

Y5/6 – Lesson Plan 3

Is a building ever really 'earthquake proof'?

Aim: To explore the materials and methods used in the construction of earthquake proof buildings, analyse the benefits of those materials and methods and design our own earthquake proof building.	Key Words: • earthquake proof • material • shape • base • walls	Resources: • ICT access with internet • PPT with images of earthquake proof buildings
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Prior Learning: pupils will have learnt how different materials are affected when put under stress.

WC / PT	<u>Warm-up:</u> Discuss the ways in which a building can be designed so that it can be made earthquake proof: shape, base, walls and other. How can a building be constructed to be made earthquake proof?	0-5 mins
WC / PT	<u>Main Teach:</u> Use the following list of features to support notetaking whilst researching earthquake proof structures: • Deep foundations to add stability to the building. • X-shape supports prevent the building from twisting and make it stronger. • Emergency shut off switches for gas and electricity to prevent fires. • Thin walls with steel bars help to reduce the movement of the building. • Sprinkler system to put out any fires. • Shock absorbers in the base can absorb the shock waves produced by the earthquake. • Shutters on windows to stop any falling glass.	10-15 mins
I / S	<u>Activity:</u> Children use their research findings to design their own earthquake proof building using the key features discussed at the beginning of the lesson. Designs can be fine lined, coloured and labelled with features linked to shape, base, walls and 'other' categories.	30-40 mins
I	<u>Extension Challenge:</u> Children are to research other aspects of building design or materials that have been successfully used around the world to support earthquake proof design. ALSO: design an earthquake proof building for a hot (or cold) country. ALSO: design an earthquake proof building for a more (or less) economically developed country.	0-15 mins
WC	<u>Plenary</u> Was it possible to design a building that was 100% earthquake proof? Why did you come to that conclusion? Why do many MEDC's have a better track record of designing safe buildings?	5 mins
WC – Whole Class		PT – Partner Talk
		I – Independent
		S – Support

Challenge A	Make the tallest tower you can which is capable of standing freely and not attached to anything.
Challenge B	Make a boat which floats successfully in a tank of water and can carry a cargo of at least one penny.