



**Name:**

**Class: Chilham**

**Teacher: Miss Shaw**

## Knowledge Organiser

Term 5



“ Not all of us can do **great** things. But we can do **small** things with great love.

– Mother Teresa

Using in Class	
Quiz your neighbour	Your teacher will give you a topic and you can create questions to test your neighbour's knowledge and understanding
Multiple choice quiz	A quick quiz based on the knowledge organiser
Key words	Tell your teacher if any key words from your knowledge organiser come up in lessons
Spelling Tests	Using the key words, your teacher might give you some spelling tests
Extended Writing	Using this key information, create longer pieces of writing showing your specialist knowledge
Knowledge test	At the end of the unit, your teacher might give you a test based on your knowledge organiser

Using at Home	
Catching up	Use the knowledge organiser to catch up on any lessons you have missed
Quiz yourself	Read through the information, repeat it to yourself, cover and test your knowledge
Create Flashcards	Turn the information in to revision cards
Application	Use this information to add to any homework or classwork, including longer pieces of writing
Revise	Use the information to revise for any assessments or end of topic tests



## Humanities/CAPA



### GERMANY

Location in the world.  
States.  
Climate.  
Population.  
Festivals.  
Historical places.  
Influential people.  
Traditional food.



### RUSSIA

Location in the world.  
Countries.  
Regions.  
Climate.  
Population.  
Festivals.  
Historical places.  
Influential people.  
Traditional food.



### CHINA

Location in the world.  
Regions.  
Provinces.  
Climate.  
Population.  
Festivals.  
Historical places.  
Influential people.  
Traditional food.



What do you already know about these countries?



How are they different / similar?



How have they all changed in the last 50 years?



Find out about:  
Kandinsky;  
Paul Klee; and  
reflection painting.



## PREJUDICE / GROWING UP



1. **Prejudice defined:** What are prejudice and discrimination? How can we challenge prejudice?
2. **Gender gap:** Why are women paid different wages to men? How is this an inequality?
3. **Religion:** What is the cause of conflict between different religions? Does it matter if people worship different gods or idols?
4. **Disabilities:** What is disability prejudice? How can we be inclusive of others with disabilities?
5. **Ethnic minorities:** Why do ethnic minorities get treated differently? What should we do to stop racism?
6. **Agism:** How can we define agism? Why is it harder for people over 50 to get work?

1. **Changing bodies:** What are the changes that occur in boys' and girls' bodies during puberty? How can we look after our bodies as we grow?
2. **Changing emotions:** How might our thoughts and feelings change during puberty? How can we deal with difficult feelings and moods?
3. **Just the way you are:** Is there an ideal kind of body? What information can affect how we think and feel about ourselves and our bodies?
4. **Relationships:** What is a loving relationship? What kinds of loving relationships are there?
5. **Let's talk about sex:** What is a sexual relationship and how can we have one? What type of physical contact is acceptable and how should we respond?
6. **Human reproduction:** How is a baby conceived? What is contraception? How does a baby grow? How is a baby born?

# Term 5 - KS4 PEARSON EDEXCEL MATHEMATICS

Probability and events; Transformations

## PROBABILITY AND

Topic/Skill	Definition/Tips	Example
1. Probability	<p>The <b>likelihood/chance</b> of something happening.</p> <p>Is expressed as a number <b>between 0 (impossible) and 1 (certain)</b>.</p> <p>Can be expressed as a fraction, decimal, percentage or in words (likely, unlikely, even chance etc.)</p>	
2. Probability Notation	<b>P(A)</b> refers to the <b>probability that event A will occur</b> .	P(Red Queen) refers to the probability of picking a Red Queen from a pack of cards.
3. Theoretical Probability	$\frac{\text{Number of Favourable Outcomes}}{\text{Total Number of Possible Outcomes}}$	Probability of rolling a 4 on a fair 6-sided die = $\frac{1}{6}$
4. Relative Frequency	$\frac{\text{Number of Successful Trials}}{\text{Total Number of Trials}}$	<p>A coin is flipped 50 times and land Tails 29 times.</p> <p>The relative frequency of getting T = <math>\frac{29}{50}</math></p>
5. Expected Outcomes	To find the number of expected outcomes, <b>multiply the probability by the number of trials</b> .	<p>The probability that a football team wins is 0.2 How many games would you expect them to win out of 40?</p> <p><math>0.2 \times 40 = 8 \text{ games}</math></p>

