



Four of our suspects were watching the fireworks – **we have it on CTV.**

If firework chemicals fell on his clothes, they might tell us the **time of death.**

I'll get **forensics** on to it. What **chemicals** should they look for?



Rocket Science

2

Potassium nitrate here – I **hate** having too much **oxygen** – so when I get hot, I let it escape.

Carbon and **sulfur** here – we love to link up with **oxygen**, and if we're hot....

Bang!!

...we make **carbon dioxide** and **sulfur dioxide**, and take up 1000 x more volume.

Do different **salts** give different **colours**? How does that work?

Hot salts, **CO₂** and **SO₂** rush out and the rocket zooms up.

I'm full of **salts** to make bright colours.



Colourful characters

3

H

Our **electrons** decide the colour and we're all different



Li

Take a look inside me. Those circles are the energy levels where my **electrons** orbit.



Na



Mg

Heat boosts them to higher energy levels – but they drop back down again and let the energy escape as light. The smaller the drop, the redder the colour.



K



Ca

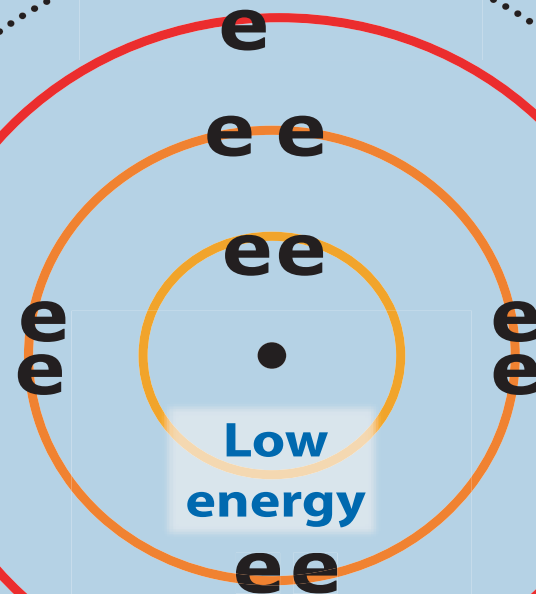


Sr

Use the electron cards to work out what is different about us.

Sodium is atom number **11** but you can call him **2,8,1**.

High energy



Caught on camera?

4



Forensics found **lithium chloride** on the corpse and **potassium chloride** underneath it.

James Mann

Lucy Long

Sue Little

John Strong



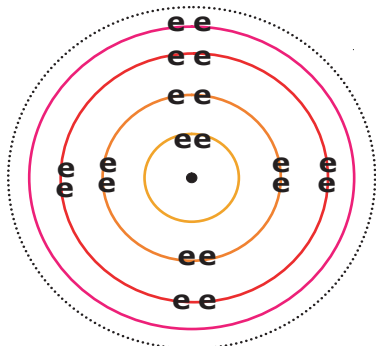
Who killed him?

Electron cards

5

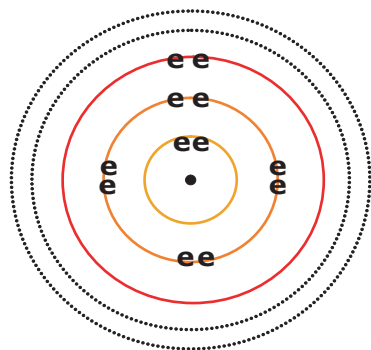
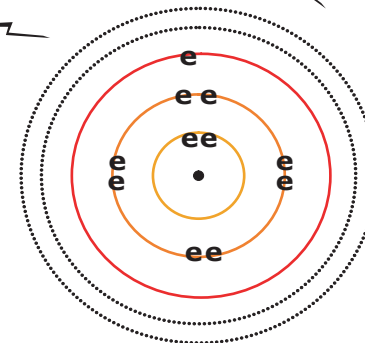


