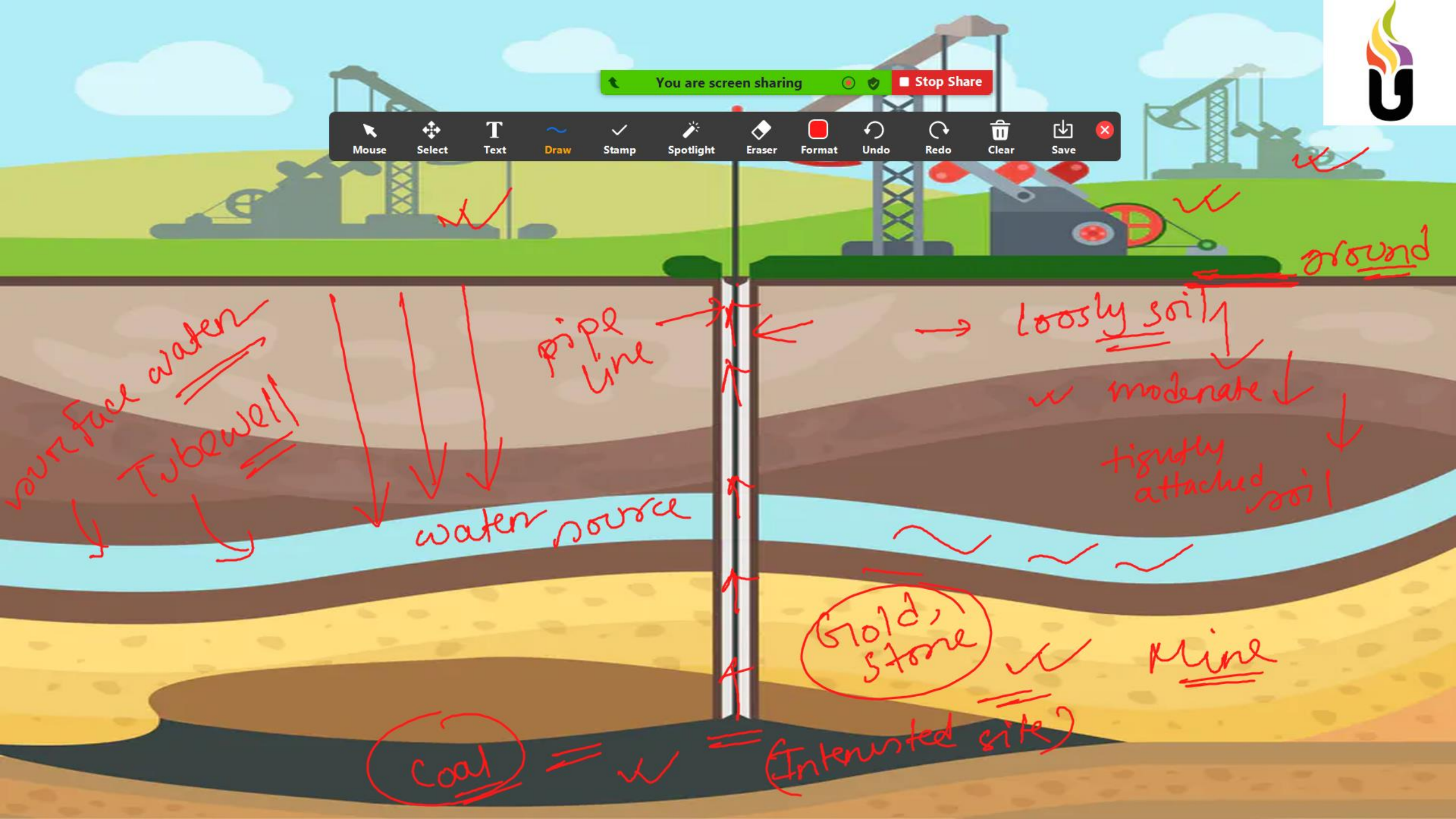
Mouse Select Text Draw Stamp Spotlight Eraser Format Undo Redo Clear Save ✕







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Impure

Mute Start Video Participants 290 Q&A 55 Polls New Share Pause Share Annotate Remote Control More 25

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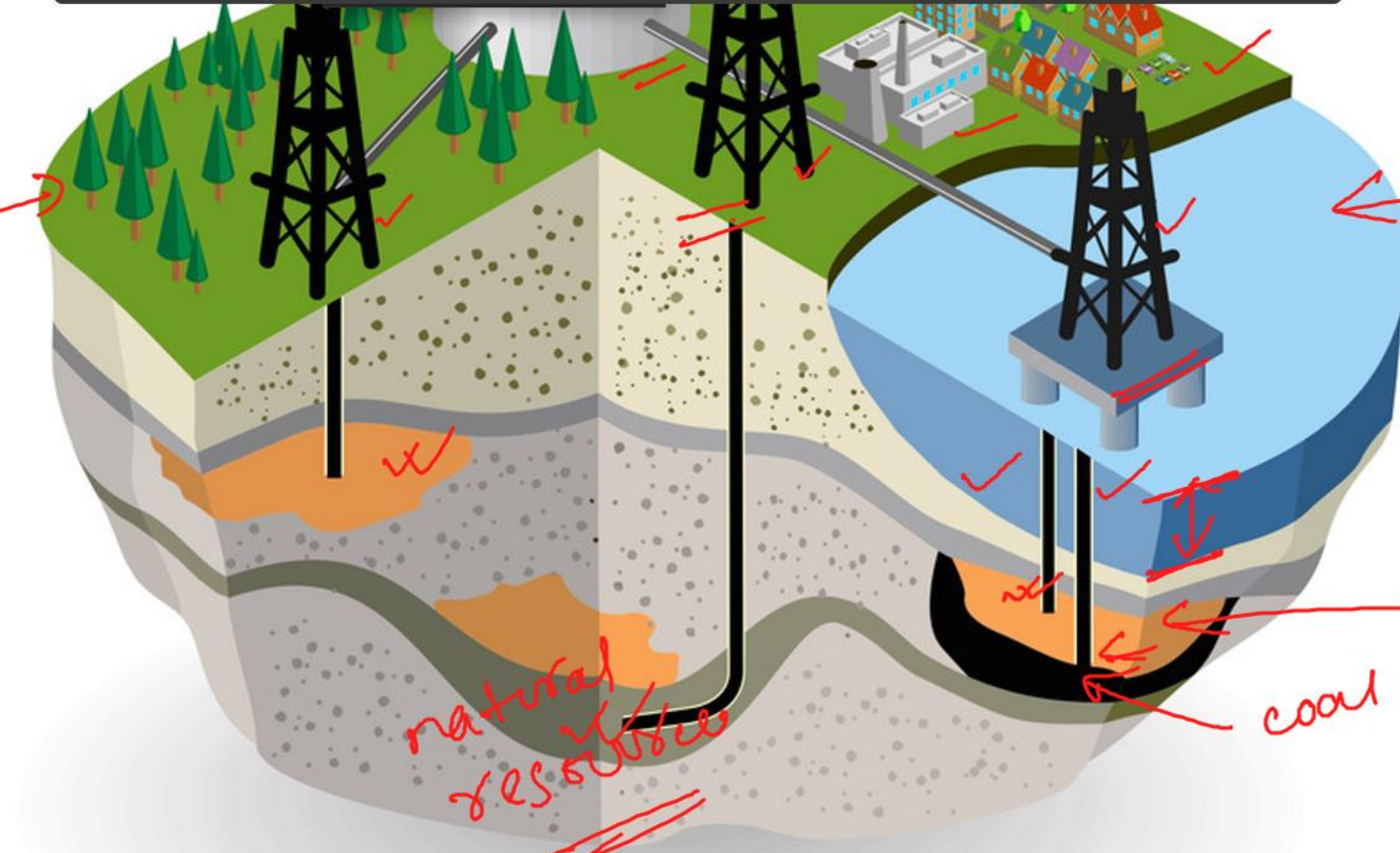
land