## TRANSFORMATIONS

	The shape does not change size or orientation.	
2. Column Vector	In a column vector, the <b>top</b> number moves <b>left (-) or right (+)</b> and the <b>bottom</b> number moves <b>up (+) or down (-)</b>	$\begin{pmatrix} 2 \\ 3 \end{pmatrix}$ means '2 right, 3 up' $\begin{pmatrix} -1 \\ -5 \end{pmatrix}$ means '1 left, 5 down'
3. Rotation	<p>The size does not change, but the <b>shape is turned around a point</b>.</p> <p>Use tracing paper.</p>	<p>Rotate Shape A 90° anti-clockwise about (0,1)</p>
4. Reflection	<p>The size does not change, but the shape is <b>'flipped'</b> like in a <b>mirror</b>.</p> <p>Line <math>x = ?</math> is a <b>vertical line</b>.            Line <math>y = ?</math> is a <b>horizontal line</b>.            Line <math>y = x</math> is a <b>diagonal line</b>.</p>	<p>Reflect shape C in the line <math>y = x</math></p>
5. Enlargement	The shape will get <b>bigger or smaller</b> . Multiply each side by the <b>scale factor</b> .	<p>Scale Factor = 3 means '3 times larger = multiply by 3'</p> <p>Scale Factor = <math>\frac{1}{2}</math> means 'half the size = divide by 2'</p>

# AQA GCSE Chemistry (Combined Science) Unit 2: Bonding, Structure and Properties of Matter

## Formation of Ions

Ions are charged particles. They can be either positively or negatively charged, for example  $\text{Na}^+$  or  $\text{Cl}^-$ .

When an element loses or gains electrons, it becomes an ion.

Metals **lose** electrons to become **positively charged**.

Non-metals **gain** electrons to become **negatively charged**.

Group 1 and 2 elements **lose** electrons and group 6 and 7 elements **gain** electrons.

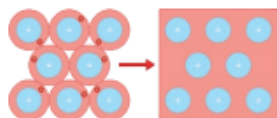
Group	Ions	Element Example
1	+1	$\text{Li} \rightarrow \text{Li}^+ + \text{e}^-$
2	+2	$\text{Ca} \rightarrow \text{Ca}^{2+} + 2\text{e}^-$
6	-2	$\text{Br} + \text{e}^- \rightarrow \text{Br}^-$
7	-1	$\text{O} + 2\text{e}^- \rightarrow \text{O}^{2-}$

## Metals and Non-metals

**Metals** are found on the **left-hand side** of the **periodic table**. Metals are strong, shiny, malleable and good conductors of heat and electricity. On the other hand, non-metals are brittle, dull, not always solids at room temperature and poor conductors of heat and electricity. **Non-metals** are found on the **right-hand side** of the **periodic table**.

## Metallic Bonding

Metallic bonding occurs between **metals only**. Positive metal ions are surrounded by a **sea of delocalised electrons**. The ions are tightly packed and arranged in rows.



There are strong electrostatic forces of attraction between the positive metal ions and negatively charged electrons.

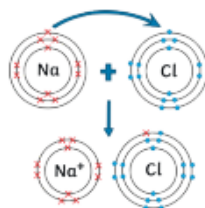
Pure metals are too soft for many uses and are often mixed with other metals to make alloys. The mixture of the metals introduces different-sized metal atoms. This **distorts the layers** and **prevents them from sliding over one another**.

This makes it harder for alloys to be bent and shaped like pure metals.



