Extraction of Metals

How are metals extracted? Are all metals obtained in the same way?

Some metals are more reactive than others. Some metals are found in ores, and some are found as pure metals in the Earth's crust. Different metals require different chemical processes to extract them from their ores. In order to conserve natural resources, we can recycle metals.

This is the **sixth** unit we are studying as part of the big idea: **Reactions Rearrange Matter.**

In this unit we will learn about some of the common reactions of metals. We will be able to represent these reactions with word and balanced chemical equations.

We will be able to describe displacement reactions, which are one type of reaction used to extract a metal from an ore. Some students will be able to represent these reactions with new types of chemical equations: ionic equations and half equations.

You will study a technique called electrolysis. This is used to extract the most reactive metals from their ores. You will carry out your own electrolysis reactions, and be able to explain how this works by referring to the movement of ions.

Finally, we will study the corrosion of metals and how this can be prevented. We will earn about recycling metals, and the advantages and disadvantages of this.

TASKS:
What subject will this unit focus on? BIOLOGY CHEMISTRY PHYSICS
(circle the correct subject)

There are lots of keywords underlined above. List these into the two columns:

Words I know	Words I haven't seen before

To answer before the unit:

1. What are you most excited to learn about in this topic?

   _____

   _____

   _____

2. What do you already know about this topic?

   _____

   _____

   _____

3. Why do you think it's important to learn that structure determines properties?

   _____

   _____

   _____

4. What knowledge from previous science lessons might help us?

   _____

   _____

   _____

5. What questions do you have about this topic?

   _____

   _____

   _____

To answer at the end of the unit:

1. Tick off any words in the 'words I haven't seen before' column that you are now confident with. Circle any you still need more practice to use.

2. What have you most enjoyed about this unit?

   _____

   _____

   _____

3. What more would you like to learn about extracting metals as part of the big idea: 'Reactions Rearrange Matter?

   _____

   _____

   Teacher guidance:

The purpose of this resource is to provide students with an overview at the beginning and end of each unit. It is designed to create a discussion about the unit prior to the sequence of lessons.

The unit scope should be read as a guided reading activity. Tier 3 vocabulary has been highlighted. It may need to be adapted further for LPAs or pupils with different reading ages.

There are a range of ways to use this resource.

1. Display on a slide for students to read as a class. Direct students to complete the activities in their book.

2. Print off for students to stick into their book at the beginning of the unit along with their knowledge organiser. Complete as a guided reading task together. Direct students to complete the activities.

3. Have students complete as part of a booklet.

4. Set as a homework prior to a unit.

If you have any feedback about how this resource could be used/improved, please contact the science mastery team: sciencemastery@arkonline.org