

MODULE: Matter 1

Activity Sheet 1.5a: Elements cards activity

The image shows a periodic table where each element is represented by a small card. Each card contains the element's symbol, atomic number, and name. The cards are color-coded by groups. The lanthanide and actinide series are shown as separate rows below the main periodic table.

Elements cards

Cut up your elements sheets to make a pack of 32 cards representing the better known elements.

- Sort your pack into elements that (at 'standard state' or in 'room conditions', ie 25°C and one atmosphere pressure) are:
 - solids
 - liquids
 - gasesand list them.
- Then re-sort the pack into
 - metals
 - non-metalsand list them.

3. Pick out the cards that make these compounds; (you may have to do some research)

- a. water
- b. salt (table salt)
- c. steel
- d. chalk
- e. baking soda
- f. hydrochloric acid
- g. plaster for walls (gypsum)
- h. petrol
- i. wood
- j. proteins for human foods

and note them down.

4.

- a. How many of the 32 cards did you use to make the materials in Q3?
- b. Which element cards did you use most often?
- c. Sort out the cards NOT used in Q3. Can you suggest some uses for these elements, or for compounds that contain these atoms?

Answers for Activity Sheet 5a:

1.

a. Solids: Li, C, Na, Mg, Al, Si, P, S, K, Ca, Ti, Cr, Fe, Co, Ni, Cu, Zn, Ag, Sn, I, Au, Pb, U

b. Liquids: Br

c. Gases: H, He, N, O, F, Ne, Cl, Ar

2.

a. Li, Na, Mg, Al, K, Ca, Ti, Cr, Fe, Co, Ni, Cu, Zn, Ag, Sn, Au, Pb, U

b. H, He, C, N, O, F, Ne, Si, P, S, Cl, Ar, Br, I

3.

a. H, O

b. Na, Cl

c. Fe, C

d. Ca, C, O

e. Na, H, C, O

f. H, Cl

g. Ca, S, O

h. C, H

i. C, H, O

j. C, H, O, N

4.

a. 9 of the 32 cards

b. C, H, O – 6 times each

c. There are many alternative answers: here are some examples

<i>He</i>	<i>balloon gas</i>
<i>Li</i>	<i>low-sodium salt substitute</i>
<i>F</i>	<i>non-stick plastic coatings</i>
<i>Ne</i>	<i>display lighting tubes</i>
<i>Mg</i>	<i>indigestion tablets, Milk of Magnesia</i>
<i>Al</i>	<i>used to make aeroplanes</i>
<i>Si</i>	<i>sand and semiconductor materials</i>
<i>Ar</i>	<i>used to fill light bulbs</i>
<i>K</i>	<i>nitrate compound in gunpowder</i>
<i>Ti</i>	<i>very strong metal</i>
<i>Cr</i>	<i>used in stainless steel</i>
<i>Co</i>	<i>used in cooling glass</i>
<i>Ni</i>	<i>used for rechargeable batteries</i>
<i>Cu</i>	<i>electrical wiring</i>
<i>Zn</i>	<i>zinc oxide is an antiseptic</i>
<i>Br</i>	<i>used in sedatives</i>
<i>Ag</i>	<i>jewellery, antiseptic</i>
<i>Sn</i>	<i>coating steel in tin cans</i>
<i>I</i>	<i>essential for a healthy diet</i>
<i>Au</i>	<i>precious metal, jewellery, medicine, dentistry, glass-making, and a conductor in electronics</i>
<i>Pb</i>	<i>used in anti-corrosion paint</i>
<i>U</i>	<i>nuclear fuel</i>