

Plat Douet School



Science  
Policy

## Plat Douet School Science Policy

### **Introduction and Vision**

At Plat Douet, we are dedicated to fostering an environment where every child can build a secure and comprehensive understanding of the world through the lens of science. Our vision is to ignite curiosity and inspire a lifelong love for exploration in every child, ensuring they leave with a strong foundation in scientific knowledge and skills. Science at Plat Douet is more than just learning facts; it's about cultivating critical thinking, problem-solving abilities, and an appreciation for the natural world that extends beyond the classroom.

Through engaging, hands-on experiences in biology, chemistry, and physics, we aim to create a welcoming and inclusive environment where every child—regardless of their background—can explore, ask questions, and confidently connect their learning to real-world applications. We believe that fostering curiosity and a willingness to learn from mistakes is key to developing resilience and scientific understanding. Our curriculum is designed to encourage students to analyse, predict, and understand various processes, preparing them for future challenges.

Our goal is to provide all students with opportunities to:

- **Acquire scientific knowledge and skills** that allow them to communicate ideas using appropriate scientific language and apply mathematical concepts in their analysis.
- **Recognise the broader implications of science**, including its impact on society, the economy, and the environment.
- **Engage in inquiry-based learning** through experimentation and investigation, fostering a deeper understanding of scientific processes.
- **Discover influential scientists** who have contributed to society's understanding of the world and made positive changes.
- **Be curious, pose questions, make mistakes, and try again**, developing a mindset of perseverance and exploration.
- **Work scientifically**, understanding the principles, methods, and processes involved in scientific inquiry.

At Plat Douet, inclusivity is at the heart of our approach. We ensure that every child is given meaningful opportunities to engage with science, explore both the natural and human-made environments, and use scientific terminology to explain phenomena and procedures. By the time children leave Year 6, they will have experienced a wide range of phenomena, asked thoughtful questions, observed patterns, and gained a deep understanding of how science shapes the world.

We believe that science education should prepare children not just for academic success, but for life. By cultivating creativity, collaboration, and environmental stewardship, we ensure that our students are equipped with the skills and mindset necessary to thrive in an ever-changing world. Our goal is to nurture informed, responsible citizens who are ready to contribute meaningfully to society, armed with the knowledge and skills to shape the future.

## **Planning**

The science leader is responsible for the long and medium-term science planning, which can be found in 'Teacher's Sensitive data: Subjects: 1. Planning 2023-2024'. These plans, reviewed annually, are aligned with the Science Jersey Curriculum. Teachers are expected to follow these plans to ensure consistency in science teaching. The science leader also manages planning and resources, creating detailed lesson plans and ensuring the availability of necessary materials. Teachers are to adhere to these plans, contributing to a structured science curriculum.

## **Science Ambassadors**

Science Ambassadors will be appointed to support science initiatives in their classrooms and across the school. They will work closely with the science lead to help monitor science learning, participate in assemblies, and assist with science-related activities and events, such as Science Week and Plastic Free July. The Science Ambassadors will also act as role models to promote scientific inquiry and enthusiasm among their peers, helping to enhance science displays and report on scientific progress in their classrooms.

## **Marking/Assessment and Monitoring**

Science work is marked live with a focus on spelling and correct use of scientific vocabulary. Additionally, students complete:

- Vocabulary Assessment: Students will undergo a vocabulary assessment at the start and end of each topic.
- TAPS Assessment: Conducted twice each term, with teachers required to upload student names onto the TAPS assessment document.
- Substantive knowledge assessments pre and post topic.

Monitoring and assessment will involve regular classroom observations and feedback sessions to evaluate and improve teaching methods. We will conduct periodic workbook reviews and use digital platforms for tracking student progress. The analysis of TAPS assessment data will inform targeted teaching adjustments. The science coordinator will lead these monitoring strategies, providing support to teachers and ensuring that feedback is constructively used to enhance the curriculum.

## **Displays/Scientific Language**

In addition to maintaining school science displays:

- Schema Map Display: Teachers must create and regularly update a schema map display in their classrooms, representing children's learning (schema), misconceptions, and vocabulary. Vocabulary must be displayed.