water  
(ocean)

natural gas or  
oil

coal

natural  
resources

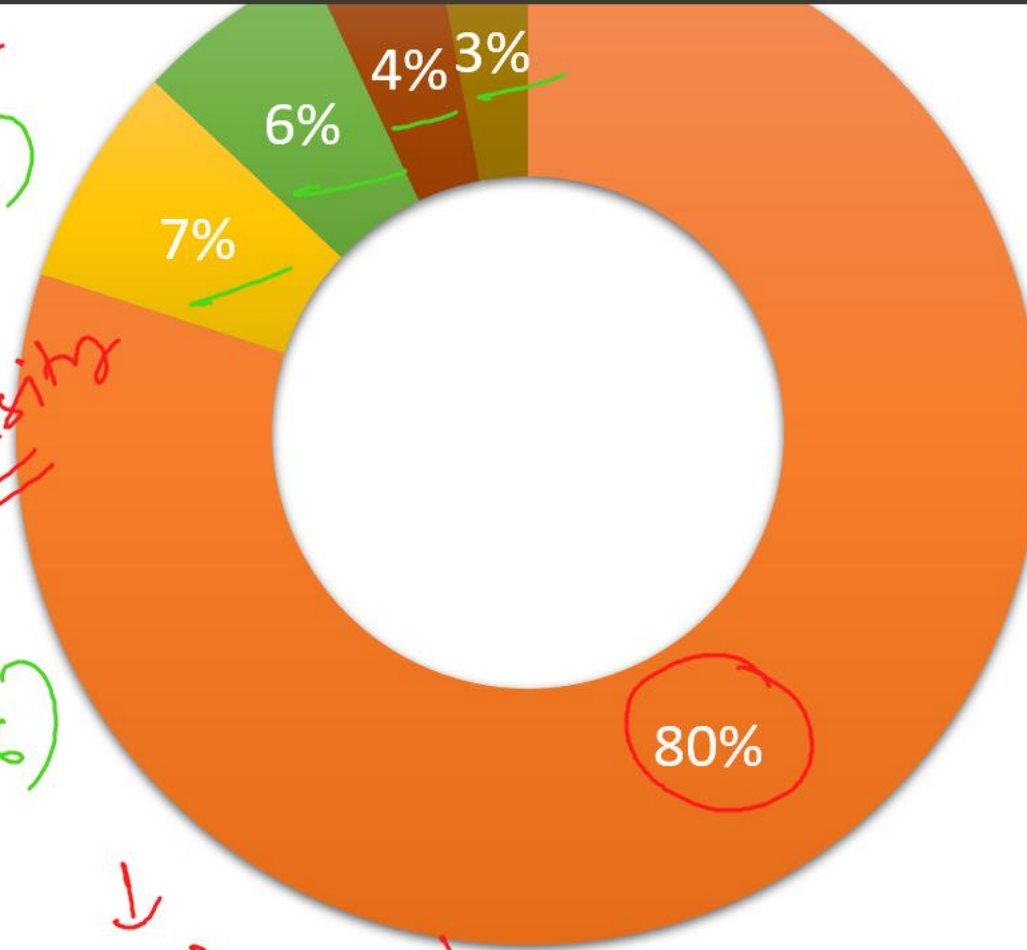




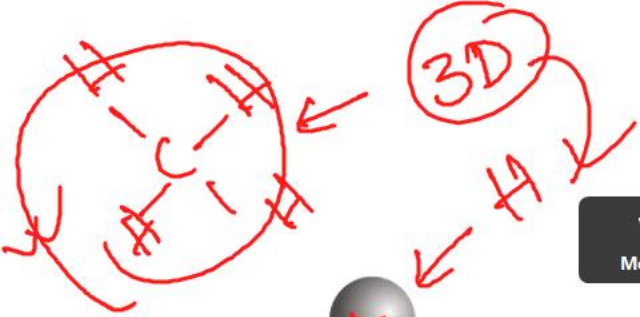
# Natural Gas



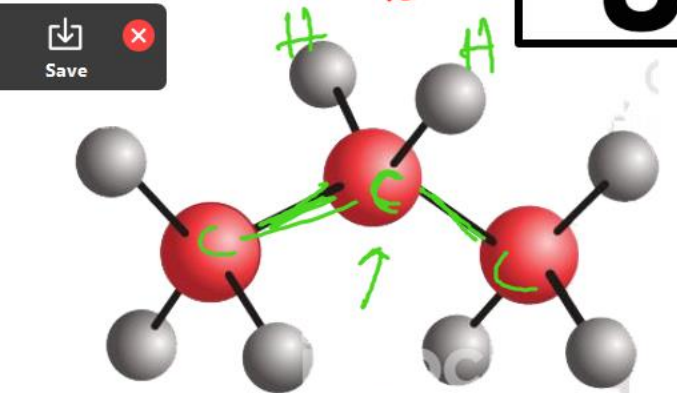
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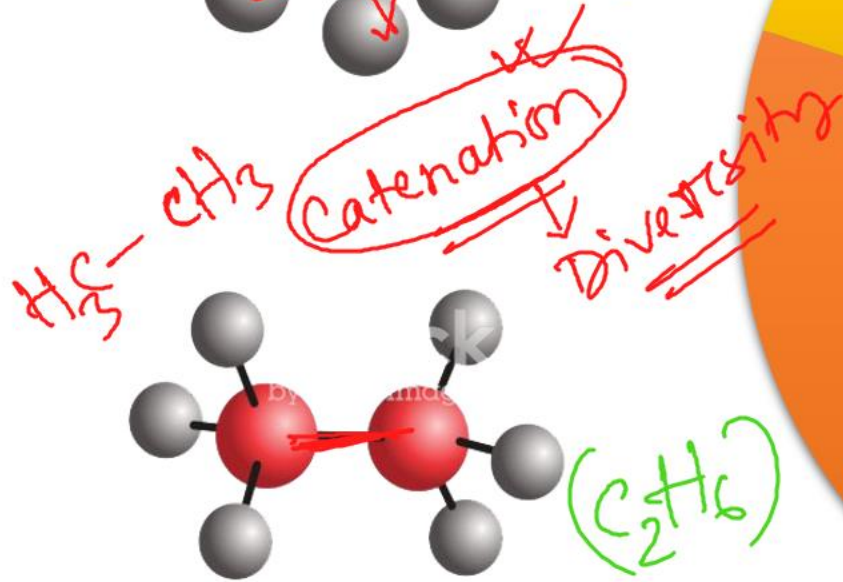
■ Methane ■ Ethane ■ Propane ■ Butane & Isobutane ■ Pentane



