Researchers in Schools

From chip oil to a plastic bottle

Key Stage 4 Programme

Pupil Name

Coursebook Designed by **Dr Veronica Forcina**

Timetable and Assignment Submission

Timetable – Tutorials

Tutorial	Date	Time	Location
1	09/12/2019	12.00-15.45	Royal West of England Academy
2	14/01/2019	15.00-15.50	BBA - room
3	21/01/2019	15.00-15.50	BBA - room
4	28/01/2019	15.00-15.50	BBA - room
5	04/02/2019	15.00-15.50	BBA - room
6 (Feedback)	25/02/2019	15.00-15.50	BBA - room
7 (Feedback)	03/03/2019	15.00-15.50	BBA - room

Timetable – Homework Assignments

Homework Assignment	Description	Due Date
Tutorial 1	How can we make a chemical process more efficient? the Haber Bosch example write an assay, based on the resource given, including: -how the Haber Bosch process is currently done -how has the Haber Bosch process been optimised to get to the current process (find two ways) -why has the Haber Bosch process been optimised the use of extra resources will be valued	13/12/2019
Tutorial 2	How can we make this process better? given the following reaction explain which variables to investigate to make it work better. sunflower oil + ethylene -----> plastic You will to include: -which catalyst you would choose and why -which experimental restrictions we need to consider and why	17/01/2019

Tutorial 3	Make this reaction better Given the following reaction and reaction conditions, plan a reaction optimisation taking into account: the max pressure and temperature reachable are 80 bar and 110 C. You will need to include: -definition of reaction optimisation -the steps to follow for the optimisation -the reason behind your choices	24/01/2019
Tutorial 4	How do we make use of a reaction mechanism study? Given the following reaction mechanism study outcome, explain what can be done to maximise the production of Drug_526 you will need to include: -definition of reaction mechanism -what are Say25 and Tell54 -which variables need to be changed and why -which experimental restrictions need to be taken into account	31/01/2019
Tutorial 5	The marketing department of the chemistry company ChemIsCool.Org asked you to write a report with recommendations to improve the following process: Mew ------> Bulbasaur reaction information: p = 200 bars; T = 60 °C; catalyst = 150 mg (price = 500 £ per mg); solvent bp = 85 °C; time = 10 hs; yield = 55 % Explain why and how to optimise the reaction and investigate its mechanism; write the essay for a non-scientific audience. You will need to cover the following points: reaction optimisation: -which variables effect the reaction and experimental restrictions (think about the company's equipment -how the process can be made greener reaction mechanism: -definition of reaction mechanism -which instruments you will use to study the reaction mechanism and why	14/02/2019

Assignment Submission – Lateness and Plagiarism

Lateness	
Submission after midnight on 9th August	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

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Course Rationale

Did you know that you could use the chippy oil to make a plastic bottle?
We are going to learn how to do this and more!
In this course you will talk about the magic that happens when you mix two things to make something new!

The Uni Pathways are great opportunity to have a taste of what a university course looks like. Indeed, you will start the course in a university setting where a Doctor (myself) will deliver the first Tutorial and you will have a tour in Bristol University. I am going to tell you a little bit about what I did during my PhD in a total of 7 Tutorials. During this time, you will have the opportunity to ask science related questions in a smaller environment than a standard class (the course comprises six students). Also, you can talk to me about any doubt or curiosity you have about university and I will be happy to help!

We will understand more about chemical reactions and how we can use them in industries to make useful things. You will learn how you can make a reaction better for the planet (we do not need more toxic waste in our air, don't we?) and cheaper for the industry. We will talk about different instruments that scientists use in the laboratories and in the chemical companies to study how molecules interact with each other to make so many wonderful things that we use everyday (like a plastic bottle). I will show you what happens in between the moment we mix two things and the moment we get something new from them!

I am going to guide you to be able to use specific scientific terminology that you have not learnt in your science lessons yet. We will critically approach scientific problems, like trying to transform chippy oil into plastic.

You will be able to improve your scientific thinking and writing throughout the course, so that at the end of it you will be able to write to a chemistry company to give advice on how to make their reactions the best that they can!