## **Stakeholders**

We are committed to actively engaging pupils, staff, and parents in our science education program. Science Ambassadors will support the science lead in promoting student-led initiatives and helping with assemblies. Staff involvement in curriculum development will be enhanced through frequent, focused meetings and professional development opportunities, fostering interdisciplinary collaboration. To increase parental engagement, we will maintain ongoing communication about student progress and parents will also be encouraged to participate in school events like science fairs, further integrating our science education community. We have developed parental workshops focused on science teaching. These workshops are designed to enhance the science learning experience for students by providing parents with the tools and knowledge to support their children's scientific education at home. Regular feedback will be collected to assess the impact of these workshops. Regular feedback sessions and suggestion forums will be established for pupils to contribute ideas, and student-led projects will be promoted to encourage creativity.

## **Teaching of Science**

Weekly science lessons are provided, with cross-curricular links made where possible. The science leader monitors teaching and learning through various methods, including lesson observations and work scrutiny. Teachers are responsible for following lesson plans and using the appropriate resources. Special events and initiatives are integral to our science curriculum. Key events include Science Week, Walk to School Week, and Plastic Free July. These events provide hands-on learning experiences and promote eco-friendly practices among students. By participating in these initiatives, students gain a deeper understanding of scientific principles and their applications in real-world contexts.

## **Presentation**

Students will use the green science books. KS1 should use the large, lined pages whereas KS2 should use thin lined pages. Students must adhere to the presentation guidelines found in Q:\Policies\Presentation GLines for books\Guidelines 2023 - 24 - AS\SCIENCE which should be glued into the inner front cover page. When starting a new topic, the first page should have the topic's knowledge organiser which should be referenced throughout learning. Before delivering the first lesson, students must complete the vocabulary assessment.

## **Health and Safety**

General risk assessments are available from CLEAPS and the 'Be Safe Guide'. Teachers are responsible for amending these assessments as necessary for specific tasks and ensuring students understand safety issues.

## **Resources**

The school maintains a central bank of science resources, managed by the science leader. Science Ambassadors can assist teachers in ensuring resources are used correctly and returned in good condition. All staff members are responsible for using and returning these

resources correctly and letting the science lead know if they require additional resources or if resources are running low.

### **Equal Opportunities**

All children are given equal opportunities in science, with the science leader monitoring to ensure no concerning patterns in attainment or engagement. This is through differentiated lessons that cater to diverse learning styles and abilities, ensuring every child can fully engage. Enrichment opportunities, such as Science Clubs, Science Ambassadors, and whole-school Science Week with a focus on STEM, further enhance learning for all students. Inclusive practices ensure Multi-Lingual Learners (MLL) and children with special educational needs (SEN) have access to necessary support and resources. Our curriculum highlights diverse scientists and contributions from different cultures and backgrounds, fostering a sense of representation and inspiring all students to see themselves as potential scientists.

### **Working Scientifically**

‘Working Scientifically’ skills are taught in relation to the program of study, emphasizing various scientific processes and enquiry skills and are linked to the TAPS assessment.

### **Early Years**

In the Early Years Foundation Stage, science is taught as part of ‘Understanding the World’, with curriculum planning based on the ‘Development Matters’ and ‘Early Learning Goals (ELGs)’.

### **Eco**

The school integrates eco-friendly practices throughout its curriculum, including science and English, and will be maintained by an ECO team. KS1 and KS2 are taking part in the walk to school challenge which is managed by the science lead. It is the teacher's responsibility to record children's travel each day which indicates if they receive a rewards badge. The science lead will distribute badges at the beginning of the next month. Our science curriculum integrates eco-friendly practices, supported by initiatives such as the recycling program and Plastic Free July. The Eco team, alongside the Science and Eco Clubs, will lead these efforts, promoting environmental awareness and responsibility among students. These initiatives will be regularly reviewed and refined to ensure they effectively contribute to our sustainability goals.

### **Extracurricular**

Science and Eco Clubs foster curiosity and practical engagement through hands-on experiments and environmental initiatives. These clubs enrich students' learning by exploring scientific concepts, promoting sustainability, and participating in events like Science Week and Plastic Free July, aligning with our educational objectives.

## **Assemblies**

Science assemblies play a vital role in promoting scientific literacy and enthusiasm among students. Science Ambassadors will help organize and present during assemblies throughout the school year, showcasing experiments, talking about key science dates, and highlighting important scientific achievements.

## **Rights Respecting**

The science curriculum supports the development of specific Articles of the Rights Respecting School, including the right to find out things and share ideas (Article 13), the right to a good quality education (Article 28), and the right to use talents and abilities to respect others and the environment (Article 29).

## **Co-operative Learning**

Science lessons incorporate cooperative learning approaches, following the PIES principles. Teachers use a range of structures to match the type of learning and employ a no hands-up approach in classrooms.

