### Research Based Curricula

Japanese Knotweed: The Misunderstood Menace Key Stage 5 Biochemistry Final Reflections + Uni Skills and Guidance



## Final Reflection



Topic Japanese knotweed in the UK

Objectives Japanese knotweed is an interesting plant in its own right; it can help the transformation of barren volcanic landscapes into lush forests filled with life, it can send out chemicals to change its environment, it can reproduce by itself using its rhizome system and grow super-fast.

In the UK, a lack of natural predators to control this species has allowed it to grow so well that it is receiving some bad press. How much damage it is really causing is a question very hard to quantify. The Japanese knotweed removal industry, solicitors, and homeowners alike are all undecided on how much physical, emotional, and financial damage this controversial plant can inflict.

Instructions Create a poster outlining the reasons why Japanese knotweed has become an invasive species in the UK, and how the problem may be addressed.

Your response may include:

- 1. What a balanced ecosystem is
- 2. How species are usually controlled by predation
- 3. The difference between an introduced species and an invasive species damage caused including environmental, emotional, financial, and physical
- 4. Control measures such as biological and chemical

## Final Reflection



#### Explore Read

Read this article about the new study relating to the damage caused by Japanese knotweed.

https://theconversation.com/japanese-knotweed-is-nomore-of-a-threat-to-buildings-than-other-plants-newstudy-99580

#### Watch

If you want to identify Japanese knotweed in your local area, watch Paul Beckett of Phlorum explain how in this useful video:

#### How to Identify Japanese Knotweed: Japanese Knotweed Identification

Japanese knotweed is most commonly found by watercourses and railways. Take a walk down your local canal and see if you can spot any.

#### Listen

Skip to 19:40 into this podcast for a deeper look into the Network Rail case.

#### https://www.bbc.co.uk/sounds/play/b0b7fj36

This podcast contains interviews with the people who were affected when Network Rail allowed Japanese knotweed to spread onto their property. It touches on the idea of trying to quantify damage, particularly in the absence of any physical destruction.

#### Do

Volunteer with a local environmental group to target invasive species in your area.

If you are currently completing a Gold Duke of Edinburgh Award, consider a residential with the National Trust. I did this for mine and had a fun week meeting new people, conducting bat emergence surveys, and pulling up unwanted plants around the beautiful Culzean Castle.





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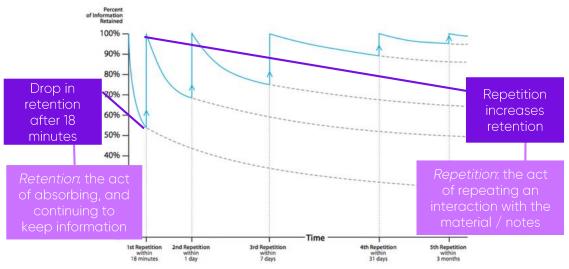
## University Study Skills Cornell Notes



#### Why is good note taking important?

If it feels like you forget new information almost as quickly as you hear it, even if you write it down, that's because we tend to lose almost 40% of new information within the first 24 hours of first reading or hearing it.

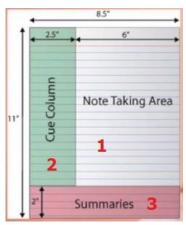
If we take notes effectively, however, we can retain and retrieve almost 100% of the information we receive. Consider this graph on the rate of forgetting with study/repetition:



#### Learning a new system

The Cornell Note System was developed in the 1950s at the University of Cornell in the USA. The system includes interacting with your notes and is suitable for all subjects. There are three steps to the Cornell Note System.

#### Step 1: Note-Taking



1. <u>Create Format</u>: Notes are set up in the Cornell Way. This means creating 3 boxes like the ones on the left. You should put your name, date, and topic at the top of the page.

2. <u>Write and Organise</u>: You then take your notes in area on the right side of the page. You should organise these notes by keeping a line or a space between 'chunks' /main ideas of information. You can also use bullet points for lists of information to help organise your notes.