23
Na
11

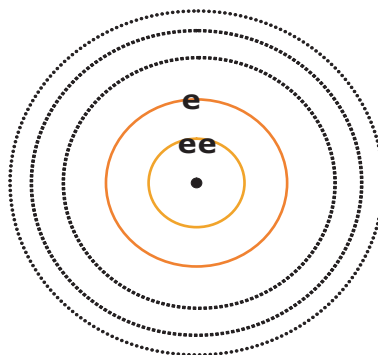


2,8,8,1

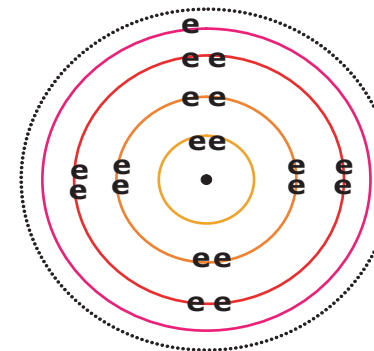
2,8,2



2,8,1



40
Ca
20



39
K
19

2,8,8,2

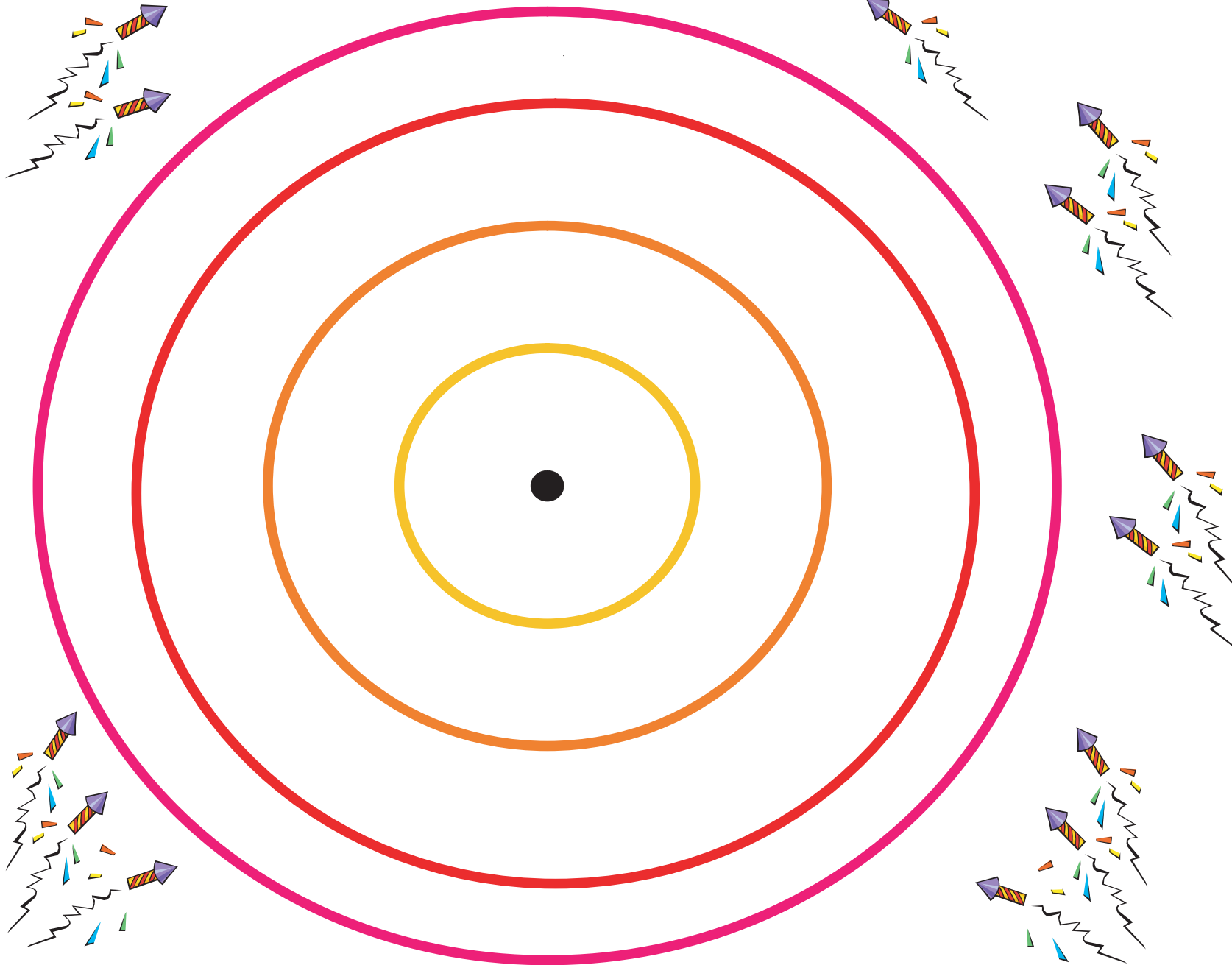
7
Li
3

2,1

24
Mg
12

Electron energy levels

6



e	e
e	e
e	e
e	e
e	e
e	e
e	e
e	e
e	e
e	e
e	e
e	e