

# Design and Technology

## Medium Term Plan

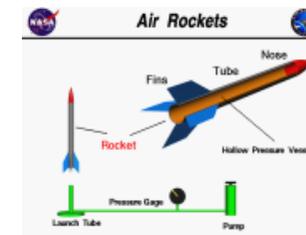
### Y3 - Structures and Mechanisms



| Y3 – Structures and Mechanisms Autumn 2 |   |
|---|---|
| <b>Class Text</b>                       | Vlad and the Great Fire of London                                   |
| <b>Hook</b>                             | Children will investigate pneumatic devices                         |
| <b>Topic Outcome</b>                    | Children will create pneumatic devices                              |
| <b>Topic Reflection</b>                 | Children will evaluate their product against a design specification |
| <b>Key Enquiry Questions</b>            | -   |

| Year Group | Learning   |
|------------|--|
| EYFS + KS1 | Structures, systems and mechanisms<br>Textiles<br>Food<br>Technology<br>Design<br>Make<br>Evaluate |
| KS2        | Structures, systems and mechanisms<br>Textiles<br>Food<br>Technology<br>Design<br>Make<br>Evaluate |

| Tier   | Vocabulary   |
|--------|--|
| Tier 1 | gas, air, move   |
| Tier 2 | design, develop, evaluate, function, mechanism, prototype, |
| Tier 3 | pneumatic, pressurized, device, industry,                  |



| Previous Skills  | Previous Knowledge   | Previous Understanding                      |
|--|--|---|
| Children will know how to use simple methods to fix wheels and axels to a product.<br>Children can make simple mechanisms pop up books, flap books | Children will know what wheels, axels and axel holders are.<br>Children can name simple commercial products that use wheels and axis to move.<br>Children came name 2D and 3D shapes | Children have started to understand forces. |

| Lesson   | Strand of Learning                   | Learning Objective                         | Lesson Description  | ARE Success Criteria   | Opportunities for Deeper Learning   |
|----------|--------------------------------------|--|---|--|---|
| Lesson 1 | SignificanceCause and consequence    | LO: Investigate pneumatic mechanisms.      | Children will be introduced to pneumatic mechanisms and their use in everyday and industrial design. They will use sources and artefacts to investigate the use of pressurised air. One question could be "What do all these devices have in common?" | I can investigate sources and artefacts to ask questions and draw conclusions. | I have noticed that...In my opinion...I agree with... because...  |
| Lesson 2 | EvaluateTechnical knowledge          | LO: Test pneumatic toys                    | Children will investigate a range of pneumatic devices. They will evaluate the products and express their preferences.Examples: blow-guns, air rocket, squeezey frog.   | I can test pneumatic devices and evaluate their effectiveness.                 | —   |
| Lesson 3 | Test and evaluate                    | LO: Design a pneumatic toy                 | Children will be given a design specification and design a toy that uses a pneumatic mechanism. They will use technical drawings and label the component parts.   | I can use technical knowledge and skill to design a pneumatic device.          | —   |
| Lesson 4 | Design                               | LO: Build a pneumatic mechanism            | Children will create their pneumatic device using technical knowledge and skills.   | I can build a pneumatic device.I can adapt my method where necessary.          | —   |
| Lesson 5 | Test and evaluateTechnical knowledge | LO: Evaluate the effectiveness of a design | Children will evaluate the effectiveness of their design against the design specification.  | I can use a design specification to evaluate my product.                       | My design has worked well because...I think that... is the most effective part of my design.I would change... if I made this product again. |

| Knowledge:   | Skills:  | Understanding:   |
|--|--|--|
| <p>Children will know what a pneumatic device means</p> <p>Children will know that pneumatic devices have existed throughout History- Blow Guns</p> <p>Children will know that pneumatic devices had a big impact on manufacturing, communication and transport during the industrial revolution</p> | <p>Children will be able to create a design specification based on technical knowledge</p> <p>Children will be able to make a pneumatic mechanism</p> <p>Children will be able to test and evaluate a design</p> | <p>Children will understand that pressurised air has created the force</p> |