Uni Pathways Mark Scheme 2019 – Essay-based assignments

	Skills	1st (70-100)	2:1 (60-69)	2:2 (50-59)	3rd (40-49)	Mark /100
Subject knowledge	Knowledge and understanding	○ All content included and materials used are relevant to the general topic and to the specific question/title ○ Good understanding of all the relevant topics. ○ Technical terms are defined and used accurately throughout ○ Clear justification of how the material and content included is related to the specific issues that are the focus of the assignment	○ Most of the materials used and content included are relevant to the general topic and to the specific question/title ○ Good understanding of most the relevant topics ○ Technical terms are mostly defined and used accurately ○ Adequate justification of how the material used and content included are related to the specific issues that are the focus of the essay	○ Some of the materials used and content included are relevant to the general topic and to the specific question/title ○ Good understanding on some of the relevant topics but occasional confusion on others ○ Technical terms are sometimes used and defined accurately ○ Some justification of how the material used and content included are related to the specific issues that are the focus of the essay	○ The content included and materials used are not applied to the question/title in a relevant manner ○ There is confusion in how understanding of the topics is expressed	
Critical thinking	Research and evidence	○ Includes rich sources of research findings, data, quotations or other sourced material as evidence for the claims/ideas ○ Uses evidence/calculations to support claims/assertions/ideas, consistently clearly and convincingly ○ Evidence of further reading beyond materials provided which were used in an appropriate context	○ Includes adequate sources of research findings, data, quotations or other sourced material as evidence for the claims/ideas ○ Uses evidence/calculations to support claims/assertions/ideas, mostly clearly and convincingly ○ Evidence of further reading beyond materials provided	○ Includes some sources of research findings, data, quotations or other sourced material as evidence for the claims/ ideas ○ Uses evidence/calculations to support claims/assertions/ideas, at times clearly and convincingly ○ Limited evidence of further reading beyond materials provided	○ Inclusion sources and materials is very limited and mostly not attributed ○ Applicable sources are rarely used to support ideas. ○ Data is not used or few appropriate conclusions are drawn from it.	
	Developing an argument	○ A point of view or position in relation to the title or question is consistently clear. The position is developed effectively and consistently throughout the essay ○ Argument is exceptionally well-developed and well-justified ○ Makes links effectively between subjects that have not previously been associated ○ Uses concepts from the tutorials in an unfamiliar context and does so accurately and confidently. ○ Content is analysed effectively to support the argument	○ A point of view or position in relation to the title or question is adequately clear. The position is well-developed in most of the essay ○ Argument is clear and well-developed, and position is justified ○ Some evidence of linking subjects that have not previously been associated ○ Uses some concepts from the tutorials in an unfamiliar context, but not always accurately ○ Analyses content to support the argument	○ A point of view or position in relation to the title or question is somewhat clear. The position is well-developed in parts of the essay ○ Argument is clear but not well-developed ○ Limited evidence of linking subjects that have not previously been associated ○ Limited use of concepts from the tutorials in other contexts ○ Uses some analysis of content to support the argument	○ There is not a clear point of view or position taken and sometimes the argument is not clearly established	

	Critical evaluation	○ Moves beyond description to an assessment of the value or significance of what is described ○ Evaluative points are consistently explicit/systematic/reasoned/justified ○ Effectively critiques the reliability of sources provided	○ Mostly description but some assessment of the value or significance of what is described ○ Evaluative points are mostly explicit/systematic/reasoned/justified ○ Some evidence of critiques on the reliability of sources provided	○ Describes with minimal assessment of the value or significance of what is described ○ Evaluative points are at times explicit/systematic/reasoned/justified ○ Limited evidence of critiques on the reliability of sources provided	○ The work is descriptive in nature and there is a lack of critical engagement in the value of sources	
Written communication	Structure and presentation	○ Ideas are presented in paragraphs and arranged in a logical structure that is appropriate for the assignment ○ The introduction clearly outlines how the essay/report will deal with the issues ○ The conclusion summarises all the main points clearly and concisely ○ All sources are referenced correctly in an agreed format	○ Ideas are presented in paragraphs and arranged in a structure that is mostly appropriate for the assignment ○ The introduction adequately describes how the essay/report will deal with the issues ○ The conclusion summarises most of the main points clearly ○ Most sources are referenced correctly in an agreed format	○ Ideas are presented in paragraphs and arranged in a structure ○ The introduction mentions how the essay/report will deal with the issues ○ The conclusion summarises some of the main points clearly ○ Some sources are referenced correctly in the agreed format with occasional errors	○ Ideas are presented in paragraphs but there is a lack of structure in how the work is presented ○ The work lacks an introduction that establishes the scope of the question ○ The work lacks a conclusion that summarise the main points raised ○ Work is not referenced accurately	
	Language and style	○ No spelling, grammar or punctuation errors ○ Writing style consistently clear, tone appropriate and easy to follow ○ Accurate and consistent use of technical language and vocabulary	○ Minimal spelling, grammar or punctuation errors ○ Writing style mostly clear, tone appropriate and easy to follow ○ Some attempts of using technical language and vocab alary, but not always accurate	○ Some spelling, grammar or punctuation errors ○ Writing style moderately clear, tone appropriate and easy to follow ○ Use of simple language and vocabulary effectively but struggles to use technical language	○ There are a significant number of spelling, grammar and punctuation errors ○ Use of simple language and vocabulary effectively but a lack of technical language	
Overall Mark (average of the 6 marks from the criteria above)						

