



Activity type	classroom <input checked="" type="checkbox"/> homework <input checked="" type="checkbox"/> independent learning <input checked="" type="checkbox"/> other <input type="checkbox"/>		
Activity objectives(s)	At the end of this topic, you should know that: <ul style="list-style-type: none"> • The first 20 elements in the Periodic Table can be categorised according to bonding and structure: <ul style="list-style-type: none"> o metallic (Li, Be, Na, Mg, Al, K, Ca) o covalent molecular (H₂, N₂, O₂, F₂, Cl₂, P₄, S₈ and fullerenes (eg C₆₀)) o covalent network (B, C (diamond, graphite), Si) monatomic (noble gases) 		
Activity resources(s)	Students will need access to the internet and their SCHOLAR login details. Students will need access to a data book.		
Delivery mode	teacher led <input checked="" type="checkbox"/> student led <input checked="" type="checkbox"/>	Collaboration type	individual <input checked="" type="checkbox"/> pairs <input type="checkbox"/> groups <input checked="" type="checkbox"/>



SCHOLAR Lesson Outline

Task description

Computer task

Get pupils to navigate to the correct topic - Higher (CfE) Chemistry Unit 1 Topic 1.5 - Bonding & Structure. Navigate through the topic and complete the end of topic test for homework.

Students should be familiar with how to use their data books to source periodicity information.

Ore samples could be shown to students to show examples of elements which are found in the Earth as compounds.

Simple experiments can be used to test properties of elements such as conduction testing, solubility and melting and boiling points.

Elements can be extracted from their compounds:

- o Silicon can be extracted from sand using magnesium. (See Classic Chemistry Demonstrations, Lister, T., The Royal Society of Chemistry (1995), pp. 127–129. A video can also be found on the RSC website.)

- o a visually attractive and colorful reaction between sodium thiosulfate and hydrogen peroxide in the presence of universal indicator

- o the attention-grabbing classic cannon fire experiment

Focus on definitions of "Metallic Bonding", "Delocalised Electrons", "Lattice", "Covalent Bonding", "Covalent Molecular", "Covalent Network", "Ionic Bonding" and "Monatomic". Also focus on the ability of students to describe the properties of each of the different types of bonding.

Whole class

You may wish to give feedback to students on their progress.
Display a report of the exercise.

Students should be able to list the type of bonding and structure in each of the first 20 elements.

Card sorts can be a good way of checking students understanding of the concepts covered in this topic.



SCHOLAR Lesson Outline

Differentiation (Alternative use)	<p>With an able group of students, you may wish to set this as a homework task to review the topic when you have completed it.</p> <p>With weaker students, you may wish to carry this out as an in class activity so you can answer any questions they may have as they attempt the exercise.</p>
Hints & Tips	<p>This task is best done in pairs or individually.</p> <p>Go round the class and get students to explain their answers. Focus not only on identifying types of bonding present but also explaining how these occur.</p> <p>It is a good idea to get students to show you their score when they finish the exercise. If they do not get full marks you can send them back to have another try while the rest of the class finish off.</p> <p>Some teachers like to generate a report while students are logged in so that they can be shown what the teacher can see. This will highlight progress and any pupils who are just clicking reveal, as full marks can only be achieved by entering correct answers.</p> <p>There is online training available to help you learn how to do this. When you are logged in you will see a course called Succeed with SCHOLAR. Unit 1 Topic 7 introduces you to the reporting system.</p> <p>Choose some questions for students to try from the textbook / past paper questions in advance so faster pupils can move onto these.</p> <p>Questions in the end of topic test give extra practice.</p>
Notes	<p>Pupils will need access to a data book.</p> <p>The SCHOLAR section of this material should take approx 20 minutes.</p>