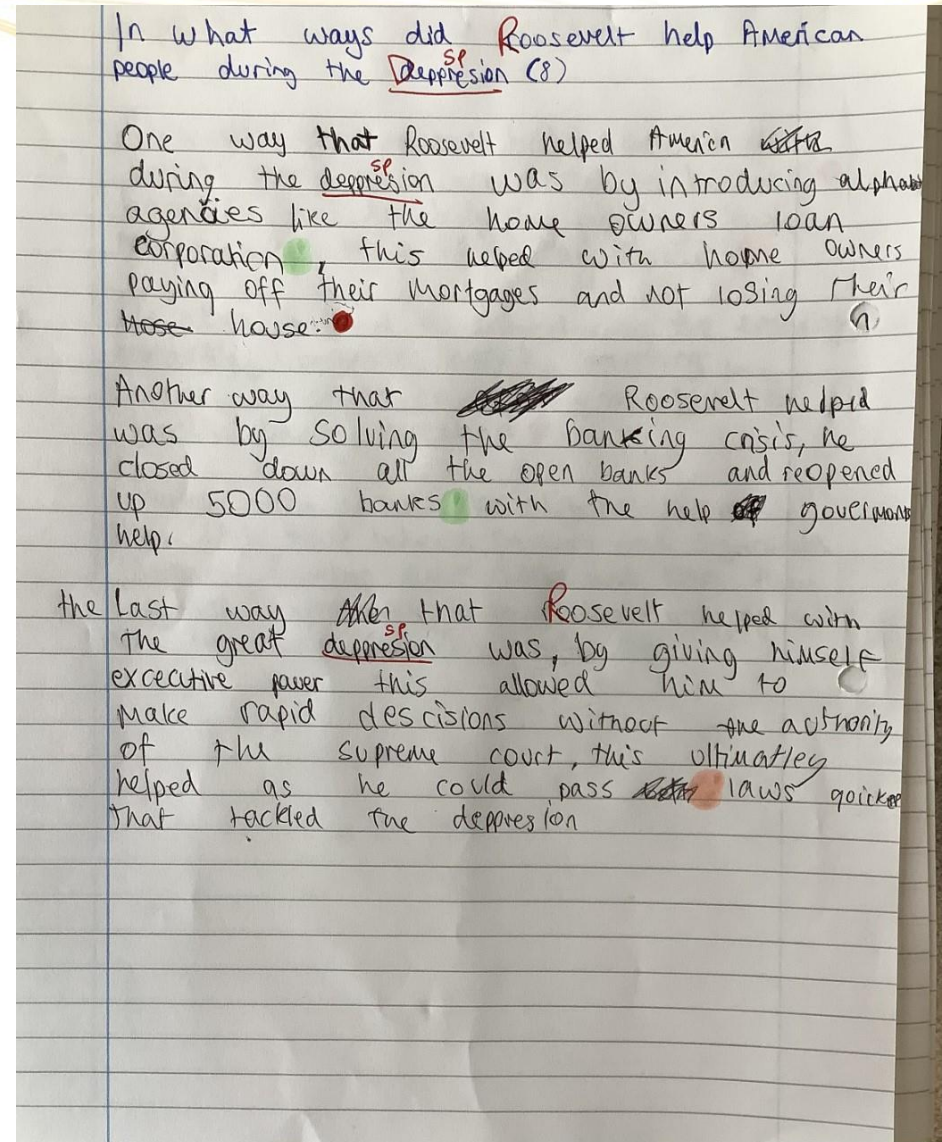


# Identify Mistakes: (Dot marking)

The teacher uses RAG dots to help students to identify their own strengths and areas for development.

- Red- incorrect facts, needs more description and explanation
- Amber- needs explanation in specific detail e.g. statistics, dates, names, examples
- Green- brilliant answer, fully explained, includes statistics



# Identify Mistakes: (Dot marking)

The teacher uses purple dots to help pupils to identify their own mistakes.  
The pupil then acts on this feedback by correcting their work in green.

● = mistake, please correct in green!

**Questions based on the syllabus**

**4.1.1 Basic concepts of organic chemistry**

**Naming and representing the formulae of organic compounds**

- What is a general formula? If given that is  $C_nH_{2n+2}$  that is  $C_nH_{2n+2}$  that is  $C_nH_{2n+2}$  that is  $C_nH_{2n+2}$
- Give the general formula of alkenes  $C_nH_{2n-2}$
- Draw the structural formula of 2-methyl pent-3-ene  $CH_3-CH_2-CH=CH-CH_2-CH_3$
- Draw the displayed formula of E but-2-ene  $CH_3-CH=CH-CH_3$
- Draw the skeletal formula of cyclohexene  $C_6H_{10}$

**Functional groups**

- Define the term homologous series  $\rightarrow$  groups of organic compounds with the same functional group
- Define the term functional group  $\rightarrow$  a group of atoms that determine the chemical reactions of a molecule
- Name the first 3 alkyl groups (R groups) and give their formulae **methyl:  $CH_3$**
- Give an example of an aliphatic compound which is **not** alicyclic
- Give an example of an aliphatic compound which **is** alicyclic
- What is meant by an aromatic compound  $\rightarrow$  a compound containing a benzene ring
- Give the general formula for bromoalkanes and use it to calculate the molecular formula of a bromoalkane with 7 carbons  $C_7H_{15}Br$

**Isomerism**

- Define the term structural isomer  $\rightarrow$  a molecule with the same molecular formula but different structural formula
- Draw and name three structural isomers of butan-1-ol