Baseline Assignment (essay based): Pupil Feedback Report

Name of Pupil	
Name of School	Bristol Brunel Academy
Name of RIS teacher	Veronica Forcina
Title of Assignment	How can we make a chemical process more efficient? the Haber Bosch example

How your assignment is graded:

Grade	Marks	What this means
1st	70+	Performing to an excellent standard at A-level
2:1	60-69	Performing to a good standard at A-level
2:2	50-59	Performing to an excellent standard at GCSE
3rd	40-49	Performing to a good standard at GCSE
Working towards a pass	0-39	Performing below a good standard at GCSE
Did not submit	DNS	No assignment received by The Brilliant Club

Lateness	
Any lateness	10 marks deducted
Plagiarism	
Some plagiarism	10 marks deducted
Moderate plagiarism	20 marks deducted
Extreme plagiarism	Automatic fail

Marks

OVERALL MARK / 100		FINAL MARK / 100 (including any deductions)	
DEDUCTED MARKS		FINAL GRADE	

If marks have been deducted (e.g. late submission, plagiarism) the teacher should give an explanation in this section:

Mark Breakdown and Feedback

Knowledge and Understanding		Research and Evidence	
	mark		*mark*
Developing an Argument		**Critical Evaluation**	
	mark		*mark*
Structure and Presentation		**Language and Style**	
	mark		*mark*

Final Assignment (essay based): Pupil Feedback Report

Name of Pupil	
Name of School	Bristol Brunel Academy
Name of RIS teacher	Veronica Forcina
Title of Assignment	The marketing department of the chemistry company ChemIsCool.Org asked you to write a report with recommendations to improve an existing process

How your assignment is graded:

Grade	Marks	What this means
1st	70+	Performing to an excellent standard at A-level
2:1	60-69	Performing to a good standard at A-level
2:2	50-59	Performing to an excellent standard at GCSE
3rd	40-49	Performing to a good standard at GCSE
Working towards a pass	0-39	Performing below a good standard at GCSE
Did not submit	DNS	No assignment received by The Brilliant Club

Lateness	
Any lateness	10 marks deducted
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Extreme plagiarism	Automatic fail

Marks

OVERALL MARK / 100		FINAL MARK / 100 (including any deductions)	
DEDUCTED MARKS		FINAL GRADE	

If marks have been deducted (e.g. late submission, plagiarism) the teacher should give an explanation in this section:

Mark Breakdown and Feedback

Knowledge and Understanding		Research and Evidence	
	mark		*mark*
Developing an Argument		**Critical Evaluation**	
	mark		*mark*
Structure and Presentation		**Language and Style**	
	mark		*mark*

Success Criteria – Baseline assignment

The Brilliant Club Mark Scheme Skills	Examples of success criteria to include in the baseline assessment, final assignment and homework guidance
Knowledge and understanding	Include content that is relevant to the topic and the specific assignment/homework title or question. Include key words from the glossary and demonstrate that you understand them by explaining what they mean and how they relate to the topic.
Research and evidence	Include research findings from a wide range of sources. As well as using the sources provided, you should be discovering some sources yourself from the independent work that you do outside tutorials.
Developing an argument	Give reasons and evidence to back up the points that you make. You might find the PEE structure helpful: • Point – make the key point clear • Evidence – explain the evidence for the point • Explanation – explain why your point is relevant and important Make links to topics you have covered during tutorials as well as some topics that you have not discussed during tutorials.
Critical evaluation	Include evaluation of what is being described and provide clear justification and reasoning.
Structure and presentation	Organise your ideas in paragraphs with a logical structure Include an introduction that clearly outlines what the assignment will contain. Include a conclusion that summarises all the key points clearly. Make sure that you have referenced everything correctly
Language and style	Make sure your spelling, grammar and punctuation are accurate. Use a formal style of writing that is appropriate for an academic essay.

