

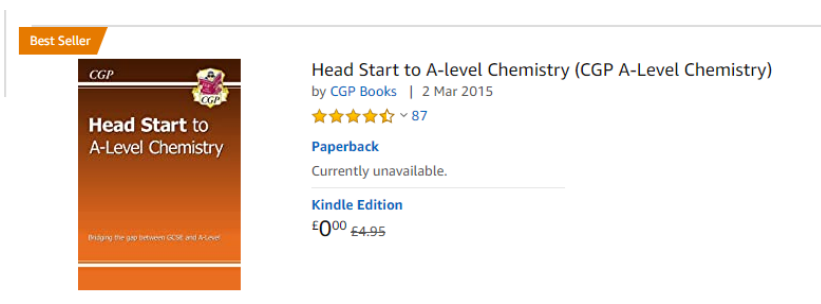
**Chemistry A-Level Year 11
Transition Project 2020**

There are three parts to the transition project.....

1. Learning material for a test on your first Chemistry lesson in Y12 (based on material in the CGP Head Start book)
2. Completing some transition work based on maths skills required at A-Level.
3. Write an essay on the History of the Structure of the Atom with referencing.

1. Learning material for a Head Start test

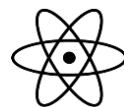
- In your first Chemistry lesson, you will be asked to complete a test based on the CGP Head Start book.
- You can order this book directly from CGP here: <https://www.cgpbooks.co.uk/secondary-books/as-and-a-level/science/chemistry/cbr71-head-start-to-a-level-chemistry>
- It's also available from Amazon
- And if you have a Kindle (or Kindle App), you can download it for free 😊



- You need to learn the information in the book as the test is based on it.
- You need a pass mark of 60%.

2. Maths Skills

- Complete the practice questions on the attached document.
- They are linked to the maths skills you will need to complete your A-Level Chemistry course.



3. Write a report on the History of the Structure of the Atom

Introduction

There have been many different accepted models of the structure of the atom since Democritus developed the first idea of an atom in the fifth century BC. Your task is to produce a report to summarise the history of atomic structure. Your work will be put into a **portfolio of evidence** to show that you meet the required skills for the practical endorsement.

The report should:

- be written formally on lined paper or typed in your own words
- use online and offline research skills, including websites, textbooks and other printed scientific sources of information
- be fully referenced using the Harvard or Vancouver system (detailed on next page)
- include pictures and diagrams to help describe different models
- include a timeline to help illustrate your work
- be structured logically and chronologically

name the scientists who worked on the different models and a description of their model pitched so that other year 12 students understand your work include a detailed description of what is currently accepted as the structure of the atom today and how scientists have arrived at this model. (You will not need to include quarks but you should describe protons, neutrons and electrons.)

As a guide, the marking criteria for the task are as follows (to gain higher grades you will need to meet all the criteria for the grades below):

Bronze (Grade E-D) Research and outline the changing accepted models of atomic structure over time, correctly citing all sources of information (*How Science Works 1*)(*Specification 1.2.1h and 1.2.1j*)

Silver (Grade C-B) Include evidence discovered to accept or reject the particular models. (*How Science Works 1*)

Gold (Grade A-A*) Explain how different models for atomic structure can be used to explain different phenomena, e.g. the Bohr model explains periodic properties (*How Science Works 7*)

Please hand in your report to your Chemistry teacher in your first lesson in September. If typed, please save to USB and print for your portfolio.

Appendix 7: Referencing

One of the requirements of the Practical Endorsement is that candidates demonstrate that they can correctly cite sources of information. The point of referencing is to provide the sources of information that have been used to produce the document, and to enable readers to find that information. There are many different systems of reference in use; the most important thing for candidates to appreciate this level is that they should be consistent in how they reference, and that they provide sufficient information for the reader to find the source.

Systems of citation

Wherever a piece of information that has been retrieved from a source is provided in a text, an in-text citation should be included that links to the full original source in the reference list.

There are two main systems of in-text citation: the Vancouver system, which uses numerical citations, and the parenthetical system (of which the Harvard system is the best known version), in which limited reference information is given in brackets in the text.

Candidates are likely to find the Harvard system easier to handle. However, candidates should be aware of the Vancouver system as they may come across this system in their secondary research.

It does not matter which system candidates use in the context of the requirements for the Practical Endorsement. However, referencing should be complete and consistent. If candidates are already using a particular referencing system in another area of study, for example for an Extended Project qualification, it would make sense if they use the same system within their Chemistry studies.

Vancouver system

The Vancouver system looks like this:

Titration using potassium manganate(VII) can be used to determine the concentration of a solution of Fe^{2+} ions.¹

The full references are given in a numbered list at the end of the document, with each number linked to the appropriate reference, e.g.:

1. Bloggs, J. (2011) *Manganate(VII) titrations*, 2nd ed., Cambridge, Practical Chemistry Publications

The references are ordered in the sequence in which they are first cited in the text. The numbers are repeated in the in-text citations as required, so the same number is always used to cite a given reference.

Parenthetical (Harvard) system

The parenthetical system looks like this:

Titration using potassium manganate(VII) can be used to determine the concentration of a solution of Fe^{2+} ions (Bloggs, 2011).

The author(s) and date of the work are included in brackets at the appropriate point in the text. In this case, the list of full references at the end of the document is ordered alphabetically, and the references are not numbered.

For multi-author works, the full list of names is usually not given in in-text references. Rather, the first name is given followed by 'et al.'. This is commonly done for works with more than three authors.

References

While different referencing systems have minor variations in how they present complete references, the basic information provided is always very similar, and based on the principle of providing sufficient information so that the reader can find the information source.

An overview is given below of standard referencing formats for the types of sources that students are likely to cite.

Books

General reference format:

Authors (year), *Title*, edition (if relevant), publisher's location, publisher

For example:

Atkins, P.W. (1986), *Physical Chemistry*, 3rd ed., Oxford, Oxford University Press

For books that have an editor or editors, include (ed.) or (eds) after the names.

If a book does not have named authors or editors, the reference begins with the title, e.g.:

CLEAPSS Laboratory Handbook (2001), Uxbridge, CLEAPSS School Science Service

Journal articles

General reference format:

Authors (year), 'Article title', *Journal title*, vol. no, issue no, pp. xxx–xxx

For example:

Asakai, T., Hioki, A. (2011), 'Investigation of iodine liberation process in redox titration of potassium iodate with sodium thiosulfate', *Analytica Chimica Acta*, vol. 689, no 1, pp. 34–38

Websites

General reference format:

Authors (year), *Title*. [online] Last accessed date: URL

For example:

Clark, J. (2002), *Some beryllium chemistry untypical of Group 2*. [online] Last accessed 3 February 2015: <http://www.chemguide.co.uk/inorganic/group2/beryllium.html#top>

Webpages and online resources frequently do not have individual authors. In that case, the name of the organisation is given.

Similarly, it is often not possible to find the year in which online material or documents were produced. In that case, use the year in which the information was sourced.

Royal Society of Chemistry (2015), *Weightlifting: Teacher handout*. [online] Last accessed 3 February 2015: <http://www.rsc.org/learn-chemistry/resource/res00000858/chemistry-and-sport-weightlifting>

If no author or organisation can be found, reference the website by title. However, in that case due consideration should be given as to whether the website is a trustworthy source!