

Employer Set Project – Task 1

**T Level in Science
Lesson 1: Skim and scan**

ETFOUNDATION.CO.UK

Relevance and reliability

As part of task 1, you will be asked to review several websites in a limited time. Some of these sources will be more relevant or reliable than others. You need to develop the skill of quickly assessing what is relevant and reliable and what is not.

Consider the list of 23 websites. Each website is related to the problem of plastic waste in biomedical and agricultural laboratories, but some will be more useful than others. Without even opening them, you can make judgements about their relevance and reliability.

Relevance: Look for relevant keywords in the web address.

Reliability: Is it from a scientific journal?
Is it from a blog?
Is the domain ac, edu, gov or com?

1. www.radleys.com/blog/how-to-use-plastic-more-sustainably-in-the-lab/?
2. www.genfollower.com/life-science-labs-minimizing-plastic-waste/
3. www.environmentjournal.online/articles/how-scientists-are-recycling-tonnes-of-plastic-waste-from-labs/
4. www.theguardian.com/environment/2019/nov/10/research-labs-plastic-waste
5. www.ucl.ac.uk/sustainable/sites/sustainable/files/labs_plastics_poster.pdf
6. www.nature.com/articles/528479c
7. www.lab-worldwide.com/tackling-waste-5-steps-to-less-plastic-waste-in-the-lab-a-841359
8. www.labconscious.com/green-lab-supplies-and-lab-equipment-guide/#lab-waste/
9. www.the-scientist.com/careers/life-scientists-cut-down-on-plastic-waste-64547
10. www.kcl.ac.uk/climate-sustainability
11. www.sciencedaily.com/releases/2015/12/151223221353.htm
12. www.thebiologist.rsb.org.uk/biologist-features/how-to-reduce-your-lab-s-plastic-waste
13. www.sciencing.com/sterilize-petri-dishes-5892646.html
14. www.bestseekers.com/best-disinfectant-sprays/
15. www.pharmaguidances.com/cleaning-and-disinfection-of-microbiology-lab-2
16. www.sigmaaldrich.com/technical-documents/articles/labware/cleaning-glassware.html
17. www.safety.rochester.edu/labbiosafe/pdf/DisinfectantsforBiohazardousMaterials.pdf
18. www.birmingham.ac.uk/teachers/study-resources/stem/Biology/stem-legacy-antimicrobial.aspx
19. www.medicalnewstoday.com/articles/321108#seven-best-natural-antibiotics
20. www.ibg102labreports.wordpress.com/2013/05/01/lab-5-determination-of-antimicrobial-effects-of-microbialextracts/
21. www.reddit.com/r/shroomers/comments/2c9lmt/how_i_reuse_disposable_petri_dishes_the_plastic/
22. www.bristol.ac.uk/safety/media/gn/biowaste-gn.pdf
23. www.virkon.us/

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Task 1

Without opening any of the websites, select the three that you think will be most useful and the three that you think will be least useful. Justify your choices.

Most useful	Why?	Least useful	Why?

Task 2

Now, open the three websites that you identified as useful. Do you think you chose well? Explain your thoughts. Do the same for the three least useful websites.

Task 3: skim and scan

Once you have opened a source, you may be faced with a large amount of text. You will not have time to read all the text in detail. Instead, you will need to use a technique called skim and scan. Skimming and scanning are speed-reading techniques which enable you to cover a vast amount of material very quickly.

Skimming is reading a text rapidly to obtain an overall sense of it.

Scanning is reading a text rapidly to obtain specific information.

How to skim

Read the title, subtitles and subheadings to find out what the text is about. Look at the diagrams and charts to get more information about the topic. Read the first and last sentences of each paragraph. Do not read every word or every sentence. Let your eyes skim over the text and look out for key words. Continue to think about the meaning of the text.

How to scan

Do not try to read every word. Instead, let your eyes move quickly across the page until you find what you are looking for. Use clues on the page, such as headings and titles, to help you. Start by thinking up or writing down some questions that you want to answer. Doing this can focus your mind and help you to find the facts or information that you need more easily.

Now, have a go using the following article. Firstly, skim the article to answer the skimming questions, then scan it to answer the scanning questions. Try to do each technique as quickly as possible.

How scientists are recycling tonnes of plastic from labs

University of York researchers have created a new system for recycling single-use plastics used in some scientific experiments

They say the technique will prevent one tonne of plastic, per laboratory, ending up in landfill sites each year, as most recycling plants will not accept laboratory plastics because of their perceived health and safety risks.

Currently, contaminated plastic is heated to kill off remnants of human cells, bagged and sent to landfill. Other plastics, such as test tubes, that may only have held water, also have to be sent to landfill in special bags.

Firstly, the team reviewed the types of plastics they were using and where they came from. To recycle, labs have to use recyclable material in the first place, but many labs use multiple plastic suppliers with products made from mixed materials.

David Kuntin, a PhD student at the University of York's Department of Biology, said, "We reduced the number of suppliers we used, which in turn reduced the need for multiple deliveries, and created a colour-coded checklist of the types of plastics we had in the lab.

"We also looked at the size of the plastic containers we were using and asked ourselves whether the larger containers were necessary for all of our experiments.

"Once we knew what we had in the lab and how much was needed, we looked at implementing an in-house decontamination station."

The station is an area of the lab where plastics are soaked in a high-level disinfectant and left for 24 hours before being rinsed in water and placed in colour-coded recycling bins ready for collection.

The process reduces the need for high-energy losses in heating the plastics in an autoclave – a pressurised heated container.

Once the plastic has been through this process, it is ready for recycling.

David Kuntin said, "Landfill has to be a thing of the past if we are going to improve our global environment, so it is essential that we do what we can as scientists to ensure we are moving in the right direction.

"We are really pleased with the way staff and students have embraced this new addition to laboratory procedure. Much in the same way as people got used to recycling at home, the process in the lab is just as quick and easy."

The team is now working to raise awareness of their in-house recycling methods to encourage more laboratories around the world to think about their plastic waste disposal.

Skimming questions

a) Does the article only refer to the work of one university?

b) Is the new recycling system successful?

c) Does any further work need to be completed?

Scanning questions

a) How much plastic will this technique keep out of landfill?

b) What was the researchers' first task?

c) What is a decontamination station?

Now, look at another of the sources from the list. Pick one. Write five questions about it that one of your peers could answer using the skim and scan techniques.

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