Subject Vocabulary

Word	Definition	In a sentence
catalyst	molecule that makes a reaction quicker	An iron catalyst is used to produce ammonia (a cleaner).
feedstock	raw material in a process to produce something different	Crude oil is a feedstock to produce gasoline.
heterogeneous	one thing that does not mix well with another one	Oil and water are an heterogeneous mixture.
homogeneous	one thing that does mix well with another one	
yield	how much products a reaction made	If a reaction makes a large amount of product its yield is a very high number.
reaction	when molecules interact to make something new	The process to form table salt from hydrochloric acid and sodium hydroxide is a reaction.
reactants	the starting materials in a reaction	Hydrochloric acid and sodium hydroxide are reactants in the reaction to generate sodium chloride.
products	the ending materials in a reaction	
intermediates	a molecule formed from the reactants and it is going to react further	If making a cake was a reaction, the cake mixture before baking would be the intermediate.
reaction mechanism	steps that happen during a reaction	If making a cake was a reaction, all the ingredients adding and mixing would be the reaction mechanism.
reaction optimisation	changing the variables of a reaction to make it work as well as possible	If making a cake was a reaction, the different recipes to make the best testing cake would be the reaction optimization.

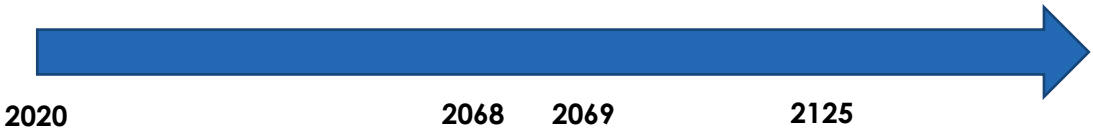
Tutorial 1 – Renewable resources in industry

What is the Purpose of Tutorial 1?

- Define and give examples of renewable resources
- Basic understanding of reaction optimisation and reaction mechanism
- Define and recall key words used in the course

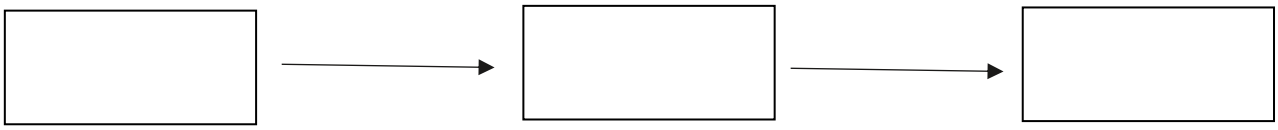
Starter:

In pairs put the cards representing different resources in the right place on the timeline.



Reaction mechanism:

After watching the video fill the blank boxes in the diagram below using the following words: intermediate, products, reactants.



Notes:

Let's talk the same language!

Definitions Bingo: tick the words that match the definitions said.

catalyst	protein	heterogeneous	reactants
cell	homogeneous	raw materials	reaction optimisation
yield	amino acids	feedstock	products

Write the right definitions below:

Extension task:
Explain how reaction optimisation could be useful in industries.

Learning check-point:
Choose which statement is correct by circling the right answer and give an explanation for the wrong answers (in the space below):
A) yield is the amount of products made in a reaction
B) yield depends on the amount of reactants at the beginning of the reaction
C) yield depends just on the amount of products made in a reaction

What is important for an industry?

Sort the cards given in order of importance for an industrial process:

very important

least important

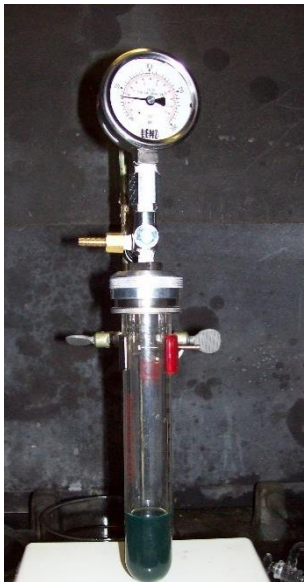
Baseline assignment title (300-500 words):
How can we make a chemical process more efficient? The Haber Bosch example

Baseline assignment instructions:
write an assay, based on the resource given, including:
-how the Haber Bosch process is currently done
-how has the Haber Bosch process been optimised to get to the current process (find two ways)
-why has the Haber Bosch process been optimised
inclusion of extra resources will be valued