September 2025 - Catriona Fells

## Appendix 1

Long Term Plan proforma example:

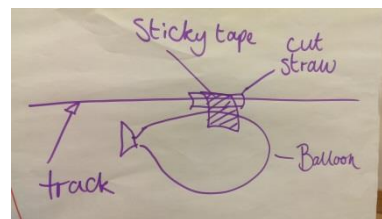
Year ...			
	Autumn	Spring	Summer
Thinking Scientifically			
Topic 1 Requirements			
Topic 2 Requirements			
TAPS Assessments			

Medium term plan proforma example:

<u>Key Learning - Sound</u>				<u>Enrichment opportunities</u>	
<u>Cross Curricular links</u>				<u>TAPS Assessment</u>	
<u>Prior learning</u>		<u>Common Misconceptions</u>		<u>Key Vocab</u>	
<u>Learning Objective</u>	<u>Assessment questions</u>	<u>Key Learning</u>	<u>Activity</u>		<u>Lesson specific vocab</u>
<u>Scientific Enquiry Key knowledge</u>					

Plan for Focused Assessment of Science

<p><b>Topic:</b> Forces</p>	<p><b>Year 3</b> Age 7-8</p>	<p><b>Title:</b> Balloon Rockets</p>
<p><b>Working Scientifically</b> <b>Review:</b> Using results to draw simple conclusions, suggest improvements and raise further questions.</p>		<p><b>Conceptual Knowledge Context</b> Compare how things move on different surfaces.</p>
<p><b>Assessment Focus</b></p> <ul style="list-style-type: none"> <li>• Can children use results to predict and explain what may happen on the next attempt?</li> <li>• Can children suggest improvements?</li> </ul>		
<p><b>Activity</b> Set up a balloon rocket with the children (inflated balloon taped to straw, string through the straw, let go of balloon to shoot along string). Ask them to discuss what they think will happen if different tracks of different materials are used e.g. wool, garden string, plastic coated wire, etc. In groups or as a class, test out different tracks. Each time predict the distance the rocket will go, applying knowledge of friction and previous runs. Children could record predictions and results OR suggestions of improvements to the method after the investigation.</p> <p><b>Adapting the activity</b> <b>Support:</b> Pre-prepared chart for recording predictions and measurements <b>Extension:</b> Extra column to note explanations for results</p> <p><b>Key Questions</b></p> <ul style="list-style-type: none"> <li>• What do you think will happen when we let go of the balloon?</li> <li>• Do you think it will be different if we use different tracks? Why?</li> <li>• How far do you think it will go on this track? Why?</li> <li>• Which balloon went furthest?</li> <li>• Why did that balloon go further/not as far?</li> <li>• Which track do you think was the best?</li> <li>• How accurate/fair do you think our results are?</li> <li>• What could we do to be more accurate/fair?</li> </ul>		






## Assessment Indicators

**Not yet met:** Describes differences between different balloon tracks.

**Meeting:** Explanations of results use comparisons to previous results to make further predictions and suggest improvements for investigation set up, *e.g. need a longer track, we didn't use the same balloon.*

**Exceeding:** Suggests improvements with reasons, *e.g. it's not fair because we used different balloons, the balloon could have gone further if the track was longer so we need to do it again.*

*including scalpels, knives, syringe needles, seekers, etc (2013)*

Source	Hazard	Comment
Scalpels, knives and other blades	 DANGER	Cuts and puncture wounds can lead to infection, especially if the blade or point is contaminated by contact with living or once-living material.
Syringe needles	 DANGER	Careless use and handling of scalpels, syringes with needles, seekers and other sharps can lead to cuts and puncture wounds.
Seekers and other sharps	 DANGER	Sharp scalpels are safer to use than blunt ones because there is less risk of them slipping as less force needs to be used. Carrying scalpels, syringes with needles, seekers and other sharps especially in crowded rooms, can present a hazard to the user and others. Carelessly-disposed sharps can present a hazard to waste handlers and others.

### Typical control measures to reduce risk




- Follow your teacher's guidance on safe practice in relation to the material being dissected.
- Cut in a direction away from yourself and where possible cut using a cutting board, dissection tray or pad or similar.
- Wear eye protection when changing scalpel blades or cutting material likely to "flick" (eg, cartilage or bone).
- Count sharps at the beginning and end of the lesson.
- Carry sharps with the blade or point protected, eg in a shallow tray, and do not carry them at all if you are likely to be jostled..
- Dispose of used sharps in a proper, safe container, eg a sturdy box, clearly labelled, and sealed and wrapped before disposal.

