

PLANETARIUM PROJECTOR

A planetarium is a map of the night sky displayed on the inside of a special theatre. Using this projector, you can make a room at home into a planetarium – the perfect backdrop for your space centre!



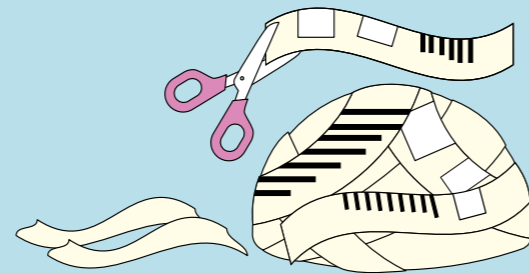
WHAT YOU NEED

- A round breakfast bowl or small mixing bowl
- Clingfilm
- Baby oil or bath oil
- Newspaper
- White PVA glue
- An old plastic container or paper cup
- A tablespoon
- A large piece of cardboard
- Scissors
- Masking tape
- Black paint and a paint brush
- A bradawl or large needle
- An eraser
- A silver marker or white pencil
- A small, bright, single LED torch
- Modelling clay or sticky tack
- A sheet of black card

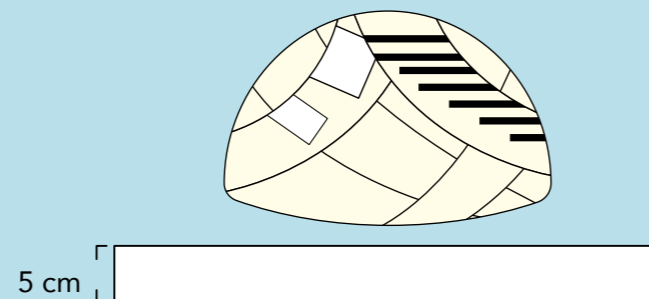


1 Cover the bowl with a layer of clingfilm. Rub a small amount of baby oil or bath oil over it to prevent sticking. Pour about 2–3 cm of PVA glue into the container. Stir in a few tablespoons of water.

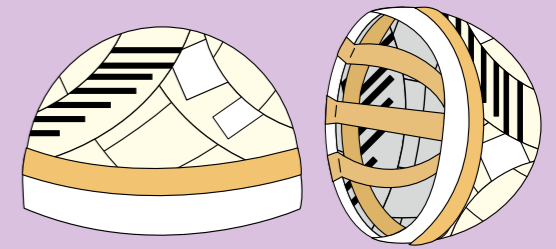
2 Tear your newspaper into 2 cm wide strips. One at a time, dip them in the glue mixture. Spread them over the surface of the bowl. Keep adding strips until the bowl is covered with about five layers. This process is called papier mâché. Leave to dry overnight.



3 When it's dry, carefully pull the paper dome off the bowl and remove the clingfilm. Cut out a long strip of cardboard, about 5 cm wide, and 3.5 times as long as the width of your paper dome.



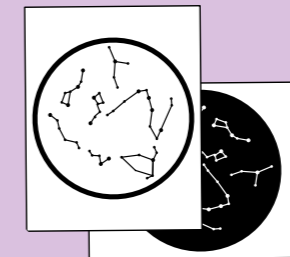
4 Wrap the cardboard strip around the base of your dome, overlapping it slightly. Glue or tape the ends of the strip together. Use masking tape to attach the dome to the strip, sealing the join tightly inside and outside.



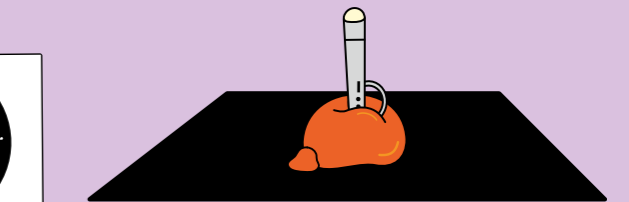
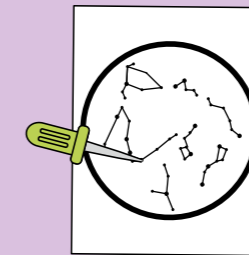
5 Mix black paint with an equal amount of PVA glue. Paint the dome and the strip black all over, inside and outside. Leave to dry, propped up slightly so that air can get in.



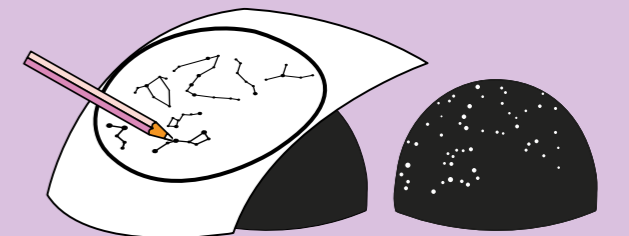
6 Using a book or the Internet, find a simple, circular map of the night sky, showing several constellations. Print it out or copy it on to paper, making the circle slightly larger than your dome.



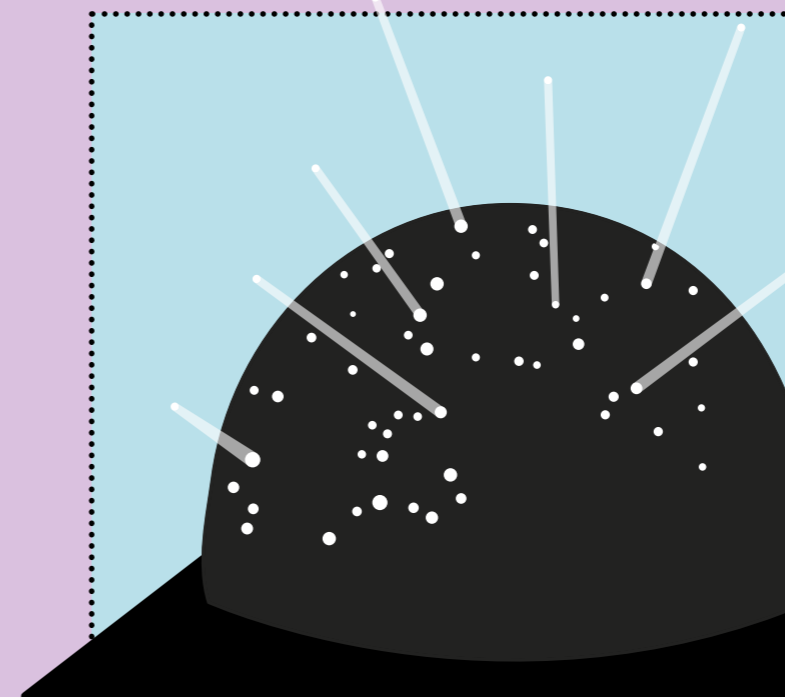
7 Make holes through the star dots on the paper with the bradawl or needle. Carefully hold the paper over your dome and use a silver marker or white pencil to mark the black dome surface through the holes.



8 Roll a lump of modelling clay or sticky tack into a ball. Press it on to the middle of your black card. Push the torch into it so that it points upwards.



9 Make a hole through each dot on the dome. As you push the bradawl or needle through, hold the eraser on the other side for it to stick into. When it's finished, switch on the torch and place the dome over it. Turn off the lights to see the stars and constellations!



THE SCIENCE BIT!

Stars in the night sky seem to form patterns, which we see as constellations or familiar shapes. In fact, some of the stars in a constellation are much further away than others. They just look as if they form a group when viewed from Earth.