Success Criteria – Baseline assignment

The Brilliant Club Mark Scheme Skills	Examples of success criteria to include in the baseline assessment, final assignment and homework guidance
Knowledge and understanding	Include content that is relevant to the topic and the specific assignment/homework title or question. Include key words from the glossary and demonstrate that you understand them by explaining what they mean and how they relate to the topic.
Research and evidence	Include research findings from a wide range of sources. As well as using the sources provided, you should be discovering some sources yourself from the independent work that you do outside tutorials.
Developing an argument	Give reasons and evidence to back up the points that you make. You might find the PEE structure helpful: • Point – make the key point clear • Evidence – explain the evidence for the point • Explanation – explain why your point is relevant and important Make links to topics you have covered during tutorials as well as some topics that you have not discussed during tutorials.
Critical evaluation	Include evaluation of what is being described and provide clear justification and reasoning.
Structure and presentation	Organise your ideas in paragraphs with a logical structure Include an introduction that clearly outlines what the assignment will contain. Include a conclusion that summarises all the key points clearly. Make sure that you have referenced everything correctly
Language and style	Make sure your spelling, grammar and punctuation are accurate. Use a formal style of writing that is appropriate for an academic essay.

Tutorial 2 – How do we practically do a reaction?



What is the Purpose of Tutorial 2?

- Describe the main characteristic of a good catalyst
- Identify the variables affecting the reaction
- Explain how the reaction parameters are linked to experimental restrictions

Starter:
kahoot! quiz

Write in the space below the definitions that you found difficult to recall:

What does make a good catalyst?

In pairs pick the cards with the good catalyst characteristics;
share the answers with the class and write down your notes below:

Notes:

Extension task:
Write down any catalyst you already know

What does influence a reaction?

List the variables that can affect the following reaction outcome:

Mew ------> Bulbasaur

Learning check-point: fill the blanks in the following text with the words below
catalyst, efficient, handle, speeds up, little, beginning, non-toxic, end, cost, reaction.

A _____ is a molecule that _____ a reaction and it is the same at the _____ and at the _____ of the _____. When deciding which catalyst to choose for a reaction is important to take into account the catalyst's _____. In addition, the amount of catalyst needed in the reaction should ideally be _____so we do prefer to use an _____ catalyst. As for any other chemical substance we do always prefer to handle a _____ material. The easiest the catalyst is to _____ the less complicated the reaction set-up is going to be.

How do we do a reaction in practice?

Link the variables on the right column to the experimental restrictions on the left column.

variables	**experimental restrictions**
reaction time	concentration in the reaction mixture
pressure	miscibility
temperature	none
catalyst amount	max value reachable by the equipment; solvent bp
solvent	max value reachable by the equipment; solvent bp

Homework title:
How can we make this process better?

Homework instructions: given the following reaction explain which variables to investigate to make it work better.

You will need to include:

-which catalyst you would choose and why
-which experimental restrictions we need to consider and why

Tutorial 3 – Reaction optimisation

What is the Purpose of Tutorial 3?

- Define the desirable reaction outcomes
- Evaluate how the change of variables are linked to the reaction outcomes
- Describe how to plan a reaction optimization

Starter:
Write below the pros and cons of the industrial processes showed on the board; then in pairs explain to your partner the reasons of your decisions.

pros	cons

Reaction variables and reaction outcomes:

Answer to the following questions:

(1) What does happen to the yield if the pressure is increased?

(2) What does happen to the reaction cost and the yield if the temperature is increased?

(3) Which is the outcome if the reaction time is increased?

(4) Which information can you get if you perform an experiment changing all the variables at the same time?

Learning check-point:
Circle the correct statement and give an explanation for your choice in the space below:

A) In order to improve the yield of a reaction it is sufficient to change the temperature and the pressure of the reaction.
B) If all the variables of a reaction are changed at the same time no information on how the process can be improved will be gained.
C) Increasing the amount of catalyst used in a reaction lowers the reaction cost.

How do we plan a reaction optimisation?
In pairs fill the blanks for the reaction optimisation steps below:

step 1: _____
step 2: _____
step 3: _____
step 4: _____
step 5: _____

Homework title:
Make this reaction better

Homework instructions:

Given the following reaction and reaction conditions, plan a reaction optimisation taking into account: the max pressure and temperature reachable are 80 bar and 110 °C.