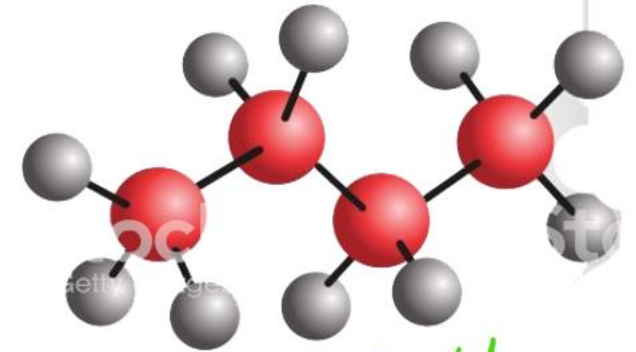
methane  
(CH<sub>4</sub>)



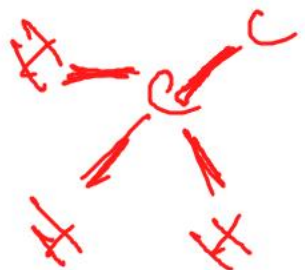
propane (C<sub>3</sub>H<sub>8</sub>)



(C<sub>2</sub>H<sub>6</sub>)



C<sub>4</sub>H<sub>10</sub>  
(Butane)



Catenation

Diversity

(1C)

(2C)

(3C)

(4C)

(5C)



