THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

YEARS 7 TO 9 · SCIENCE

The Periodic Table and materials

How the table is arranged and why position predicts behaviour, metals against non-metals, and choosing a material.

WHAT IS INSIDE

- How the table is arranged
- Metals and non-metals
- Choosing a material, at this level
- The periodic table, metals and materials
- How each one is answered

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1 sets · a hint on every question

Written for a parent teaching at home. No training assumed, and nothing else to buy.

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Metals and non-metals

Read this, then answer the questions on it.



METALS AND NON-METALS

Elements are sorted into metals, nonmetals and metalloids, and the sorting is done by how well they conduct. A metal is an element that conducts heat and electricity well. Magnesium is malleable and ductile at high temperatures, and white tin is malleable like other metals, so being workable rather than shattering goes with being a metal.

A metalloid is an element whose properties are between those of metals and nonmetals, and these are typically semiconductors.

The source examines the behaviour of the representative metals in relation to their positions in the table, and it is those it draws its trends from rather than every metal there is.

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The periodic table, metals and materials

Every answer is on the pages you have just read.



1. **What is a column of the periodic table called, and what is a row called?**
   Two words.

2. **How many nonradioactive representative metals does the source count, and in which groups?**
   A number and a list of groups.

3. **The table places elements with similar properties close together. Explain what that lets you do with an element you have never met.**
   Use its position.

4. **Name the three groups elements are sorted into, what the sorting is based on, and what a metalloid is.**
   Three names, one property, one definition.

5. **Reinforced concrete puts steel only where the tension is. Explain what that tells you about choosing materials.**
   Each material is doing the thing it is good at.

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How each one is answered

Mark it together. Where a question asks for a list, the order does not matter.



THE PERIODIC TABLE, METALS AND MATERIALS

1. What is a column of the periodic table called, and what is a row called?

1. A column is a group.
2. A row is a period.

Answer: **a column is a group, a row is a period**

2. How many nonradioactive representative metals does the source count, and in which groups?

1. The source counts 20 nonradioactive representative metals.
2. They sit in groups 1, 2, 3, 12, 13, 14 and 15.

Answer: **20, in groups 1, 2, 3, 12, 13, 14 and 15**

3. The table places elements with similar properties close together. Explain what that lets you do with an element you have never met.

1. Elements in the same group behave similarly.
2. So from an element's group you can expect behaviour like that of the others in it.

Answer: **expect it to behave like the other elements in its group**

4. Name the three groups elements are sorted into, what the sorting is based on, and what a metalloid is.

1. Elements are sorted into metals, nonmetals and metalloids.
2. The sorting is by how well they conduct: a metal is an element that conducts heat and electricity well.
3. A metalloid has properties between those of metals and nonmetals, and is typically a semiconductor.

Answer: **metals, nonmetals and metalloids, sorted by conduction; a metalloid is between the two and is typically a semiconductor**

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SAMPLE PAGES

You have read a few pages. The pack is longer.

What you are holding is a short sample, taken from different parts of the pack so that you can see how a week is planned and what a child is actually asked to do, before you decide.

The complete pack, and the rest of the academic materials, are on our website: schemes of work for a parent teaching at home, and practice packs for the skills children get stuck on.

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Members of the homeschool community do not buy these. If you have joined the community, the pack for the term you are working on is given to you at no cost.

Our Islamic Education classes are free. These packs are part of what pays the teachers who teach them.