Chip oil ------> Plastic
yield = 48 %

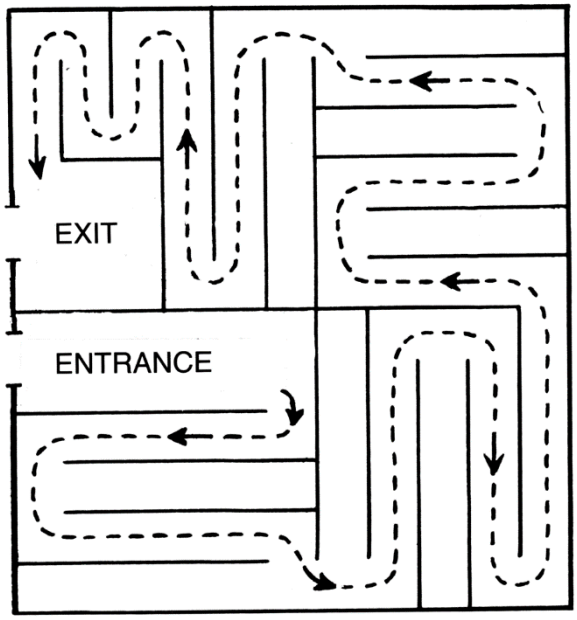
You will need to include:

-definition of reaction optimisation

-the steps to follow for the optimisation

-the reason behind your choices

Tutorial 4 – Reaction mechanism



What is the Purpose of Tutorial 4?

- Define the concept of reaction mechanism
- Describe which information you can get from a mechanistic study

Starter:
Compose the pieces of lego as you wish and write down the steps you went through below:

step 1: _____
step 2: _____
step 3: _____
step 4: _____

Reaction mechanism definition:

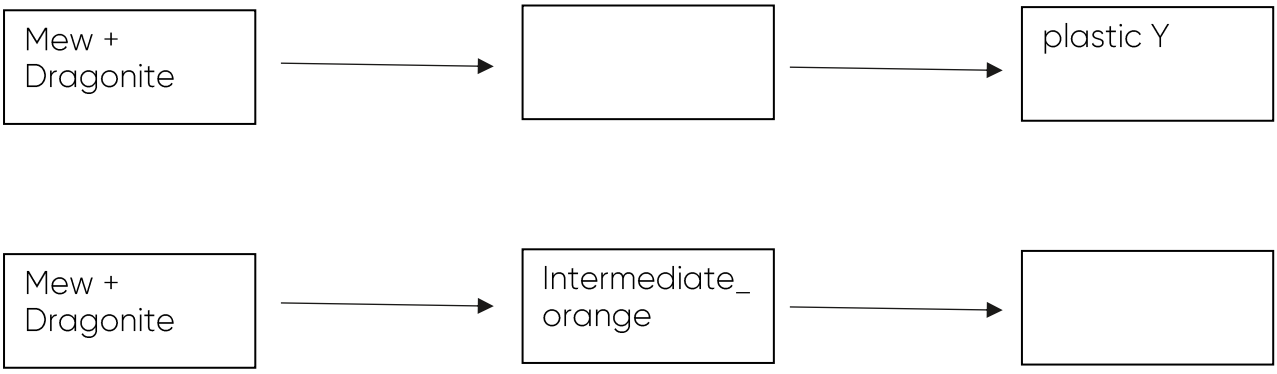
Write on a post-it what a reaction mechanism is

Notes:

_____
_____
_____
_____
_____
_____
_____

What is happening during the reaction?

Fill the blank boxes in the reaction mechanism examples below:



Learning check-point:
write a definition for reaction intermediate

Can a reaction mechanism study help us?

Given the reaction mechanism study outcome, in pairs write on your workbook what can be done to maximise the production of Plastic X.

Reaction mechanism study outcome: after the reaction mechanism study we know that intermediate_orange is favoured when Mew and Dragonite react very closely.

Homework title:
How do we make use of a reaction mechanism study?

Homework instructions:
Given the following reaction mechanism study outcome, explain what can be done to maximise the production of Drug_526

Mal + Trilly-----> Drug_256+ Drug_525

reaction mechanism study:
Mal + Trilly-----> Say25----> Drug_256
Mal + Trilly-----> Tell54----> Drug_525
Say25 is favoured when Mal and Trilly are in a very diluted solution.

you will need to include:
-definition of reaction mechanism
-what are Say25 and Tell54
-which variables need to be changed and why
-which experimental restrictions need to be taken into account

Tutorial 5 – How can we study reaction mechanisms?

What is the Purpose of Tutorial 5?