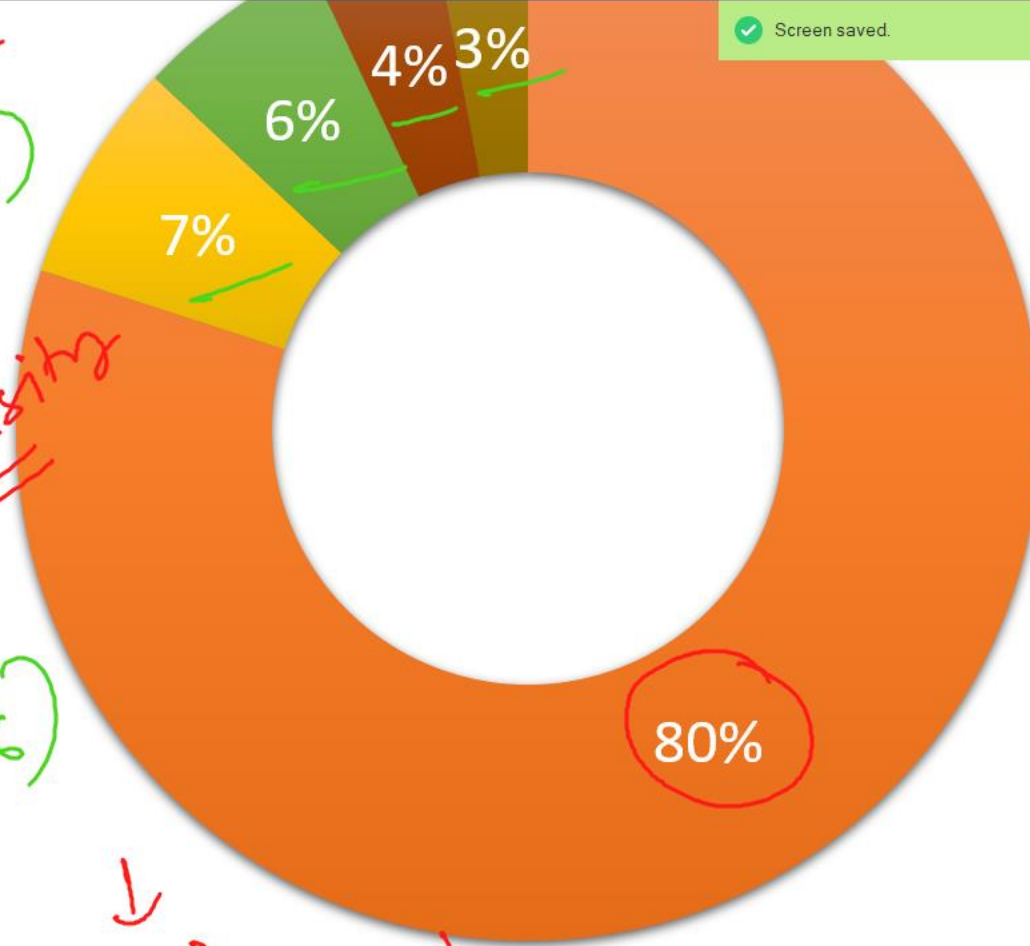
# Natural Gas



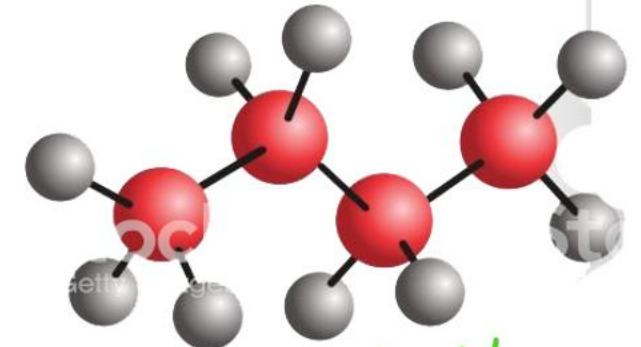
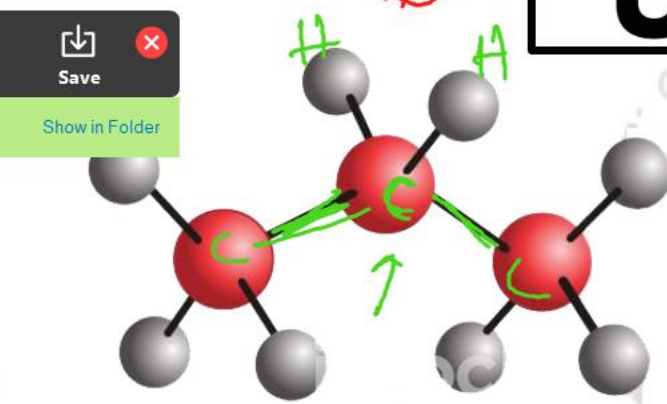
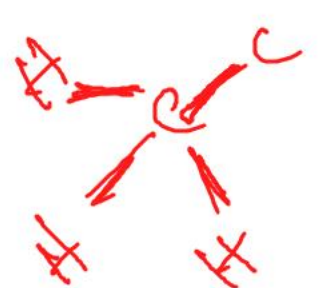
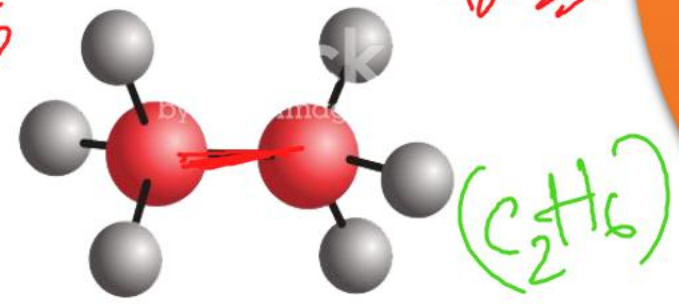
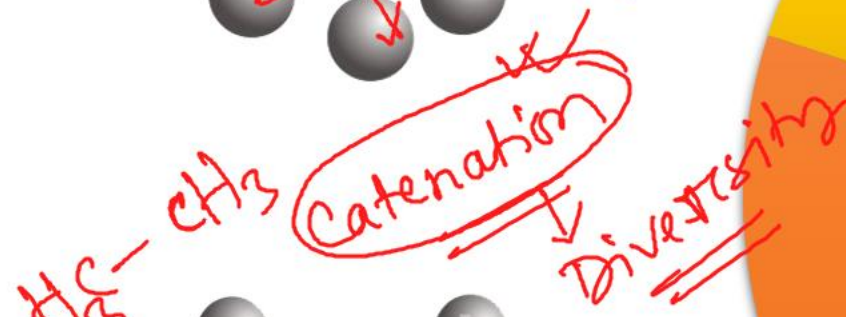
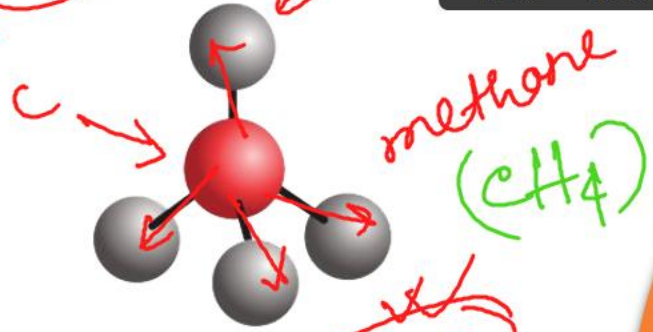
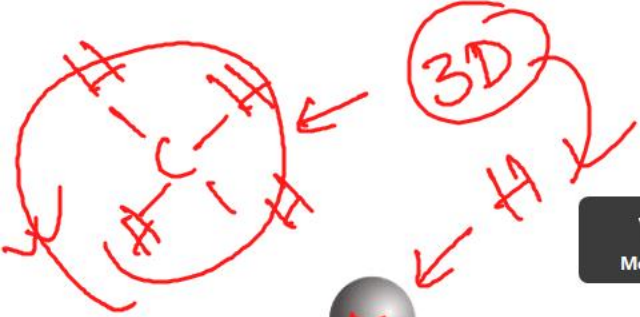
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■ Methane ■ Ethane ■ Propane ■ Butane & Isobutane ■ Pentane





5000 feet

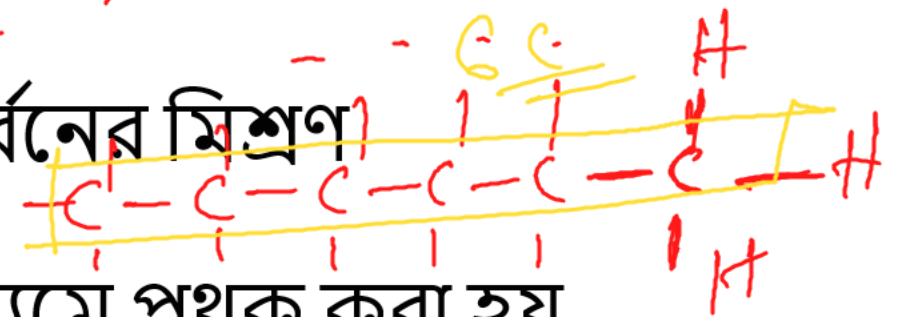
Petroleum oil

Eng. 1 → petrol  
 Eng. 2 → Diesel  
 Eng. 3 → Octane

✓ ৫০০০ ফুট বা তারও গভীরে পাওয়া যায়

✓ Crude Oil / Unprocessed Oil (impurities)  
 L → process → utilize

✓ বিভিন্ন দৈর্ঘ্যের কার্বন শিকলের হাইড্রোকার্বনের মিশ্রণ  
 (catenation):



□ আংশিক পাতনের (Partial Distillation) মাধ্যমে পৃথক করা হয়

Unprocessed Oil → P.D. → processed oil

1. Vaporization (Liq. → Vap.)  
 2. Condensation (Vap. → Liq.)  
 T ↑ (Liq. → Vap.)  
 T ↓ (Vap. → Liq.)

(C' length)  
 ↓  
 Different

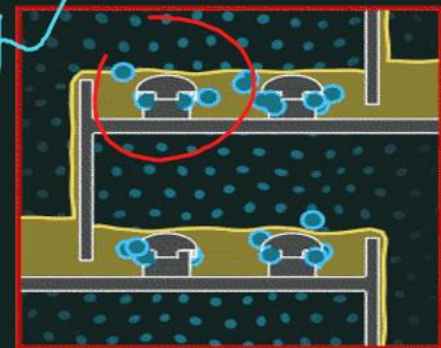


# DISTILLATION

Crude oil contains a variety of **hydrocarbons** that have different boiling points. To separate these compounds, the mixture is heated into a super-hot mixture of