## Ionic Bonding

Ionic bonding occurs between a metal and a non-metal. Metals lose electrons to become positively charged. Opposite charges are attracted by electrostatic forces – an ionic bond.



### Ionic Compounds

Ionic compounds form structures called giant lattices. There are **strong electrostatic forces of attraction** that **act in all directions** and act between the **oppositely charged ions** that make up the giant ionic lattice.



### Properties of Ionic Compounds

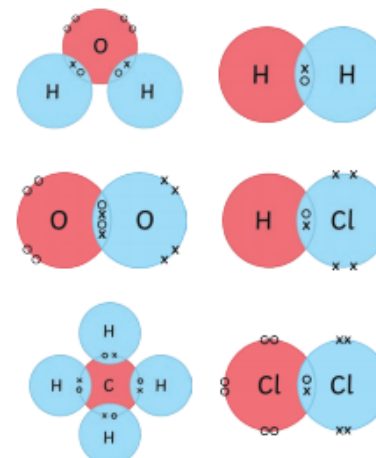
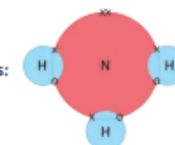
- High melting point – lots of energy needed to overcome the electrostatic forces of attraction.
- High boiling point
- **Cannot conduct electricity in a solid** as the ions are not free to move.
- Ionic compounds, when **molten** or in **solution**, can **conduct electricity** as the ions are free to move and can carry the electrical current.

## Covalent Bonding

**Covalent bonding** is the sharing of a pair of electrons between atoms to gain a full outer shell. This occurs between **non-metals only**. Simple covalent bonding occurs between the molecules below. Simple covalent structures have **low melting and boiling points** – this is because the **weak intermolecular forces** that hold the molecules together break when a substance is heated, not the strong covalent bonds between atoms. They **do not conduct electricity** as they do not have any free delocalised electrons.

Dot and cross diagrams are useful to show the **bonding in simple molecules**. The **outer electron shell** of each atom is represented as a **circle**, the circles from each atom overlap to show where there is a **covalent bond**, and the electrons from each atom are either drawn as **dots or crosses**. There are **two different types of dot and cross diagram** – one with a circle to represent the outer electron shell and one without.

You should be able to draw the dot and cross diagrams for the following simple covalent structures: chlorine, oxygen, nitrogen, water, ammonia, hydrogen chloride and methane.



## Term 5 – 2020/21 – Chilham class

### Religious Education – Judaism

#### 10 facts about Judaism

- Judaism is the religion of Jewish people. It originated around 4000 years ago among a people called the Hebrews, nomadic people of the Middle East (where Africa, Asia and Europe meet). Nomadic means someone who lives by travelling from place to place.
- **Abraham is seen as the father of the Jewish religion.** Abraham's story is told in the Book of Genesis (the first book of the Hebrew Bible). Jews believe that Judaism began when Abraham began to worship one God instead of the many idols or statues his father had done.
- Abraham is said to have made an agreement with God, known as the Covenant, in which he promised to be faithful and teach his laws to the world. **The core Jewish religious belief is that there is one eternal God who is a spirit and has no human form.**
- The Torah is the most holy Jewish text, given to the Jews by Moses around 1250 B.C. Torah means teachings in Hebrew.
- There are **four important stages in Jewish life**: birth, becoming an adult, marriage and death.
- The **synagogue** is a building where Jews go to worship God. The word synagogue means 'meeting place' in Greek.
- **Teachers of the Jewish faith are called rabbis.** They lead worship in the synagogue, conduct marriage and funeral ceremonies and give people advice on religious matters.
- The **Sabbath** (from sunset on Friday to sunset on Saturday) is the Jewish holy day.
- **Important Jewish festivals** include Rosh Hashanah (Jewish New Year), Yom Kippur (the Day of Atonement), Passover and Hannukah, the festival of lights.
- Religious Jews can be **Orthodox** (people who follow the laws of the Torah very strictly) and **Progressive** (people who have adapted the Torah teachings to modern life).

