

# Development of the periodic table



## Task 1: What are properties?

- a) Define the term property.
- b) Circle the chemical properties and underline the physical properties.

reactivity

colour

flammability

hardness

acidity

melting point

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## Task 2: The early periodic table

- a) Draw lines to match the scientists to their periodic table ideas.

Newlands

left gaps for undiscovered elements

Mendeleev

ordered elements by atomic number

Moseley

saw each eighth element has similar properties

- b) Starting with the earliest, **number** the scientists to show the order in which they contributed to the development of the periodic table:

Moseley

Newlands

Mendeleev



### Task 3: The modern periodic table

a) Place a tick to show if the description is for Mendeleev's or the modern periodic table.

Description	Mendeleev's periodic table	The modern periodic table
arranged by atomic number		
Group 0 elements missing.		
Gaps present.		
arranged by atomic weight		

b) Complete the sentences by filling in the gaps.

- John \_\_\_\_\_ proposed the Law of Octaves. As he spotted that every \_\_\_\_\_ element had similar \_\_\_\_\_.
- Dmitri \_\_\_\_\_ helped create the modern periodic table by leaving gaps for \_\_\_\_\_ elements.
- Both Newlands and Mendeleev ordered the elements by their atomic \_\_\_\_\_.
- The modern periodic table is arranged by atomic \_\_\_\_\_. It has columns called \_\_\_\_\_ and rows called \_\_\_\_\_.

c) Whose table of elements improved on Newlands' and how? (3 marks)

# Development of the periodic table



## Task 1: What are properties?

a) Define the term property.

*A property is the physical or chemical characteristics of a substance.*

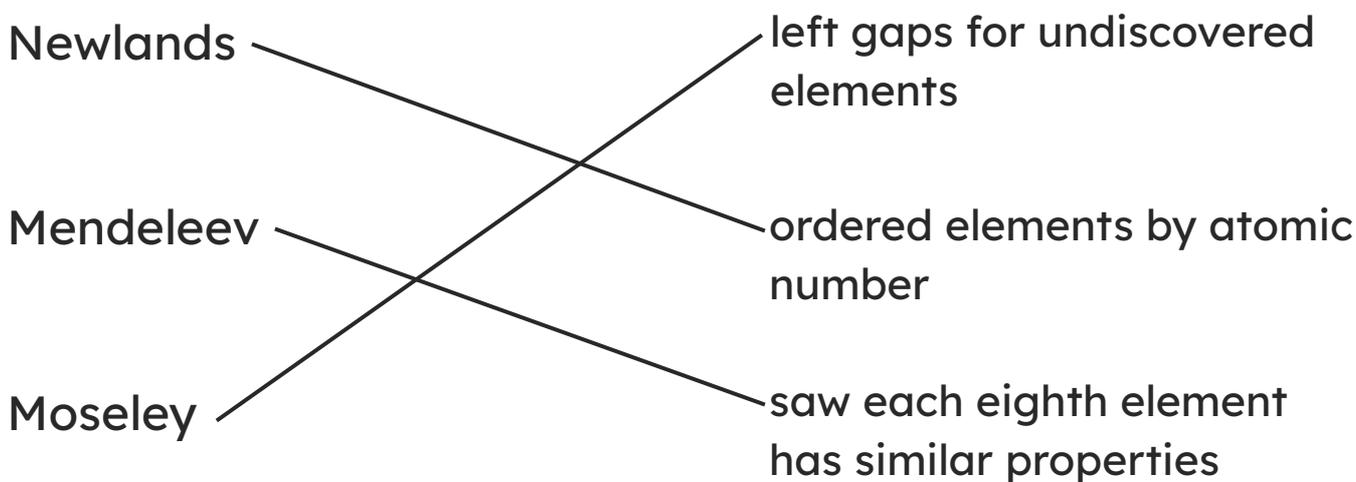
b) Circle the chemical properties and underline the physical properties.

Diagram showing properties categorized by type:

- Chemical properties (circled): reactivity, flammability, acidity
- Physical properties (underlined): hardness, colour, melting point

## Task 2: The early periodic table

a) Draw lines to match the scientists to their periodic table ideas.



b) Starting with the earliest, **number** the scientists to show the order in which they contributed to the development of the periodic table:

Numbered boxes for scientists:

- 3 Moseley
- 1 Newlands
- 2 Mendeleev



### Task 3: The modern periodic table

a) Place a tick to show if the description is for Mendeleev's or the modern periodic table.

Description	Mendeleev's periodic table	The modern periodic table
arranged by atomic number		✓
Group 0 elements missing.	✓	
Gaps present.	✓	
arranged by atomic weight	✓	

b) Complete the sentences by filling in the gaps.

- John Newlands proposed the Law of Octaves. As he spotted that every eighth element had similar properties.
- Dmitri Mendeleev helped create the modern periodic table by leaving gaps for undiscovered elements.
- Both Newlands and Mendeleev ordered the elements by their atomic weight.
- The modern periodic table is arranged by atomic number. It has columns called groups and rows called periods.

c) Whose table of elements improved on Newlands' and how? (3 marks)

- *Mendeleev's table of elements*
- *His table left gaps for undiscovered elements.*
- *This ensured that elements with similar properties were in the same group.*