DT: Making Protective Cases

Device needs in Polar regions	Insulating Layers for Protection	Materials and Insulation	Testing and Design
Devices such as phones, radios and GPS units need protecting from extreme cold, moisture and wind.	Layers of soft fabric such as fleece or felt help keep devices warm and prevent the batteries draining quickly.	Materials like fleece and thermal fabric provide insulation, while nylon or plastic layers protect against wind and water.	Explorers test their equipment carefully before travelling to Polar regions and are designed for temperatures as low as -60 degrees.

ESSENTIAL VOCABULARY	
Textiles	Types of cloth or woven fabric used in making clothing.
Material	The substance from which something is made (e.g. fabric, felt and foil)
Insulation	A material that prevents heat from escaping.
Water-proof	A material that does not let water pass through.
Design Brief	A statement describing what a product must do and who it is made for.
Prototype	A first model made to test an idea or design.
Join	To attach materials together using stitching.
Seam	The line where two pieces of fabric ae joined.
Function	The purpose or job that something is designed to do.
Evaluate	To judge how well a product meets the design criteria.





MAKING LINKS TO PREVIOUS LEARNING.
What should we already know?

- That products are designed for a purpose.
- How to safely use basic tools and material when making a product.
- That materials have different properties.
- How to join materials using glue or tape.
- How to design and evaluate products.

MAKING LINKS TO NEW LEARNING.
What will we know?

- How to research, design, make and evaluate a product for a specific purpose.
- How textile materials can be joined, strengthened and insulated.
- Design a protective pouch suitable for use in cold and windy conditions.
- Test and evaluate materials to see how well they keep warmth in and keep water out.