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LINKED CHALLENGE

To make an egg protector



ACTIVITY OVERVIEW

Whilst we cannot easily access Kevlar, we can make choices from different materials and how we use and structure them to protect things.

In this activity, children work in groups to create a structure that will be placed over an egg to protect it from a falling tennis ball. Each group's structure to be tested at different intervals of drop e.g.: starting with the ball being dropped from 20cm and extending it each time until the egg breaks.

*Top Tip: children could create a platform above the egg to absorb the force or create a structure around or over the egg. Encourage the children to think about what they could do to the materials to improve their effectiveness. For example, they could crumple up newspaper.

KEY FACTS/SCIENCE

Whilst the strength of the material is important here, the ability of the material to absorb impact forces is vital. The force of the tennis ball dropping onto an unprotected egg will break the outer shell because of the wave of energy it delivers. The structure needs to have the strength to remain in place over the egg but also needs to absorb the impact of the force as it increases. Packing materials, like bubble wrap and expanded polystyrene, are used to surround objects in boxes and these absorb the forces of any knocks as the box is moved. The result is that the energy is dissipated and does not reach the object - it remains intact.

RESOURCES

Variety of materials:	Tape
carboard, paper,	Scissors
straws, plastic, lollypop sticks, egg boxes, pipe cleaners, cardboard tubes, packing materials, newspaper	Hard boiled eggs
	Tape measure/metre stick
	Tennis ball

QUESTIONS/FURTHER LEARNING

- Which material made a good choice?
- What did you/will you need to change?
- Does it matter whether the structure is touching the egg itself?