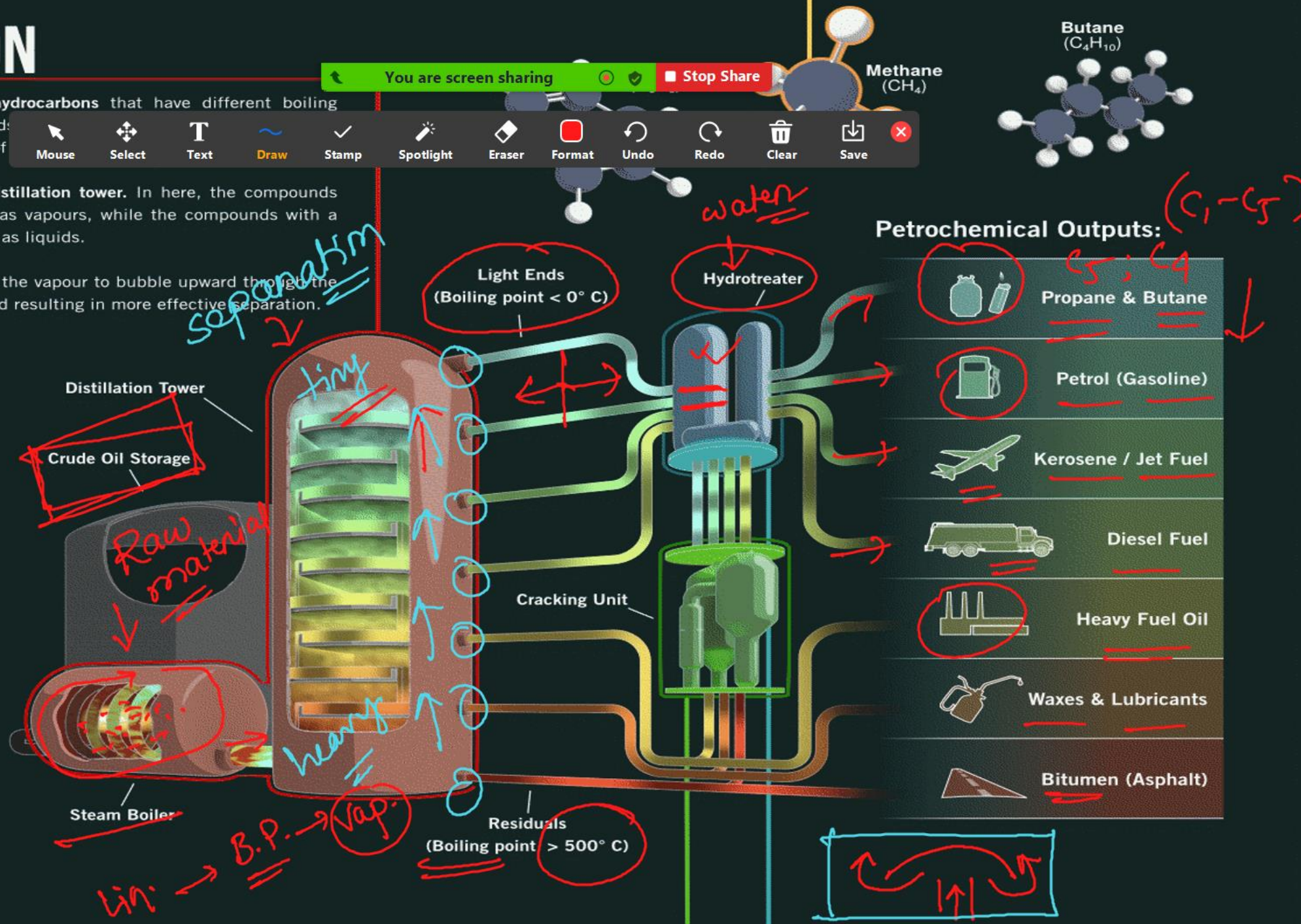
The mixture is then fed into a **distillation tower**. In here, the compounds with a lower boiling point rise up as vapours, while the compounds with a higher boiling point fall downwards as liquids.

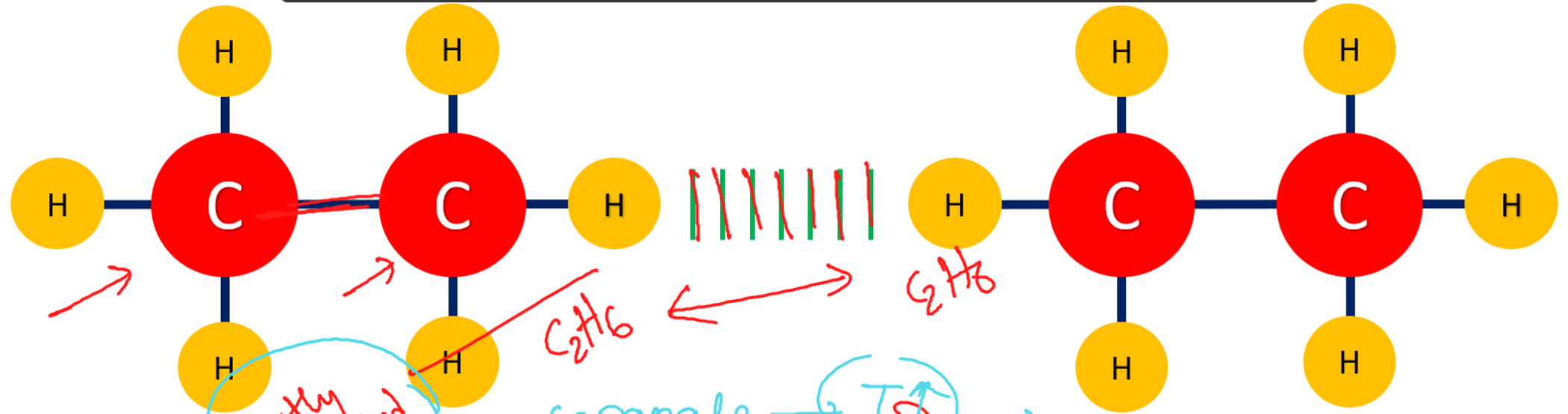
The tower contains trays that allow the vapour to bubble upward through the liquid, helping to exchange heat and resulting in more effective separation.



The distilled products are then piped off from the different levels of the tower. These separated products are called **fractions** or **distillates**.

This process may take place along multiple distillation towers.





IMAF  
 → tightly attached  
 → loosely attached  
 T↓

separate via Temp.  
 T↑  
 (IMAF)

আন্তঃআণবিক আকর্ষণ বল  
 (Inter-Molecular Attraction Force)

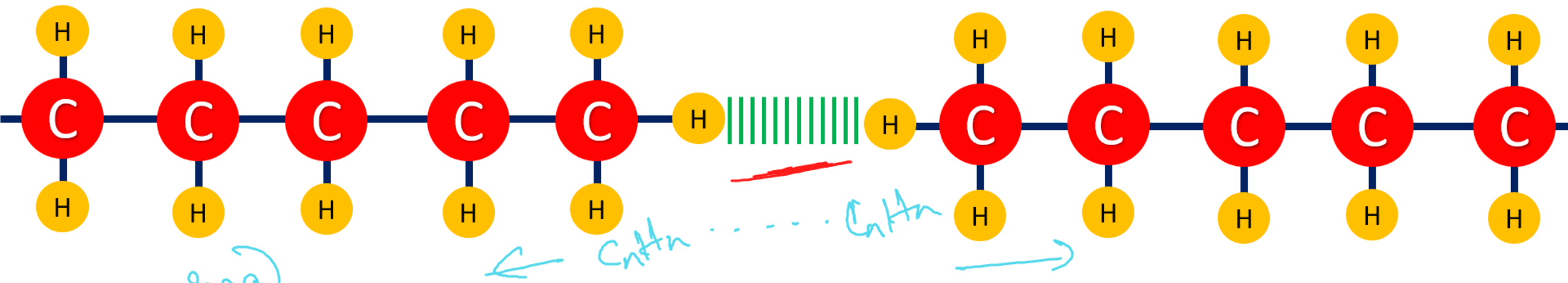
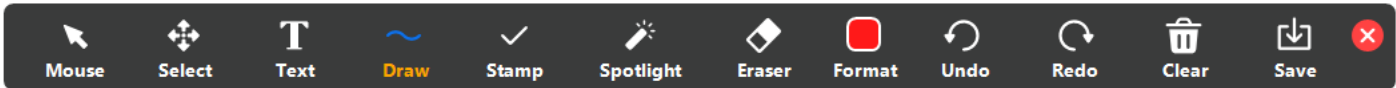
IMAF ↑ ; B.P. ↑  
 " ↓ ; B.P. ↓  
 Relate

স্ফুটনাঙ্ক (Boiling Point)  
 (B.P.)





