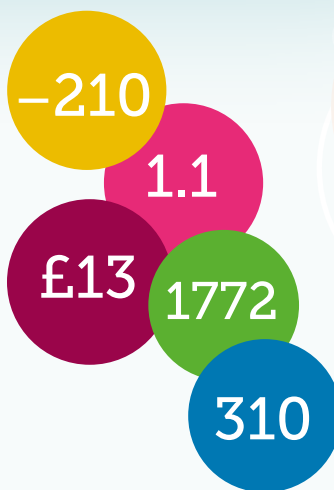


# TOP TRUMPS

# ELEMENTS

## Primary Support Pack

Top Trumps™ are an ideal resource for the primary classroom as children already enjoy playing the game. You can use the Elements Top Trumps™ cards as a teaching aid just by allowing children to play the game. You can also use the cards as a starting point for learning in science, maths, history, art and English including cross-curricular learning. You can use the game as an integral part of a lesson, as a starter or as an extension at the end.



## LEARNING WITH TOP TRUMPS™

By playing the game, children will be reading the values on the cards, saying them out loud and comparing them to the values of the other players. By doing this, children will be reinforcing learning in:

**Money**

**Decimals**

**Unit prefixes**

**Negative numbers**

**Dates (Including BC)**

**Number and place values**

**Ordering, sorting and comparing numbers**

You can use the game to introduce children to concepts they will meet later on in their science education:

**Mass**

**Atoms**

**Density**

**Elements**

**Melting points**

**States of matter**

**The periodic table**



By playing the game the children will develop their knowledge of some of the common elements and their uses.

You will also introduce them to some of the lesser known elements.



## OTHER GAMES TO PLAY USING THE CARDS

As well as the standard Top Trumps™ game, children can use the cards to play other games in pairs, groups or as a whole class. Again, these games will reinforce the concepts already mentioned and include:

1

Playing 20 questions (using one card at a time, asking questions with only yes/no answers to deduce the card, e.g. 'was it discovered after 1700?'). This will develop concepts of grouping and classifying as well as maths skills.

2

Playing the normal Top Trumps™ game but with the lowest value winning the hand.

3

Using the cards to play a 'higher or lower' style game (like *Play Your Cards Right* on television).

**TOP TRUMPS** ELEMENTS



# SCIENCE CONCEPTS TO EXPLORE AND DEVELOP



## DENSITY AND FLOATING/SINKING

The density of a substance is its mass per unit volume. Exploring this concept further will develop concepts of mass and volume. The density of an object determines whether it will float or sink.

Water has a density of  $1000 \text{ kg/m}^3$  so if an element has a density lower than this value it will float in water. If it has a density greater than this it will sink in water. Children can sort the elements into groups of those that will float in water and those that will sink.

Then consider a different liquid (mercury would be a good example). In order to float in mercury the element needs to have a lower density than that of mercury, so you can ask which elements from the pack will float in mercury.

## SOLIDS, LIQUIDS AND GASES

As a simple activity, children can sort the cards into three piles – solids, liquids and gases.

You can develop this area by exploring melting point. This is the temperature at which a substance changes from solid to liquid. If the melting point of an element is above that of room temperature then it will be a solid. If the melting point is below that of room temperature then it will be either a liquid or a gas. To find out which of these it will be we need to know its boiling point.

Children can then explore melting points by using a number line and putting the cards in the appropriate place. From this it is possible to deduce the state of the element in different locations such as throughout the solar system: eg what state will they be in on the surface of Mars or the Moon?

## UNITS

The pack will develop the use and understanding of scientific units. When playing the game, children will be saying the units out loud and constantly associating them with the appropriate category.

This will reinforce their learning of the correct units for temperature, density, mass and size.

As the cards use both kilograms (kg) and grams (g), you can use them to explore the use of prefixes as the prefix kilo means 'scale up by 1000'.

As the cards give the price of elements, the children can calculate how much they themselves would be worth if they were made out of a specific element: eg 'how much would I be worth if I was made entirely out of aluminium?' As some children will be used to weight measured in stones and pounds this will involve them understanding and using the equivalences between the imperial units they are used to and the metric units on the cards.

