

# Example

## Properties of elements

We can understand the different properties of elements from the periodic table

$s^2p^6$

2 He
10 Ne
18 Ar
36 Kr
54 Xe
86 Rn

### Noble gases

- Filled outer p-shell (s for He)
- Hard to ionize
- Non-reactive

$s^1$

3 Li
11 Na
19 K
37 Rb
55 Cs
87 Fr

### Alkali metals

- Unpaired outer s-shell  $e^-$
- Easy to ionize
- Very reactive

$d^1 - d^{10}$

21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn
----------	----------	---------	----------	----------	----------	----------	----------	----------	----------

### Transition metals

- Filling d-shell ( $\ell = 2$ )
- Tend to be magnetic