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STEM Project

Chapter 3 – Periodic table

Pages 65–88

Creating a periodic table

The modern periodic table of elements is credited to Dmitri Mendeleev, who categorised the chemical elements based on atomic number and chemical properties. The table has rows and columns that represent different characteristics, as well as a 'breakout group' of lanthanoids and actinoids that are displayed separately at the bottom, as they do not fit neatly into the main table structure.

Mendeleev's design has become the accepted standard, but there have been many attempts to categorise and display the chemical elements. Some designs display the elements in circular arrays such as Mohammed Abubakr's circular periodic table, or in more creative shapes such as Theodor Benfey's spiral periodic table. There are also three dimensional periodic table designs such as the Alexander Arrangement of Elements, which is based on the strict periodic law. The Alexandre-Émile Béguyer de Chancourtois' Telluric Screw was devised as a spiral graph and arranged on a cylinder or telluric helix because tellurium was the element in the middle of the graph.

A periodic table of sporting elements



In this activity, you and a partner are going to create a periodic table of 'sporting elements'.

To follow is a list of the 24 sporting elements. Your task is to organise these sporting elements into a periodic table to provide a clear visual overview of their characteristics.

Here's what to do:

Step 1: Create symbols for your elements

Think of a symbol for each of the following elements. You could use letters or other symbolic notation.

Note down your symbols in the table.

Element	Symbol	Element	Symbol	Element	Symbol
AFL football		Table tennis table		Table tennis ball	
Tennis racket		Soccer ball		Badminton net	
Whistle		Tennis net		Hockey stick	
Hockey puck		Table tennis bat		Hockey goal	
Football boots		Badminton racket		Red card	
AFL goals		Mouth guard		Shin pads	
Netball		Tennis ball		Soccer goals	
Yellow card		Netball goal ring		Shuttle-cock	

Step 2: Prepare and cut out your symbols

Write your symbols for each element in the cut-out boxes in the attachment and then cut them out. Do not fill in the ‘extra categorical information’ yet.

Step 3: What categories are possible?

Using the cut-outs to help you, explore different ways to categorise the 24 sporting elements.

- Will you categorise them based on whether they are used in the summer or winter? Indoors or outdoors? Racket sports or not?
- How many categories can you think of? List as many as you can below.

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Discussion and reflection

What improvements could you make to your periodic table of sporting elements?

What changes would you make if you were to do this activity again?

Think of some other classification systems that help us to understand quickly the nature of the items they categorise. List them.

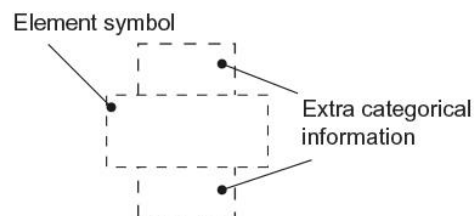


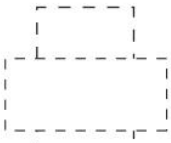
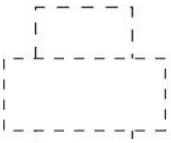
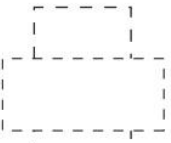
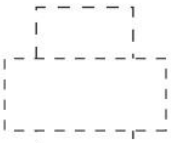
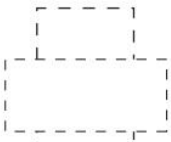
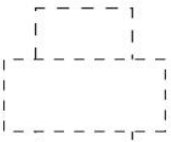
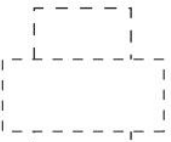
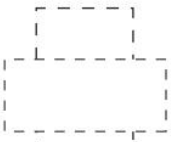
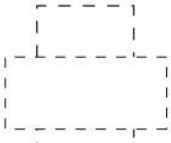




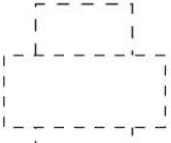



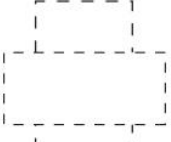
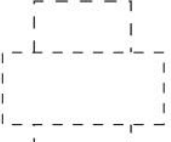
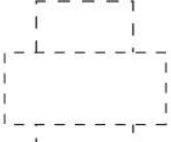
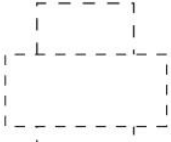



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Attachment: The sporting elements – cut-outs

Below are cut-outs for the 24 sporting elements.



 AFL FOOTBALL	 TENNIS RACKET	 WHISTLE	 HOCKEY PUCK
 FOOTBALL BOOTS	 AFL FOOTBALL GOALS	 NETBALL	 YELLOW CARD
 TABLE TENNIS TABLE	 SOCCER BALL	 TENNIS NET	 TABLE TENNIS BAT
 BADMINTON RACKET	 MOUTH GUARD	 TENNIS BALL	 NETBALL GOAL RING
 TABLE TENNIS BALL	 BADMINTON NET	 HOCKEY STICK	 HOCKEY GOAL
 RED CARD	 SHIN PADS	 SOCCER GOAL	 SHUTTLECOCK