**Card 1 answers:**

1. **Li, Na, K**
2. **As you go down the group, the elements become more reactive.**
3. **They become softer. There is no pattern for density or density goes up and then down. Melting point increases.**
4. **40oC**
5. **lithium hydroxide and hydrogen**

**Card 2 answers**

1. **Chlorine is on the right so it is a non-metal.**
2. **Potassium is more reactive than sodium because in Group 1, the elements become more reactive as you go down the group.**
3. **Bromine is less reactive than chlorine because in Group 7, the elements become less reactive as you go down the group.**
4. **Atomic number or proton number.**
5. **Chlorine.**
6. **Iodine is a solid.**

**card 3 answers:**

1. **As you go down Group 7, the elements become less reactive.**
2. **This is different to Group 1. In Group 1, as you go down the group, the elements become more reactive.**
3. **The Halogens.**
4. **Gas, F2, red or red/brown.**
5. **Period 3.**
6. **2K + Cl2 🡪 2KCl**

**card 4 answers:**

1. **Lithium has a red flame.**
2. **Light energy.**
3. **This is called a line spectrum. You use a spectroscope to see this.**
4. **Each element has a different line spectrum. We can tell what the element is from its spectrum. When scientists saw a line spectrum which didn’t match elements they knew about then they knew that they had discovered a new element.**

**Spectrum is singular and spectra is plural!**

**Card 5 answers:**

1. **Flammable.**
2. **Wear goggles and wear gloves.**
3. **Toxic.**

**card 6 answers:**

1. **Potassium + water 🡪 potassium hydroxide + hydrogen**
2. **Lithium + iodine 🡪 lithium iodide**
3. **Sodium (nearest the bottom of Group 1) and chlorine (nearest the top of Group 7).**
4. **Potassium chloride solution is (aq).**
5. **H2O, H2, Br2 and NaI.**
6. **2K + 2H2O 🡪 2KOH + H2**
7. **2Li + Cl2 🡪 2LiCl**

**Card 7 answers:**

**1. no charge**

**2. neutrons and protons**

**3. positive**

**4. three**

**5. three**

**6. four**

**7. hydrogen**

**8. boron and carbon**

**Card 8 answers:**

Li is 2.1 Na is 2.8.1 K is 2.8.8.1

2. All have 1 electron in their outer shell

3. Group 1

4. Period 3

5. All have 7 electrons in their outer shell

6. Boron (B)

**card 10 answers:**

1. CO2 = 3, H2O = 3, KCl = 2, Cl2 = 2, MgCl2 = 3, Br2 = 2, NaOH = 3, Na2O = 3, CO = 2, LiCl = 2
2. K+, Cl-, Br-, Na+.
3. K+ and Na+.

**card 11 answers:**

1. **B – it has 9 protons and 10 electrons so has a – charge overall.**
2. **A and D. A, C and D are atoms – same number of protons as electrons. A and D are both in group 1 since they both have two electrons in the outer shell.**
3. **A and E are the same element because they have the same number of protons and will have the same proton number.**

**card 12 answers:**

1. **Na+, Cl-, Mg2+, Al3+, O2-, K+, Li+, Br-, Ca2+, I-**

|  |  |  |  |
| --- | --- | --- | --- |
| **Ionic compound** | **Positive ions** | **Negative ions** | **Formula** |
|  | **Li+** | **Br-** | **LiBr** |
|  | **Mg2+** | **Cl-** | **MgCl2** |
|  | **Mg2+** | **S2-** | **MgS** |
|  | **Na+** | **O2-** | **Na2O** |
|  | **Al3+** | **I-** | **AlI3** |
|  | **Fe3+** | **Cl-** | **FeCl3** |