

**INVESTIGATION**  
**YEAR 3 and 4: Spring 2**  
***Does hand span affect grip strength?***

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| <p><b>COVERAGE: Does hand span affect grip strength?</b><br/> <b>Pupils who are secure will be able to:</b></p> <ul style="list-style-type: none"> <li>- Recall key knowledge from previous units.</li> <li>- Apply knowledge in new contexts.</li> </ul> <p><b>When working scientifically, pupils who are secure will be able to:</b></p> <ul style="list-style-type: none"> <li>- Carry out a full scientific enquiry.</li> <li>-</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p><b>KEY LANGUAGE AND VOCABULARY:</b></p> <p>bar chart</p> <p>bone</p> <p>carbohydrate</p> <p>conclusion</p> <p>fat</p> <p>friction</p> <p>joint</p> <p>light source</p> <p>muscle</p> <p>opaque</p> <p>predict (KS1)</p> <p>protein</p> <p>shadow</p> <p>trustworthy</p> <p>variable</p> | <p><b>KNOWLEDGE AND FACT SHEET</b></p> <p>Pupils will revisit previous Knowledge Organisers.</p> <p><b>KEY QUESTIONS:</b></p> <ol style="list-style-type: none"> <li>1. If you investigate how hand span affects grip strength, what variable should you change?</li> <li>2. Which piece of measuring equipment can be used to measure hand span?</li> <li>3. Which piece of measuring equipment can be used to measure hand span?</li> <li>4. Which method step is incorrect?</li> <li>5. Which is the anomalous (odd) result?</li> <li>6. What are the missing units for the average size of fruit lifted?</li> <li>7. Which group lifted the smallest fruit?</li> <li>8. Which of these is a conclusion?</li> <li>9. Which of these does not improve the degree of trust?</li> <li>10. Suggest a method to test if the taller you are, the bigger your hand span is.</li> </ol> |
| <p><b>KEY SKILLS AND KNOWLEDGE</b></p> <p><b>Knowledge</b></p> <p><b>This unit revises the following key knowledge from the previous units</b></p> <p><b>Movement and nutrition</b></p> <ul style="list-style-type: none"> <li>- The muscular system in humans and some animals works with the skeleton for movement.</li> <li>- The main food groups (carbohydrates, protein, fats and oils, fibre, vitamins, minerals and water) and their simple functions.</li> </ul> <p><b>Forces and magnets</b></p> <ul style="list-style-type: none"> <li>- Friction is a contact force that acts between two surfaces to slow an object down.</li> <li>- Rougher surfaces have more friction between them than smoother surfaces.</li> </ul> <p><b>Rocks and soil</b></p> <ul style="list-style-type: none"> <li>- To understand the relationship between the properties of rocks and their uses.</li> </ul> <p><b>Light and shadows</b></p> <ul style="list-style-type: none"> <li>- To know that shadows are formed when the light from a light source is blocked by an opaque object.</li> </ul> |                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## Plant reproduction

- Flowers are the reproductive organs of a plant. The process of pollination is the transfer of pollen to the female (part of the) flower.
- The process of seed formation is the growth of a seed after pollination.

## Skills

This unit revisits the working scientifically skills covered in Year 3, including:

- Posing questions.
- Planning.
- Predicting.
- Observing.
- Measuring.
- Recording.
- Graphing.
- Analysing and drawing conclusions.
- Evaluating.

## ENRICHMENT:

- Children will be involved in the development of physical experiments to investigate all the questions that they are asked within the unit.
- The children will finish the unit with a shadow puppet display.

## Previous Learning:

The children have investigated what states of matter are and how their knowledge can help them understand the process of climate change.

## Future Learning:

The children will continue to develop their knowledge into muscle and nutrition and plant reproduction.

## School Drivers to Examine

Children will look at:

- [Creativity and Innovation](#) = the children will develop their ideas into how science can help in the production of new products and materials.