**Reaction mechanisms**

- Write an equation to explain the homolytic fission of a Br-Br bond  $Br-Br \rightarrow 2Br\cdot$
- Write an equation to explain the heterolytic fission of a F-F bond  $F-F \rightarrow F^- + F^+$
- Define the term radical
- How would you represent a fluorine radical?
- What is shown by a curly arrow?  $\rightarrow$  the movement of electrons
- Draw a HBr molecule and mark on any relevant dipoles

**4.1.2 Alkanes**

**Properties of alkanes**

- What is meant by a saturated hydrocarbon?  $\rightarrow$  a hydrocarbon with only single bonds
- Draw a diagram to show the  $\sigma$  bond in an alkane
- What is the bond angle around each carbon in an alkane?  $109.5^\circ$
- Explain the bond angle around each carbon in an alkane  $\rightarrow$  use electron repulsion theory
- State and explain the trend in boiling point as the alkanes increase in carbon chain length  $\rightarrow$  more bonds to break
- Explain the trend in boiling point between pentane, 2-methyl butane and 2,2-dimethylpropane  $\rightarrow$  the more branched the lower the boiling point as branches mean bonding molecules can't get very close to the other molecules and sigma bonds were best over short distances



● = mistake, please correct in green!

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- Define the term radical  $\rightarrow$  a radical is an atom/molecule with an unpaired electron
- How would you represent a fluorine radical?
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# Identify Mistakes: (Dot marking)

1 Explain the differences between the quotes

Interpretation A says that Herbert Hoover was “operating within his own limitations” whereas interpretation B says that he was given an almost instant large “160 million dollar” tax cut. ✓

Interpretation A says that “armies of the unemployed now camped in makeshift shantytowns” whereas interpretation B says that his “expedite plans for construction and repair had been successful”. ✓

2 One reason the interpretations differ is because of the date, interpretation A was made in 1999 closer to the actual time period and could examine the feel of the time. On the other hand interpretation B was made later in time and could only assess the facts of the time period.   
 Give two well explained reasons why they are different and the arguments should be different from each other

3 One reason interpretation A is convincing when it states that Hoover was “operating within his self imposed limitations”. This is convincing because I know Hoover was slow to combat the depression as he was elected in 1929 but didn’t make and serious attempts until 1931. Another reason interpretation A is convincing is because it says that “armies of the unemployed camped in makeshift shantytowns” this is convincing because I know 8 million were still unemployed by 1931 and the unemployment rate was rising.

One reason I find interpretation B convincing is because it says that his plans for “construction” and “repair were successful” this is convincing because I know that he had started the construction of the Hoover Dam which had given people jobs and tried to help the economy. Another reason that it is convincing is that it says that “the presidents appeal to governors and the private sector” had been “successful” this is convincing because I know that rich people and areas like Maryland and Delaware voted for Hoover I think he 1932 election.

In conclusion I think interpretation A is more convincing as it states that many people were unemployed and Hoover had restricted actions. I know this is true as 8 million were unemployed and it took him multiple years to actually combat the Great Depression.   
 The conclusion should be comparative why you agree with interpretation A and disagree with interpretation B

The teacher uses yellow dots, combined with Whole Class Feedback, to help pupils identify their own areas for development.

The orange text here shows the targets which pupils have been able to write.

## Hoover Interpretation Q Feedback



- Use the 'How to answer sheet' / How to structure Padlet –
- And the whole class feedback below, to identify what you could do to improve.
- Add a comment with your targets/ areas for improvement.
- Make those improvements.

### Whole Class Feedback

Q1	-The comparisons between the interpretations need to be really specific, not generic. -Fully explain the difference rather than just copying out quotes.
Q2	-Your PANDA points must not be too similar. -Ensure that you fully explain WHY the difference in PANDA would make the arguments different.
Q3	-The OK should be really specific and factually detailed. -Your overall conclusion should be comparative – it should explain why you are accepting 1 interpretation but why you are rejecting the other 1.

# Identifying Mistakes: Being the Examiner

Keziah Foukes

A2 Amines, Amino acids, polymers and nitriles End of Topic Test 15 / 37

1 Clear plastic bottles can be made from either addition polymers or condensation polymers. The monomers used to make these polymers are shown below.

a i Use the monomers above to illustrate the difference between addition polymers and condensation polymers. 1

condensation polymers release water molecules whereas addition polymers use water molecules  
 condensation polymers are longer and addition shorter  
 acid and amine acid can react to form condensation polymer  
 single monomer can join together to form addition polymer.

ii Draw the repeat unit in the condensation polymer.

b Bottles made from the condensation polymer above often contain fizzy drinks. However, the polymer allows gas to slowly escape and the fizzy drink goes flat. One solution to this is to add a layer of another polymer, polyvinyl alcohol (PVOH), to reduce the gas leakage. PVOH is manufactured in two stages:

i In the space in the scheme above, draw the repeat unit of the intermediate polymer formed in stage 1. 2

ii Stage 2 involves hydrolysis of the side chain. State the reagent and conditions required for stage 2.

~~heated vigorously under pressure~~  
 reagent = dilute HCl or NaOH

diamine + dicarboxylic acid  
 diol + dicarboxylic acid

$$\begin{array}{c} \text{O} \\ || \\ \text{N} - \text{C} \\ | \\ \text{H} \\ \text{O} \\ || \\ \text{O} - \text{C} \end{array}$$

hydrolysis

methyl  
 NA Ketone + KCN  $\rightarrow$  hydrocyanide +  
 NS halogenalkane + KCN  $\rightarrow$  nitrile + KCN

- Pupils completed test which was marked.
- Each group was given a section of the markscheme and gave feedback on how to improve the answer to that question for whole class
- Pupils used feedback to improve their answers