#### Step 2 Note-Making

1. <u>Revise and Edit Notes</u>: Go back to box 1, the note taking area and spend some time revising and editing. You can do this by: highlighting 'chunks' of information with a number or a colour; circling all key words in a different colour; highlighting main ideas; adding new information in another colour

2. <u>Note Key Idea:</u> Go to box 2 on the left hand side of the page and develop some questions about the main ideas in your notes. The questions should be 'high level'. This means they should encourage you to think deeper about the ideas. Example 'high level' questions would be:

- Which is most important / significant reason for...
- To what extent...
- How does the (data / text / ideas) support the viewpoint?
- How do we know that...

Here is an example of step 1 and step 2 for notes on the story of Cinderella:

	Questions:	Notes:
	How does c's	· Cinderella is an only child
	mother die? !	· Cinderella's dad might spoil her
		· Cinderpla's Step-Mother 1
		Jealow of her beauty
	Why does C	· Maybe Cindevella becomes the
*	make the step-	woman of the house
	M so angiy?	Langelle to Step-Mothage
	*	bout then the Step-Mother wants that position.
	t what language shows this?	wants mar position y.
	shows this?	& Key pint - P fairy tales teach
		Key WIRF - rairy als rain
	What is the	W NOTALS
	march of 'C'?	Cinculto is wind to her step-M
	How do I know!	· Cinderella is wind to her step-M
		ris not-
	8	· Is there a reason for C to be
	Is this just	· 15 there a reason to c 10 pc
	one side of	badly Be treated?
	the story?	
	1 4	

#### Step 3 Note-Interacting

1. <u>Summary</u>: Go to box 3 at the bottom of the page and summarise the main ideas in box 1 and answer the essential questions in box 2.

Summary: over as "nomen of the haule" when he read dies. Her Step-M is jealow and angry, we only is side of the story so it is difficult whether C is really badly treated reason

Give the Cornell Note Taking System a try and see if it works for you!

## University Study Skills Key Instruction Words



These words will often be used when university tutors set you essay questions - it is a good idea to carefully read instruction words before attempting to answer the question.

**Analyse** – When you analyse something you consider it carefully and in detail in order to understand and explain it. To analyse, identify the main parts or ideas of a subject and examine or interpret the connections between them.

**Comment on** – When you comment on a subject or the ideas in a subject, you say something that gives your opinion about it or an explanation for it.

**Compare** – To compare things means to point out the differences or similarities between them. A comparison essay would involve examining qualities/characteristics of a subject and emphasising the similarities and differences.

**Contrast** – When you contrast two subjects you show how they differ when compared with each other. A contrast essay should emphasise striking differences between two elements.

**Compare and contrast** – To write a compare and contrast essay you would examine the similarities and differences of two subjects.

**Criticise** – When you criticise you make judgments about a subject after thinking about it carefully and deeply. Express your judgement with respect to the correctness or merit of the factors under consideration. Give the results of your own analysis and discuss the limitations and contributions of the factors in question. Support your judgement with evidence.

**Define** – When you define something you show, describe, or state clearly what it is and what it is like, you can also say what its limits are. Do not include details but do include what distinguishes it from the other related things, sometimes by giving examples.

**Describe** – To describe in an essay requires you to give a detailed account of characteristics, properties or qualities of a subject.

**Discuss** – To discuss in an essay consider your subject from different points of view. Examine, analyse and present considerations for and against the problem or statement.

## University Study Skills Key Instruction Words



**Evaluate** – When you evaluate in an essay, decide on your subject's significance, value, or quality after carefully studying its good and bad features. Use authoritative (e.g. from established authors or theorists in the field) and, to some extent, personal appraisal of both contributions and limitations of the subject. Similar to **assess**.

**Illustrate** – If asked to illustrate in an essay, explain the points that you are making clearly by using examples, diagrams, statistics etc.