- Describe one method to study a reaction mechanism
- Explain the link between mechanistic study and reaction optimisation

Starter:

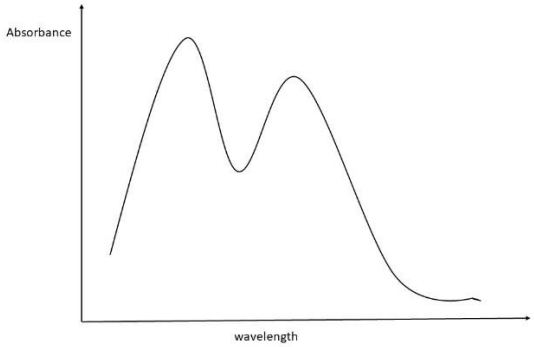
Quiz on the reaction mechanism key concepts

Write down what you found more difficult to understand about reaction mechanism:

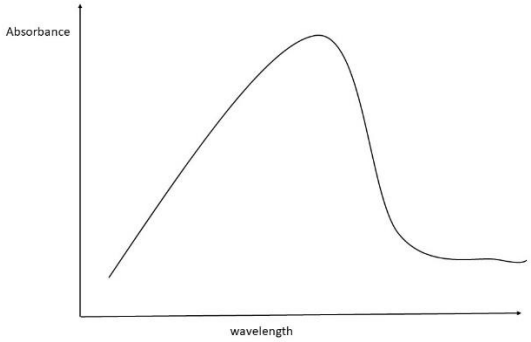
What can we learn from a UV spectrum?

Write in the boxes which is the UV spectrum for the reactants, the products and the intermediate.

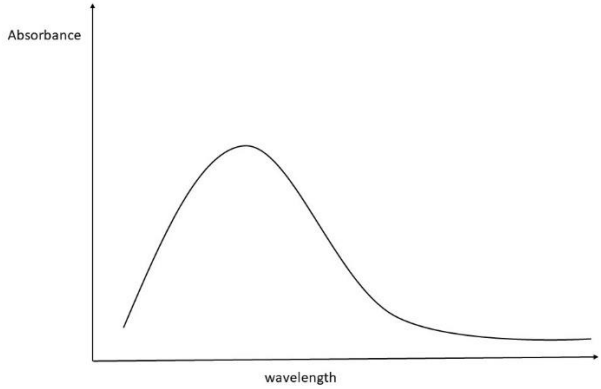
Reaction time zero:



Reaction time after 15 minutes:



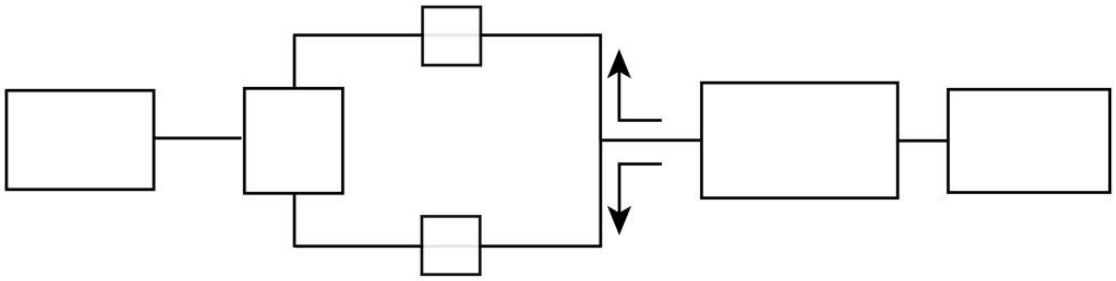
End of the reaction:



Learning check-point:
Why do we use UV spectroscopy? Explain in your own words below.

How does a UV spectrometer look like?

Fill the blank boxes on the different part of an UV spectrometer.



Notes

Final assignment title (2500 words):

The marketing department of the chemistry company ChemIsCool.Org asked you to write a report with recommendations to improve the following process:

Chip oil ------> Plastic
reaction information: p = 200 bars; T = 60 °C; catalyst = 150 mg (price = 500 £ per mg); solvent bp = 85 °C; time = 10 hs; yield = 55 %

Final assignment instructions:

Explain why and how to optimise the reaction and investigate its mechanism; write the essay for a non-scientific audience.

You will need to cover the following points:

reaction optimisation:

-which variables effect the reaction and experimental restrictions (think about the company's equipment

- how the process can be made greener

reaction mechanism:

-definition of reaction mechanism
-which instruments you will use to study the reaction mechanism and why

Success Criteria – Final assignment

The Brilliant Club Mark Scheme Skills	Examples of success criteria to include in the baseline assessment, final assignment and homework guidance
Knowledge and understanding	Include content that is relevant to the topic and the specific assignment/homework title or question. Include key words from the glossary and demonstrate that you understand them by explaining what they mean and how they relate to the topic.
Research and evidence	Include research findings from a wide range of sources. As well as using the sources provided, you should be discovering some sources yourself from the independent work that you do outside tutorials.
Developing an argument	Give reasons and evidence to back up the points that you make. You might find the PEE structure helpful: • Point – make the key point clear • Evidence – explain the evidence for the point • Explanation – explain why your point is relevant and important Make links to topics you have covered during tutorials as well as some topics that you have not discussed during tutorials.
Critical evaluation	Include evaluation of what is being described and provide clear justification and reasoning.
Structure and presentation	Organise your ideas in paragraphs with a logical structure Include an introduction that clearly outlines what the assignment will contain. Include a conclusion that summarises all the key points clearly. Make sure that you have referenced everything correctly
Language and style	Make sure your spelling, grammar and punctuation are accurate. Use a formal style of writing that is appropriate for an academic essay.

