ALDER
Community High School

Science KS3 Independent Study Guidance 25-26

Top tip test and retrieve your previous knowledge. The best way to do this is by self-testing whether this is through flashcards, practice quizzes on Educake or exam practice.

Reading through and making notes is not an effective tool for revision and even though sometimes you may just need to remind yourself of some content either through reading your class notes, a revision guide or watching a BBC bitesize video this should be the bare minimum of your revision in comparison to **testing your knowledge**.

Our top 3 revision techniques for Science are listed below and these should last for a maximum of a 25-minute Pomodoro round and be varied throughout your child's independent study time.

Educake

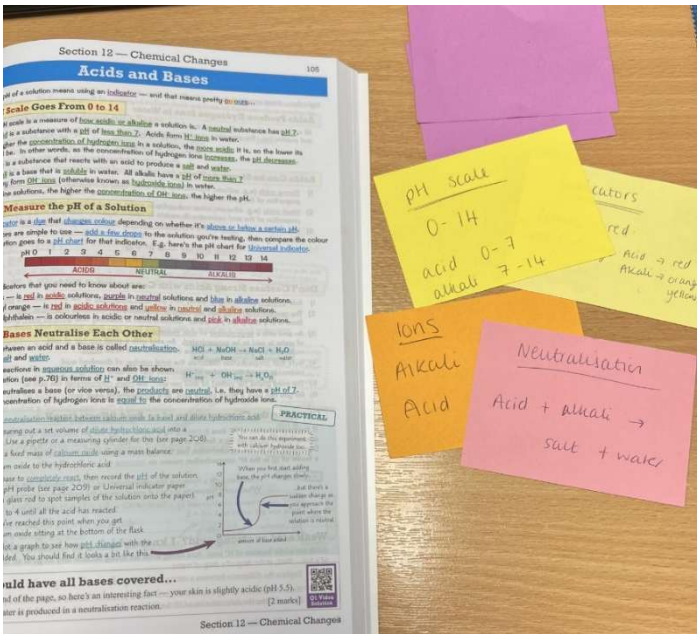
1. **Educake:**

This is compulsory independent study each week - www.educake.co.uk

- Set on a Monday, Due the following Sunday evening.
- Quick recall quiz questions from all Key Stage 3 content.
- 1 x quiz
- Maximum 20 questions