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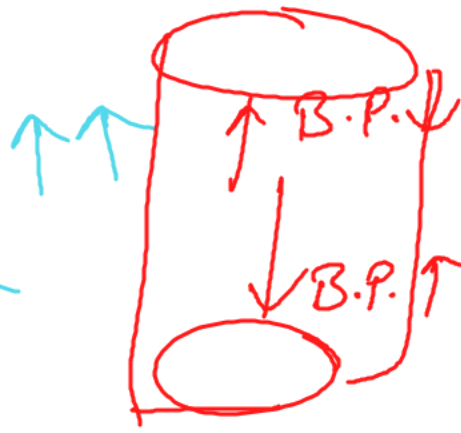


Surface area  
Attraction (more)

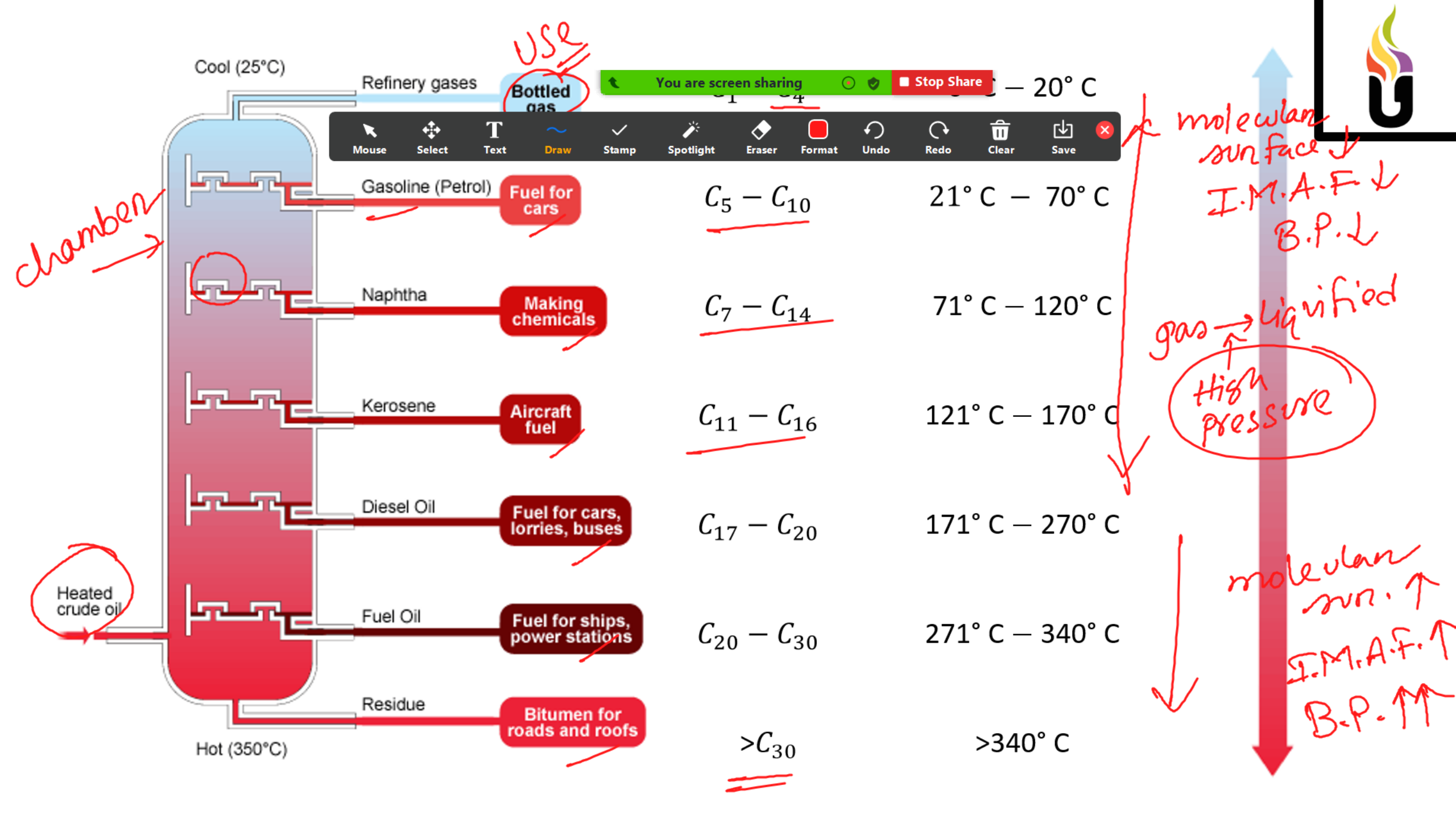
আন্তঃআণবিক আকর্ষণ বল

IMAF

স্ফুটনাঙ্ক B.P.







