

Chemistry: Atoms & Matter

Welcome to your term one assessment. This term's context is **Equity and Equality**. In science, we learnt February 11 was **International Day for Women and Girls in Science** because fewer girls and women are pursuing careers in science, technology, engineering and mathematics.

In particular, two branches of science that are very male-biased are chemistry and physics. So, for this term, supporting equity in science education, we have been learning chemistry. In particular, we have been exploring atoms, matter and the properties and behaviour of particles across three common states - solids, liquids and gases.

You now have the opportunity to study one of these states of matter in detail and apply your learnings to something you are familiar with and interested in learning. The catch is, you need to be discussing your object at the particle level!

You need to apply your knowledge to discuss one of the following concepts presented on this page.

- Discuss** how thermal expansion makes a hot air balloon rise.
- Discuss** why electrical wires are not hung tight.
- Discuss** why aerosol cans have a warning sign on them not to leave them in the sun.
- Discuss** why pipes have bends in them.
- Discuss** why petrol can disappear from a motorbike tank sitting full sun.
- Discuss** how thermal expansion affects a thermometer.
- Discuss** why bridges have expansion joints.
- Discuss** thermal expansion in potholes.

What you need to write about for your assessment

Welcome to your Year 9 Assessment - Term One.

1. Use Google Slides, Doc or paper to publish your Scientific Information.
2. Set your information out clearly into the parts below.
3. Write your name and **Thermal Expansion and Particle Motion** on your page.
4. Create ONE-TWO page information sheet, including images and diagrams.
5. Use font size no larger than 12.
6. Work individually.
7. Use your **Writing in Science** information. Evidence will be looked for in your writing and assessed accordingly.
8. **Resubmission** will not be granted but adequate feedback/feedforward will be given at predetermined checkpoints ahead of submission (evidence should be kept).

A little hint when using GOOGLE	<p>You must find information that relates to what you have been learning in class and that you understand.</p> <p>The web can be very overwhelming and often you will find information that you will not understand. This means it could be way above the level we are learning in class. If doubt, ask me. Remember to Google Search for Kids as a starting point, and use Science Websites to help.</p>
Honesty is key - it is all about authenticity	<ul style="list-style-type: none"> ● I understand that the work I hand in must be my own. I have used the internet as a resource, but all by writing is my work. I have NOT copied sentences or paragraphs from the internet or any other source. ● I understand that if I am found to have submitted work that is not my own, I will receive no grade for this assessment.
Parts A, B and C	<p>Your assessment is divided into three critical parts based on an image you choose. You are to explore one of the images provided by your teacher and discuss thermal expansion and particle motion and relate this to your image. For example: Select ONE of the picture to review.</p> <ul style="list-style-type: none"> ● Discuss how a hot air balloon works. ● Discuss why aerosol cans have a warning sign on them not to leave them in the sun. ● Discuss why bridges have expansion joints. ● Discuss thermal expansion and potholes. ● Discuss why some pipes have bends in them. ● Discuss why electrical power wires and lines are not hung tautly (not tight). ● Discuss how a lab thermometer works. <p>Part A:</p> <ul style="list-style-type: none"> ● Describe (AT) the properties for the state of matter you are working with, for example, is your image showing a solid, liquid or gas, and what are its properties? <p>Part B</p> <ul style="list-style-type: none"> ● Explain (ABOVE) the process of thermal expansion at the particle level for your state of matter, and include labelled particle diagrams to support your answer. <p>Part C</p> <ul style="list-style-type: none"> ● Discuss (BEYOND) comprehensively how thermal expansion relates to your image using scientific terms and language <p>Plus...</p> <ul style="list-style-type: none"> ● Include a reference list of the websites (URL's) you visited to support your research and writing (this may be on a separate page). ● Support your writing with labelled images and diagrams. ● Proofread your work and always check against the assessment criteria before handing in. Check-in with your teacher.
Resources	<p>You will need to use your class notes and the internet.</p>
Timeframe	<p>You will have two lessons to complete your work plus your own homework time.</p>
Due date	<p>You will need to submit your assessment on the specified date.</p>

TAAB: The Structure of Matter

Year Level	TOWARDS	AT	ABOVE	BEYOND
<p>Year 9</p>	<p>You have yet to show an understanding of the structure of matter</p>	<p>You have shown some understanding of the structure of matter</p>	<p>You have shown an in-depth understanding of the structure of matter to describe the formation of more complex structures, using examples</p>	<p>You have shown comprehensive understanding of the structure of matter to describe the formation of more complex structures, using examples in everyday life</p>
<p><i>Breaking this down for you - in other words ... (Note: this is separate class discussion)</i></p>		<p><i>In-depth</i> means you have written detailed answers (supported with definitions, detailed explanations, URLs, examples and evidence showing a thorough understanding of the content)</p> <p><i>Your work is your own (there is no evidence of work copied from the website or any other resource)</i></p> <p><i>You have used a variety of linking words in your writing (from our writing in Science worksheet)</i></p>	<p><i>Comprehensive</i> means you have researched, compared and discussed and written extensive answers (supported with your own labelled diagrams, URLs, and strong evidence of additional research and interpretation of your understanding of the content)</p> <p><i>Your work is your own (there is no evidence of work copied from the website or any other source)</i></p> <p><i>You have used a variety of linking words in your writing (from our writing in Science worksheet)</i></p> <p><i>You have gone beyond the assessment requirements and can link back your learnings and generalise. In other words, you fully understand what you are presenting and your work is relative to the assessment requirements</i></p>	