

GREAT GLIDER SHARE

Great Science Share
for SCHOOLS

What is the best material for the wing of a glider?

AGE RANGE: 5-7 years

OVERVIEW

Pupils will be inspired by the character, Rosa, a young engineer in the story 'Gary Vity' by Jules Pottle. Rosa is curious and explores the effects of gravity on objects around her. In this enquiry, pupils consider properties of materials and their suitability for wings of a glider. They undertake and draw conclusions from a simple comparative test, gathering evidence to decide which material is best for the wings of the glider. Much discussion will arise as to what 'best' means, and teachers can guide pupils to compare their gliders by measuring how far they travel in age-appropriate units, such as footsteps.

LEARNING OBJECTIVES

- To describe the simple physical properties of a variety of everyday materials
- To compare and group together a variety of everyday materials on the basis of their simple physical properties
- To identify and compare the suitability of a variety of everyday materials, for particular uses

WORKING SCIENTIFICALLY FOCUS

- To carry out a simple comparative test
- To use observations and ideas to suggest answers to questions
- To gather and record data to help in answering questions
- To draw simple conclusions from evidence

RESOURCES

FOR EACH GROUP (2/3 pupils)

- 1x glider frame made from foamboard or cardboard
- 2 x rubber bands per group
- ballast weight: 5g for A4, 10g for A3 - this can be Blu-tack or paperclips (1 standard paperclip is 1g)
- scissors
- variety of materials of different properties for pupils to create wings from (e.g. thin card, corrugated card, paper, sandpaper, foil, bubble wrap, foamboard, corrugated plastic)

KEY WORDS

See Slides 8 and 15 of the teaching slide deck



Use recycled materials for your gliders. Collect cereal boxes, shoe boxes and other materials



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SKILLS DEVELOPMENT

Make a glider for each group of 2-3. Pupils will be investigating the effect of changing the material of the wing on how far the glider flies.

Engage the pupils using the [story narration of 'Gary Vity' by author Jules Pottle](#), and using Slides 3-5 of the teaching slide deck.



1
2
3
Planning

Encourage the pupils to handle the glider with care. Ask them to identify what they think are the best properties for a glider wing, e.g. hard, squashy, smooth, absorbent, brittle, waterproof etc. Encourage them to explain their reasoning by using adjectives to describe the properties.

Gathering evidence

Pupils explore how changing the wing material affects how far the glider flies. Encourage each group to test the ready-made glider first and decide how they will gather and record their results. A pre-prepared results table is available on Slide 9.



Then, they can remove the wings and use 2 different materials. They can use the existing wings as a template. How do they think that changing the wing material will affect how far the glider travels?

Note: To launch the gliders you may wish to use the school hall, or outdoors. Encourage pupils to control variables, such as launching their glider in the same way for each test. Measurements could be done in standard units or non-standard measures, e.g. counting how far the glider travels in footsteps.

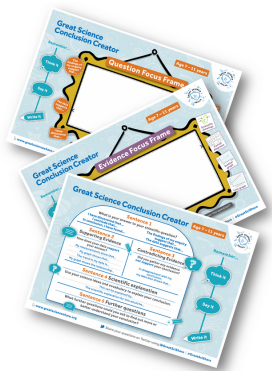


Analyse and interpret

Pupils evaluate the results to identify patterns. Using a block graph or pictogram can assist them to compare the difference between the wing materials and the distance the glider travelled. Encourage the pupils to describe what their results are showing and to start to reason why.

Drawing conclusions

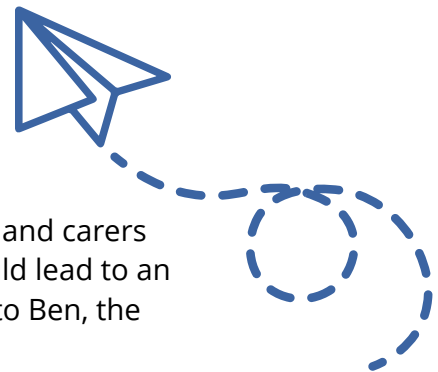
The [GSSfs Conclusion Creators](#) will enable pupils to develop conclusions to answer the scientific question: **What is the best material for the wing of a glider?** Reinforce the vocabulary around properties of materials and their fitness for purpose.



Share

Provide time for pupils to share their investigation and conclusions with new audiences. Consider revisiting 'Gary Vity' to inspire the pupils to share their investigation with new audiences. Pupils could write letters to Rosa with advice on suitable materials for wings on a glider plane, or they may prefer to do a:

- presentation in a class assembly
- letter to Ben, the aerospace engineer
- video for your school website
- Tweet [@GreatSciShare](#) #GSSfs2023



Questioning

Extend the enquiry by encouraging pupils to talk with their families and carers about their investigation with the gliders. What other questions could lead to an enquiry? What enquiry questions would they like to ask or suggest to Ben, the aerospace engineer?

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