Ages: 4-5

Shadow laboratory

35 min · indoors · all year round



Prep:

- Desk lamp or torch
- White wall or A3 sheet of drawing paper
- Opaque objects - 4: a cup, fork, toy and keys
- Masking tape
- A3 sheet of paper and pencil

Step by step (~35 min):

1. Fix the sheet of drawing paper to the wall at your child's eye level and place the lamp a metre away. Dim the room lights, but don't make it completely dark.
2. Hold the objects one at a time between the lamp and the wall, keeping them behind your child's back. Your child guesses from the shadow, then checks.
3. Move one object from the wall towards the lamp, stopping three times. After each stop, your child shows with their hands whether the shadow is bigger or smaller.
4. Try it the other way round: this time your child predicts what will happen **before** you move your hand.
5. Use two objects to make one creature, give it a name and trace its shadow in pencil directly onto the paper.

If it’s not working: If your child isn't interested in guessing the object, let them choose two silhouettes and move them. The adult guesses and deliberately asks to check the answer.

Playing together: A child aged 2-3 chooses an object; a child aged 4-5 moves it and compares the shadow's size; an older child sets up the light and traces the chosen silhouette.

Make it your own: Make a shadow bigger and smaller, combine two silhouettes, trace a favourite outline, or give the creature a name and a way of moving.

Let’s talk:

- "Why did the shadow get big?"
- "Which two objects could make a new character?"
- "Where should we stand to make the shadow fill the wall?"

Stay safe: An adult sets up the lamp. Don't cover the light source or use a hot lamp, and never shine a torch into anyone's eyes.

Why try this:

Your child makes a prediction about a shadow and tests it by moving an object. An everyday observation becomes a small investigation you can share.