

Textiles and Materials

Nightlights



Previous Knowledge

- Designing a product for a specific purpose
- Understanding that some materials are better suited for certain tasks.
- Reflecting on the effectiveness of a design by evaluating it.

Learning point 1: Design research

I can identify the design features of a nightlight.

- Look at a range of nightlights available.
- Discuss how they work – drawing on scientific knowledge of circuits to light a bulb.
- Discuss the designs on nightlights, including opaque and translucent shapes and patterns.
- Discuss materials which will allow light to travel through, including tissue paper and cellophane.
- Present the design brief in sketchbooks:

Make a nightlight which is inspired by the rainforests. It must include both opaque and translucent elements in its design.

Learning point 2: Opaque and Translucent

I can discuss the differences between opaque and translucent materials.

- Look at a variety of different materials, including tissue paper, cellophane, paper and card and discuss which will allow light to pass through. Why?
- Use a torch to test materials and decide which would be suitable for the parts of a nightlight.
- Sketch several designs for nightlights inspired by a jungle scene and label the materials.

Sketch at least 2 designs for a rainforest nightlight, and label the designs.

Learning point 3: Constructing a design

I can join paper, tissue and card using glue.

- Show a frame for a cube made out of wood and joined with glue.
- Discuss strengthening corners using triangles.
- Show how paper can be joined to the cube to create a nightlight.
- Children join their wooden frames together using wood glue and attach their paper and tissue design using PVA glue.

Create a card, wood, and tissue design, using glue to join each element.

Final Piece: A rainforest inspired nightlight.

I can create a nightlight with a simple circuit.

- Complete the construction of the nightlight.
- Continue to decorate or improve the design as it is constructed, reflecting on the design brief and the effect it will achieve when illuminated.
- Ensure it has a working light inside the device.
- Critique the design against the design brief, evaluating its effectiveness and style.

Critique your work. Does your design meet the brief? What do you like about it? What would you change? How?

Learning point 4: Circuit components

I can create a simple circuit to light a bulb.

- Discuss a simple circuit which includes a battery, wires, bulb and how a circuit needs to be closed.
- Discuss what happens when a switch is included.
- Create a simple closed circuit which includes a bulb, switch and battery.
- Create a sketch to show how the circuit can be incorporated into the nightlight.

Add a simple circuit to your nightlight

Vocabulary

Opaque: not able to see through it.

Translucent: allowing some light to pass through.

Transparent: clearly allowing light through it.

Device: an item made for a specific purpose.

Evaluate: assess or sum up a project based on its successes and improvements.