### Assessing the risks

- *What are the details of the activity to be undertaken? What are the hazards?*
- *What is the chance of something going wrong?*  
*Eg, Could the user or somebody else be cut or stabbed by accident?*
- *How serious would it be if something did go wrong?*
- *How can the risk(s) be controlled for this activity?*  
*Eg, Can it be done safely? Does the procedure need to be altered?*

### Emergency action

- **Minor cuts** Rinse the wound with water. Get the casualty to apply a small, sterile dressing.
- **Severe cuts** Lower the casualty to the floor. Raise the wound as high as possible. If feasible, ask the casualty to apply pressure on or as close to the cut as possible, using fingers, a pad of cloth or, better, a sterile dressing (adding further layers as necessary). If the casualty is unable to do so, apply pressure yourself, protecting your skin and clothes from contamination by blood if possible. Leave any embedded large bodies and press around them. Send for a first aider.

Situation	Hazard	Comment
<p><b>Electric power distribution</b> 230 V ac and above at high currents (over 5 mA).</p>	 ELECTRIC SHOCK / BURN	<p><i>In non-school contexts:</i> over-head power lines and local sub-stations could cause accidents if children behave foolishly.</p>
<p><b>Home and school</b> Above 28 V ac or 40 V dc and at currents over 5 mA. This includes the 230 V ac mains supply.</p>	 ELECTRIC SHOCK / BURN	<p><i>In school science:</i> problems may arise from terminals of high voltage (high tension, HT) supplies or low-voltage units with an HT outlet (as some supply 150 mA); also in activities involving electrophoresis, model transformers or conductivity of molten glass.</p> <p><i>In non-school contexts:</i> problems arise due to poor insulation (damaged wiring and plugs), incorrect wiring, over-loaded circuits, poor earthing or vandalism.</p>
<p><b>School science investigations</b> Less than 28 V ac or 40 V dc and at currents over 5 mA. This includes almost all work with batteries in school or elsewhere.</p>	<p>LOW ELECTRICAL HAZARD</p>  TOXIC / CORROSIVE	<p>Most school circuit work, including electrolysis, is in this category (although problems could arise if currents over 10 A were used).</p> <p>Some cells, batteries and accumulators contain TOXIC or CORROSIVE materials.</p>
<p><b>Everywhere: eg, static electricity</b> Any voltages at very low currents (well below 5 mA)</p>	<p>LOW HAZARD</p>	<p>Examples include the van de Graaff generator (but <b>not</b> induction coils which may give over 5 mA). Electronic equipment nearby may be damaged by static discharges or electromagnetic fields.</p>

**Typical control measures to reduce risk**

- Use the lowest voltage possible (and, for electrolysis, the lowest current and concentration that gives good results).
- Avoid exposed conductors which are live above 28 V.
- Avoid the possibility of water coming into contact with conductors which are live above 28 V.
- Check that primary and secondary insulation (ie, both layers of plastic coating) are in good condition.
- Avoid over-loaded circuits, too many plugs in one socket, etc.
- Check that plugs are correctly wired with appropriate fuses.
- Ensure good earth connections where necessary.

**Assessing the risks**

- *What are the details of the activity to be undertaken? What are the hazards?*
- *What is the chance of something going wrong?*  
Eg, *Accidentally touching a live component through poor design or poor maintenance.*
- *How serious would it be if something did go wrong?*  
Eg, *Could a current flow through the heart? How large a voltage and/or current?*
- *How can the risk(s) be controlled for this activity?*  
Eg, *Can it be done safely? Does the procedure need to be altered?*

**Emergency action**

- **Electric shock**      **Take care for your own safety.**  
Break contact by switching off or removing the plug. If this is not possible, use a wooden broom handle or wear rubber gloves to pull the casualty clear. See a doctor.  
If the casualty is unconscious, check that airways are clear and that the casualty is breathing and has a pulse. If so, place the casualty in the 'recovery position'. If a pulse is found but the casualty is not breathing, artificial ventilation is necessary. If no pulse is found and the casualty is not breathing, cardio-pulmonary resuscitation is necessary.

## Transferring (Handling) Solid Chemicals

### Why 'transferring' and not 'handling'?

It is better to use the word 'transferring' as opposed to 'handling' because 'handling', if taken literally, means 'using your fingers and hands'. Many chemicals are toxic, corrosive or irritant to the skin so directly 'handling' such chemicals is never a good idea.