Tutorial 6 – Feedback tutorial

What is the Purpose of Tutorial 6?

- To receive feedback on your final assignment
- To respond to the feedback from your Uni Pathways teacher
- To write targets for improvement on your final assignment

Final assignment feedback from your Uni Pathways Teacher

(Remember to look at the mark scheme to help you understand what you have done well so far, and how you can do even better in your final assignment)

Here are three things that my Uni Pathways Teacher thought I did well in my draft assignment
•   •   •

Here are three things that my Uni Pathways Teacher thinks that I could do to get a higher mark in my final assignment
•   •   •

Tasks from my Uni Pathways Teacher to do during the feedback tutorial to help me improve
•   •   •
My response:

Actions I will take to improve my final assignment after this tutorial…
•   •   •

Hand in date for my final assignment:	

Tutorial 7 – Final tutorial

What is the Purpose of Tutorial 7?

- To receive feedback and a grade on your final assignment.
- To reflect on the programme including what you enjoyed and what was challenging.
- To ask any questions you may have about university.

Final assignment feedback from my Uni Pathways Teacher

Final mark:	University style grade:
Feedback: Here are three things that my Uni Pathways teacher thought I did well in my final assignment • • •	

Here are three things that my Uni Pathways teacher thinks I should remember for when I am doing this kind of study in the future
• • •

University

What questions do you still have about University after taking part in Uni Pathways?
•   •   •

Reflecting on Uni Pathways

What did you most enjoy about Uni Pathways?
•   •   •

What did you find challenging about the programme?	How did you overcome these challenges?
• • •	• • •

Appendix 1 – Referencing correctly

When you get to university, you will need to include references in the assignments that you write, so we would like you to start getting into the habit of referencing in your Brilliant Club assignment. This is really important, because it will help you to avoid plagiarism. Plagiarism is when you take someone else's work or ideas and pass them off as your own. Whether plagiarism is deliberate or accidental, the consequences can be severe. In order to avoid losing marks in your final assignment, or even failing, you must be careful to reference your sources correctly.

What is a reference?

A reference is just a note in your assignment which says if you have referred to or been influenced by another source such as book, website or article. For example, if you use the internet to research a particular subject, and you want to include a specific piece of information from this website, you will need to reference it.

Why should I reference?

Referencing is important in your work for the following reasons:

- It gives credit to the authors of any sources you have referred to or been influenced by.
- It supports the arguments you make in your assignments.
- It demonstrates the variety of sources you have used.
- It helps to prevent you losing marks, or failing, due to plagiarism.

When should I use a reference?

You should use a reference when you:

- Quote directly from another source.
- Summarise or rephrase another piece of work.
- Include a specific statistic or fact from a source.

How do I reference?

There are a number of different ways of referencing, and these often vary depending on what subject you are studying. The most important to thing is to be consistent. This means that you need to stick to the same system throughout your whole assignment. Here is a basic system of referencing that you can use, which consists of the following two parts:

1. **A marker in your assignment**: After you have used a reference in your assignment (you have read something and included it in your work as a quote, or re-written it your own words) you should mark this is in your text with a number, e.g. [1]. The next time you use a reference you should use the next number, e.g. [2].
2. **Bibliography**: This is just a list of the references you have used in your assignment. In the bibliography, you list your references by the numbers you have used, and include as much information as you have about the reference. The list below gives what should be included for different sources.

    a. **Websites** – Author (if possible), title of the web page, website address, [date you accessed it, in square brackets].

    E.g. Dan Snow, 'How did so many soldiers survive the trenches?', http://www.bbc.co.uk/guides/z3kgjxs#zg2dtfr [11 July 2014].

    b. **Books** – Author, date published, title of book (in italics), pages where the information came from.

    E.g. S. Dubner and S. Levitt, (2006) *Freakonomics*, 7-9.

    c. **Articles** – Author, 'title of the article' (with quotation marks), *where the article comes from* (newspaper, journal etc.), date of the article.

    E.g. Maev Kennedy, 'The lights to go out across the UK to mark First World War's centenary', Guardian, 10 July 2014.

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