

Subject: Science

Year 3: Making Connections- Scientific enquiry

NC/PoS:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions

Prior Learning (what pupils already know and can do)

This unit revises and builds on learning from the previous Year 3 Kapow Science units

End Goals (what pupils MUST know and remember)

- Know the relationship between handspan and grip strength
- Know properties of a material and their suitability for different purposes

Key Vocabulary: bar chart, bone, conclusion, friction, joint, muscle, predict, trustworthy, variable

Sessions 1, 2 and 3: Use Kapow lessons 1,2 and 3 on Investigating grip strength. Use the lessons to recap and recall learning from the unit 'Movement and Nutrition'. Focusing on planning, gathering data and analysing, concluding and evaluating.

LO: Apply knowledge in new contexts.

Working scientifically LOs:

- To plan a pattern seeking enquiry.
- To gather and record data.
- To conclude and evaluate the investigation.

Children will identify variables and plan a comparative enquiry to investigate the relationship between hand span and grip strength. They will move on to gather data on whether hand span affects grip strength by measuring accurately and recording data in a table while competing in the grip championships. Finally, analysing group and class data to look for patterns and draw conclusions.

Session 4: Use Kapow Lesson 4: Extending

Recap and recall: Uses of everyday materials

LO: To use sets of data to inform design.

The children will explore how gloves made from different materials affect grip strength and compare results to inform design choices.

Does wearing gloves change your grip strength? Discuss the following:

- **Which glove will be worst for gripping the fruit?** (Answers may include leather gloves; medical gloves; oven gloves.)
- **Which glove will be best for gripping the fruit?** (Answers may include gardening gloves; wool gloves; rubber gloves.)

- **Will the best glove for gripping fruit make your grip better than no gloves?** (Answers may include yes, they will create more friction, improving grip; no, they will make it harder to grip the fruit.)

Investigate and then ask the questions again.

Vocabulary: material, property

Session 5: Use Kapow Lesson 5: Presenting

Recap and recall: Use the Light and Shadows knowledge organisers to play the game suggested in the lesson plan.

LO: To report on my findings using a shadow puppet display.

In this session the children will be summarising the enquiry process and their findings and presenting them through a puppet theatre show. Provide the children with some simple shadow puppets following the instructions provided (each group can reuse the puppets- they don't need one each). Children use the puppets to recap on joints in the body and identify that their puppets only have the shoulder and elbow joints; establish which joints are missing: hip, knee, ankle, neck.

Children write scripts and perform a puppet show of the investigation they have completed. This is a good opportunity to assess their understanding of the investigation's aim, method and conclusion.

Vocabulary: joint, opaque, light source, shadow