### Should I wear gloves?

The use of chemically resistant gloves should always be considered but wearing gloves reduces manual dexterity, gives rise to an environmental issue (because they do not degrade very quickly in the waste) and are expensive for the school. More importantly, if a chemical is on the gloves, the wearer may not realise it is there and so may wipe that chemical on other parts of the body (eg, eyes). However, if there are cuts which cannot be covered or other skin issues on the hand then gloves should be worn. For a small number of chemicals which are corrosive but do not immediately produce a sensation of burning (eg, phenol) they should also be worn.

### Transferring solids

When transferring solid chemicals, the main risk is of spilling a hazardous solid.

A spatula is the correct tool for transferring solids from one container to another. Always check that the spatula is clean, and do not use the same spatula for different solids, unless cleaned in water and dried. Spatulas come in various shapes and sizes so beware of instructions that simply say "use a spatula-full".

#### **Nuffield spatula**

This is the most common spatula used by students in schools, about 14 cm long. But with either end available for use, care must be taken in being using the same end and to clean and dry the spatula before changing to another chemical. The 'curved' end is the most suitable to use.



#### **Chattaway spatula**

This is available in different sizes. Students should use the small size version, about 10 cm long; teachers and technicians may use larger versions, about 20 cm long, in the preparation of solutions. There are also micro-sized versions.



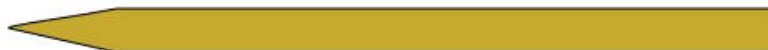
#### **Trulla (trowel spatula) and Spoon Spatulas**

This is usually only used by technicians or teachers for transferring larger quantities of solids.



### DIY spatula - use a wooden splint

If you have used a wooden splint to transfer one solid chemical, the end can then be cut off with scissors and another chemical can be transferred with the same splint. It can be cut to a point to transfer tiny amounts of solids.



### Mixing solids

The solids to be mixed should each be placed on separate pieces of paper (or in plastic weighing boats) and the solids then poured gently from one onto the other, back and forth. Repeat the pouring action about 10 times so that there is thorough mixing. This is the only safe way of preparing explosive mixtures and is good practice for all solid mixtures.

## Transferring (Handling) Liquid Chemicals

### Why 'transferring' and not 'handling'

It is better to use the word 'transferring' as opposed to 'handling' because 'handling', if taken literally, means 'using your fingers and hands'. Many chemicals are toxic, corrosive or irritant to the skin so directly 'handling' such chemicals is never a good idea.

### Should I wear gloves?

The use of chemically resistant gloves should always be considered but wearing gloves reduces manual dexterity, gives rise to an environmental issue (because they do not degrade very quickly in the waste) and are expensive for the school. More importantly, if a chemical is on the gloves, the wearer may not realise it is there and so may wipe that chemical on other parts of the body (eg, eyes). However, if there are cuts which cannot be covered or other skin issues on the hand then gloves should be worn. For a small number of chemicals which are corrosive but do not immediately produce a sensation of burning (eg, phenol) they should also be worn.

### Transferring liquids

When transferring chemicals which are liquid, the main risk is of spilling or splashing a hazardous liquid or a hazardous aqueous solution.

Spills occur when people attempt to pour liquids from a large container (bottle) into a small container such as a test tube. There is a risk of liquids dribbling down the side of the bottle or measuring cylinders, possibly damaging labels, making the bottle unsafe to pick up for the unwary, or producing fumes in the store as the liquid evaporates. It is better to pour from large bottles into (labelled) beakers first.

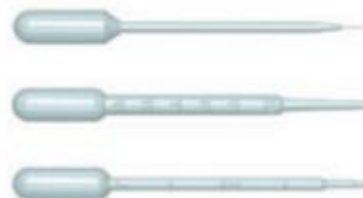
#### *Pouring from bottles, measuring cylinders and beakers*

One way of avoiding dribbles is to pour down a glass rod into a container via a funnel.



#### *Small volumes of liquid (up to 3 ml)*

Use plastic teat pipettes or dropping bottles.



#### *Using automatic or volumetric pipettes*

More sophisticated pipettes are available for other purposes.

### Mixing liquids

#### *Stirring*

Spatulas should not be used for stirring. Stirring rods made of glass or plastic should be used. Over enthusiastic stirring can cause a glass stirrer or container to break or the liquid to splash out. Some laboratories now have magnetic stirrers.

### Filling a test tube

If using a test tube, do not fill it more than one-fifth full. To mix the contents, 'waggle' the test tube from side to side. Do not shake it up and down, especially not with a thumb over the end.