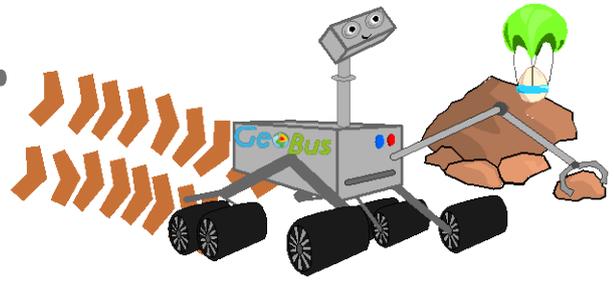


Landing a Rover

Teacher Notes



Activity title:	Exploring Mars: Landing a Rover
Target Age Group:	Upper Primary – Lower Secondary (approximately 10–14 years)
Preparation:	Collect required materials ('junk/recycling' for building landing pods), print student worksheet
Activity Description:	Working as a landing team, pupils use household items to create a landing pod, designed to protect delicate scientific equipment (represented by an egg). Teams then test their designs and compete to see which allows the safest landing. The worksheet includes an evaluation/reflection exercise to help pupils consider the strengths and weaknesses of their design.
Time:	5mins introduction/preparation, 25mins activity, 5-10mins testing, 10mins reflection Total: 50minutes
Learning Outcomes:	Understand the steps/considerations involved in landing a rover on Mars Understand the considerations necessary to ensure a delicate item lands safely from a height (i.e. reducing velocity and force of impact) Evaluate where improvements could be made on a design and process
Materials Needed:	Sufficient newspaper, straws, tape, plastic cups, string, plastic shopping bags + other recycling items for each group to build with 1 egg per group
Student Organisation:	This activity works best in small groups (4-6 pupils working as a team)

Instructions:	Discuss some of the considerations when trying to safely land breakable scientific equipment on Mars (slowing velocity, cushioning impact), allowing the class – or groups – to brainstorm ideas. Show pupils the materials they will have available to create their landing pod, then allow them some time to design. Hand out materials and allow groups to build their landing pod Test designs by adding the egg and dropping from a measured height – measure how extensively the egg has cracked in each case, dropping from successively higher heights if multiple designs are successful Encourage pupils to reflect on the strengths/weaknesses of their design
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Tip: To avoid/reduce mess, use hard boiled eggs – or the chocolate version!