

Oxidation States Top Trumps

Rules

1. Highest priority wins if they're in conflict
2. If equal priority, then highest possible oxidation number wins. e.g. + 2 trumps + 1.

Task: play the game in pairs. With each pair of cards, decide:

1. If a compound could form. If so why? e.g. Metal and non-metal so ionic bond. Metal and hydrogen so metal hydride could form.
2. Write the formula of the compound (Element with highest priority will have favoured oxidation state in compound)
3. Determine the oxidation state of each element in the formula

Top Trumps: Sodium

Gains/ loses electrons: loses
 Favourite Oxidation State: +1
 Possible Oxidation States: 0, +1
 O.S. Priority: 1
 Different O.S possible? No

Top Trumps: Chlorine

Gains/ loses electrons: usually loses
 Favourite Oxidation State: -1
 Possible Oxidation States : 0, -1
 (Different when in compounds with O or F)
 O.S. Priority: 3
 Different O.S possible? Yes

Redox Reactions: Oxidation States Top Trumps

There are over thirty possible compounds with the cards you have. Can you find them all?

Elements on the cards	Can a compound be formed? Why?	Formula and oxidation states of the elements it contains.
Sodium and Chlorine	Yes. Ionic bond between a metal and a non-metal. Forms sodium chloride.	Na^+ and Cl^- so NaCl