made of  
(C, H)  
Hydrocarbon

Mute

Start Video

Participants 251

Q&A 77

Polls

New Share

Pause Share

Annotate

Remote Control

More 36

You are screen sharing

Stop Share

Mouse

Select

Text

Draw

Stamp

Spotlight

Eraser

Format

Undo

Redo

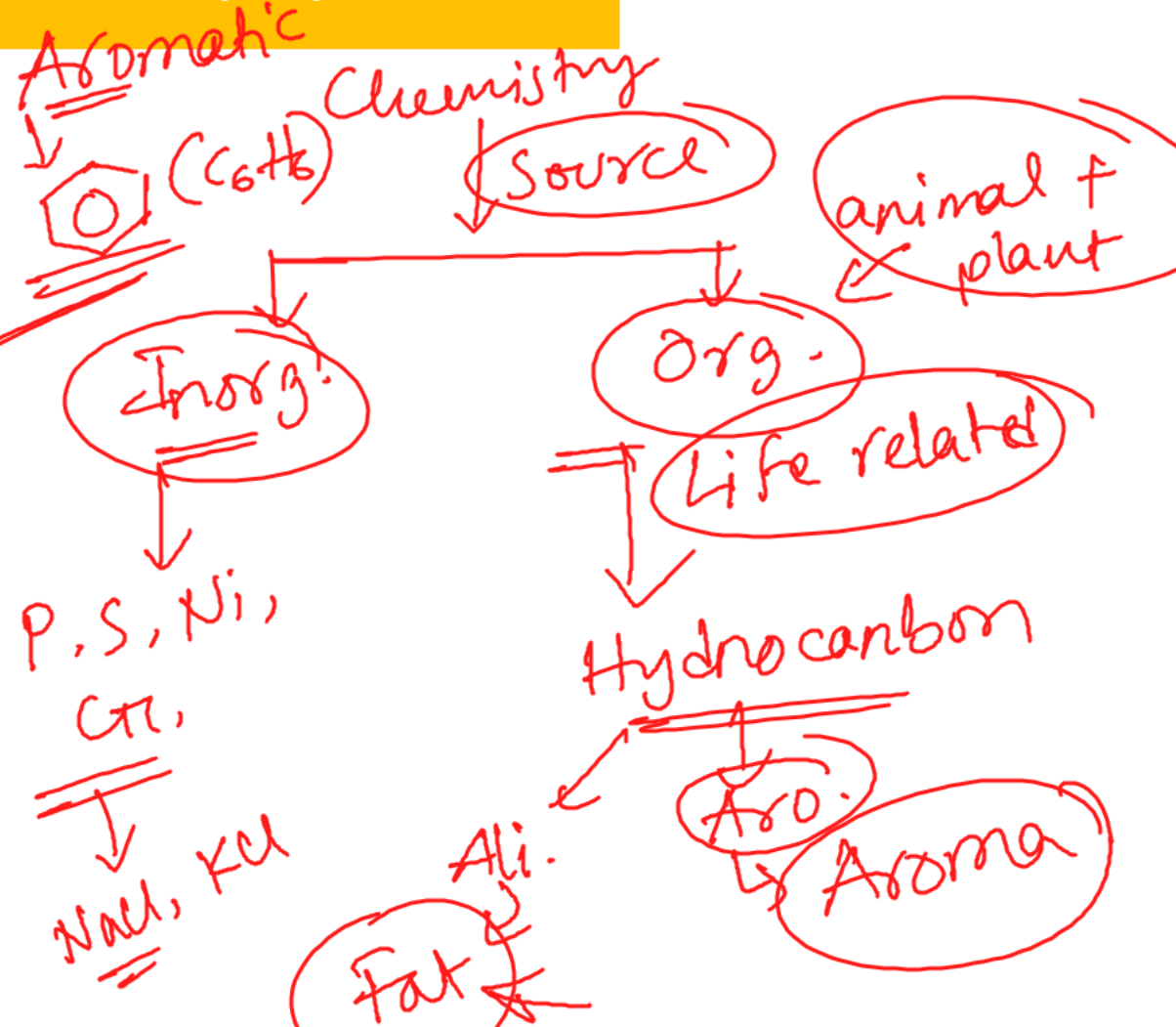
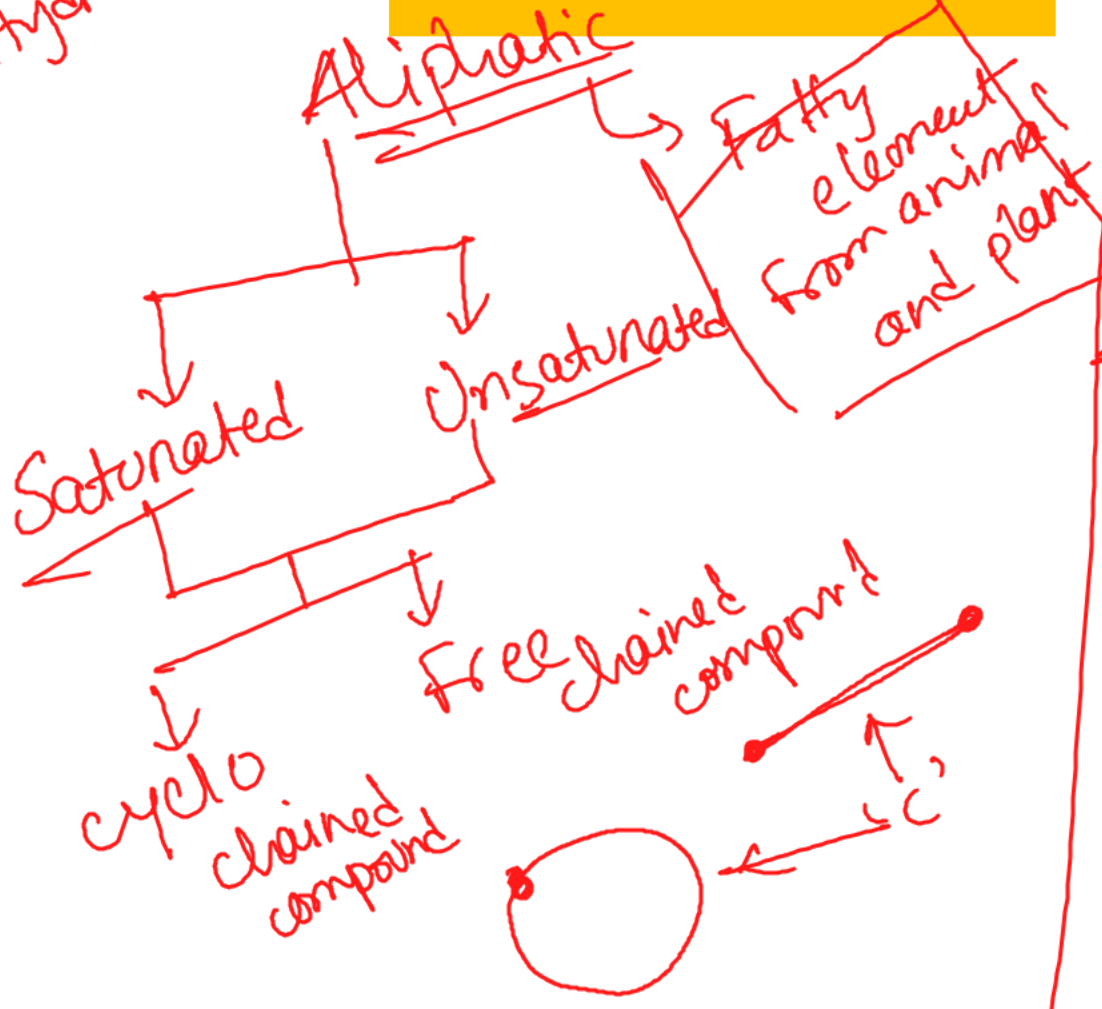
Clear

