

Lesson	4 of 5	Key Unit Question:	How are materials chosen in design?	Key Lesson Question:	Which material will protect Humpty Dumpty?
Learning Objective		NC Links		Resources	
I can investigate the properties of different materials.		Y2 <ul style="list-style-type: none"> • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • observe closely, using simple equipment • perform simple tests • use their observations and ideas to suggest answers to questions • gather and record data to help in answering questions. 		<ul style="list-style-type: none"> • Differentiated challenge and next step activities • A range of different materials for the children to investigate such as wood, metal, plastic, glass, brick, rock, paper and cardboard • Boiled eggs to mimic Humpty Dumpty • A 'wall' for Humpty Dumpty to fall off. 	

Teaching Input					
<ul style="list-style-type: none"> • Thinking time – start the lesson by showing the pictures of the different objects. Can you remember the names of the materials? Class discussion. • Class Discussion – what makes a good house? Discuss with partners before sharing as a class. • You have a new email! Read through the email from Humpty Dumpty. He has heard how we helped the Three Little Pigs, and he also needs our help. He is tired of falling off the wall and having to be put back together again. He wants us to investigate which material would be best to wrap around him to protect him from breaking. The material has to be comfortable to wear, not too heavy and be able to protect Humpty Dumpty from breaking if he falls off the wall. • How can we help Humpty? Discuss in partners/groups before discussing ideas as a class. • We need to investigate a material that will be good to wrap around Humpty Dumpty. It needs to protect Humpty from the fall. It needs to be comfortable to wear. It can't be too heavy. Ask the children – why should it not be heavy? • Thinking time – how can we investigate this? How can we find the best material? • First, we need to see which materials will protect Humpty. We could wrap an egg in each material and drop it to see which one stops the egg from breaking. Then, we need to investigate which will be comfortable to wear. We could feel each of the materials to decide which ones would be comfortable to wear. Finally, we need to see which one is not too heavy. We could weigh each material to see which ones are the heaviest. • Group Activity – Children to carry out the investigation to find the best material for Humpty Dumpty and complete the activity sheet. • Plenary – groups can share their findings from their investigation with the rest of the class. 					

Differentiated Activities	
★ (working below)	★★ (working at)
Investigation – children to answer the questions on the worksheet about the different materials: Would it protect an egg? Would it be comfortable to wear? Is it heavy? This would be best completed as a group with adult guidance to help the children test the materials to answer each question. E.g. children could wrap a boiled egg in the material to see if it would protect an egg, weigh the material to see if it is heavy and feel the materials and have a group discussion to see if they think it would be comfortable to wear.	Investigation – children to answer the questions on the worksheet about the different materials: Would it protect an egg? Would it be comfortable to wear? Is it heavy? For the more able children, more independence should be given for them to think of their own ideas to test the materials to answer the questions.

Challenge activity	Next Step activity
Children to write an email to Humpty Dumpty to explain the results of their investigation. This could be done independently, with partners or as a shared writing activity.	The three little pigs think that brick will be the best material to protect Humpty Dumpty because it is the strongest material. Are the three little pigs correct? Explain your answer.

Assessment questions	Self assessment	Key vocabulary
What is this material like?	I can investigate materials to answer questions. I can observe. I can identify the best material for the job.	Types of material such as: wood, metal, plastic, glass, rubber, rock, fabric, paper and brick Words to describe materials such as: hard, soft, rough, bumpy, smooth, fragile, strong, heavy, light material, good/bad, best/worst, useful