2. **Flashcards:**

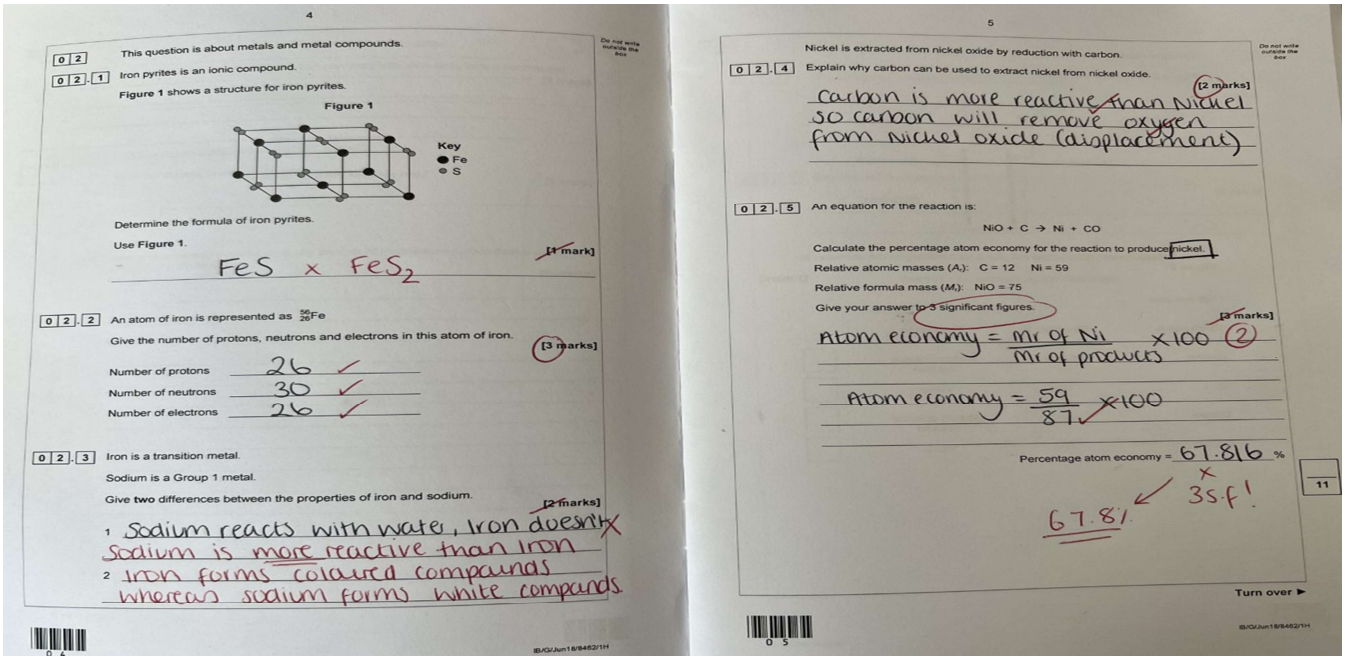
- Find the topic you are struggling on (this should be found from questions you can't complete at home, on Educake or in retrievals in school).
- Find that page in your revision guide or schoolbook. Read through the section on that page.
- Make flash cards of the key points, question on one side, answer on the other.
- Use those to test yourself or ask friends or family to test you.
- Repetition is key!
- Flashcards on BBC bitesize (website) are also great for self testing – you can use these to help make your own flashcards also.



3. <u>Using workbooks:</u>

When you are completing workbook practice you should follow these steps:

1. Pick a question in the KS3 practice workbook.
2. Glance at the marks and set a timer – 15 marks, 15 minutes.
3. Start the timer and work on the question until the timer elapses.
4. Use the mark scheme to then self-assess the question in a different colour pen, making improvements on their answers as they go.
5. Use the revision guide page that aligns with the workbook to add in any information you didn't know and make sure to revise that section/topic if you struggled with it.



4

0 2 This question is about metals and metal compounds.

0 2 . 1 Iron pyrites is an ionic compound.

Figure 1 shows a structure for iron pyrites.

Figure 1

Determine the formula of iron pyrites.

Use **Figure 1**.

[1 mark]

FeS x FeS_2

0 2 . 2 An atom of iron is represented as $^{56}_{26}Fe$

Give the number of protons, neutrons and electrons in this atom of iron.

[3 marks]

Number of protons 26 ✓

Number of neutrons 30 ✓

Number of electrons 26 ✓

0 2 . 3 Iron is a transition metal.

Sodium is a Group 1 metal.

Give **two** differences between the properties of iron and sodium.

[2 marks]

1 Sodium reacts with water, iron doesn't ✓
Sodium is more reactive than iron

2 Iron forms coloured compounds ✓
whereas sodium forms white compounds

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5

Nickel is extracted from nickel oxide by reduction with carbon.

0 2 . 4 Explain why carbon can be used to extract nickel from nickel oxide.

[2 marks]

Carbon is more reactive than Nickel
so carbon will remove oxygen
from nickel oxide (displacement)

0 2 . 5 An equation for the reaction is:

$NiO + C \rightarrow Ni + CO$

Calculate the percentage atom economy for the reaction to produce nickel.

Relative atomic masses (A_r): C = 12 Ni = 59

Relative formula mass (M_r): NiO = 75

Give your answer to 3 significant figures.

[3 marks]

Atom economy = $\frac{Mr \text{ of } Ni}{Mr \text{ of products}} \times 100$ (2)

Atom economy = $\frac{59}{87} \times 100$ ✓

Percentage atom economy = 67.816 %

x

3 s.f.!

67.8 ✓

11

Turn over ►

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