Save



## অ্যালিফেটিক

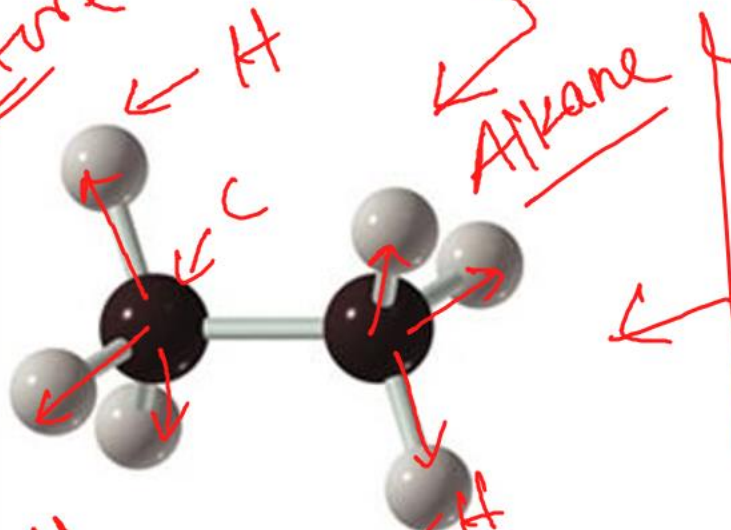
## অ্যারোমেটিক



# সম্পৃক্ত (Saturated) ও অসম্পৃক্ত (Unsaturated) হাইড্রোকার্বন

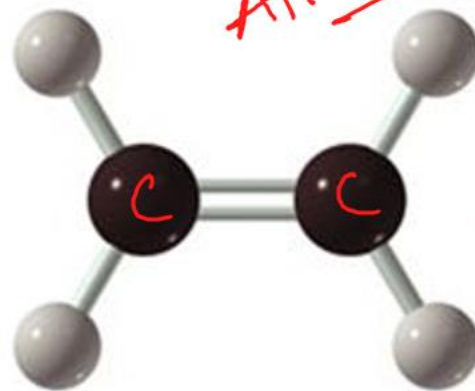


3D  
structure



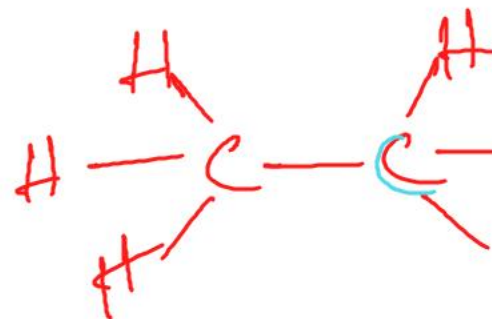
Ethane

Alkene

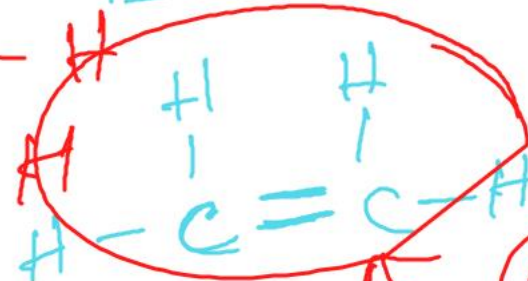


Saturated: Single Bond  
Unsaturated: Double " or Triple "

Alkyne



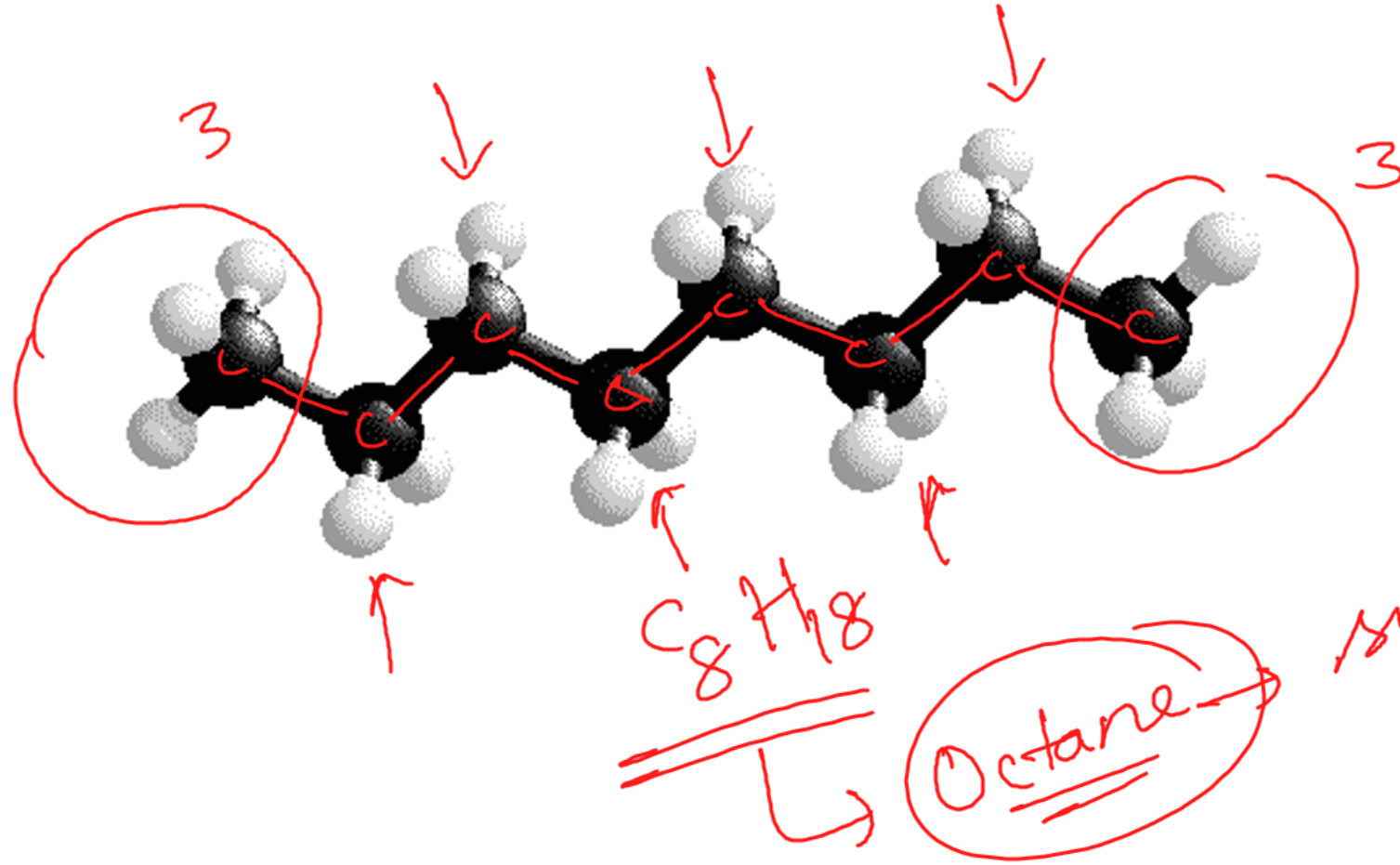
valence  $\rightarrow$  complete







# সম্পৃক্ত (Saturated) হাইড্রোকার্বন





লেগে থাকো সৎভাবে,  
স্বপ্ন জয় তোমারই হবে

ঔদ্যম-উন্মেষ শিক্ষা পরিবার

Thank You