**Interpret** – In an essay that requires you to interpret, you should translate, solve, give examples, or comment upon the subject and evaluate it in terms of your judgement or reaction. Basically, give an explanation of what your subject means. Similar to **explain**.

**Justify** – When asked to justify a statement in an essay you should provide the reasons and grounds for the conclusions you draw from the statement. Present your evidence in a form that will convince your reader.

**Outline** – Outlining requires that you explain ideas, plans, or theories in a general way, without giving all the details. Organise and systematically describe the main points or general principles. Use essential supplementary material, but omit minor details.

**Prove** – When proving a statement, experiment or theory in an essay, you must confirm or verify it. You are expected to evaluate the material and present experimental evidence and/or logical argument.

**Relate** – To relate two things, you should state or claim the connection or link between them. Show the relationship by emphasising these connections and associations.

**Review** – When you review, critically examine, analyse and comment on the major points of a subject in an organised manner

## University Guidance



### **Exploring Careers and Study Options**

- Find job descriptions, salaries and hours, routes into different careers, and more at <u>https://www.startprofile.com/</u>
- ✓ Research career and study choices, and see videos of those who have pursued various routes at <u>http://www.careerpilot.org.uk/</u>
- ✓ See videos about what it's like to work in different jobs and for different organisations at <u>https://www.careersbox.co.uk/</u>
- ✓ Find out what different degrees could lead to, how to choose the right course for you, and how to apply for courses and student finance at <u>https://www.prospects.ac.uk/</u>
- Explore job descriptions and career options, and contact careers advisers at <u>https://nationalcareersservice.direct.gov.uk/</u>
- ✓ Discover which subjects and qualifications (not just A levels) lead to different degrees, and what careers these degrees can lead to, at <u>http://www.russellgroup.ac.uk/media/5457/informed-choices-2016.pdf</u>

### **Comparing Universities**

- <u>https://www.whatuni.com/</u>
- ✓ <u>http://unistats.direct.gov.uk/</u>
- ✓ <u>https://www.thecompleteuniversityguide.co.uk/</u>
- Which? Explorer tool find out your degree options based on your A level and BTEC subjects: <u>https://university.which.co.uk/</u>

### UCAS

- Key dates and deadlines: <u>https://university.which.co.uk/advice/ucas-application/ucas-deadlines-key-application-dates</u>
- ✓ Untangle UCAS terminology at <u>https://www.ucas.com/corporate/about-us/who-we-are/ucas-terms-explained</u>
- ✓ Get advice on writing a UCAS personal statement at <u>https://www.ucas.com/ucas/undergraduate/getting-started/when-apply/how-write-ucas-undergraduate-personal-statement</u>
- ✓ You can also find a template to help you structure a UCAS statement, at <u>https://www.ucas.com/sites/default/files/ucas-personal-statement-worksheet.pdf</u>
- ✓ How to survive Clearing: <u>https://university.which.co.uk/advice/clearing-results-day/the-survivors-guide-to-clearing</u>

## Subject Guidance



UCAS

### Natural Sciences at University

- ✓ Biochemists investigate the chemical processes that take place inside all living things.
- Biochemists will need a high level of skill and ability in science and be good at solving problems. Working accurately and having an eye for detail will help you when examining samples under a microscope.
- You can find out more about different courses and entry requirements by exploring the UCAS Biology Guide online: <u>https://www.ucas.com/ucas/subject-guide-list/biological-sciences</u>
- You can find out more about the different careers by exploring the UCAS Biochemists Careers online: <u>https://www.ucas.com/ucas/after-gcses/findcareer-ideas/explore-jobs/job-profile/biochemist</u>

### A Deeper Look Into Natural Sciences

- ✓ Listen: <a href="http://www.bbcearth.com/Podcast">http://www.bbcearth.com/Podcast</a>
- ✓ Listen: <a href="https://www.nature.com/nature/articles?type=nature-podcast/">https://www.nature.com/nature/articles?type=nature-podcast/</a>
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