



# THE BRAIN MAPPING MACHINE

## Lesson Plan

**Target Age:** 8–10 years

**Duration:** 1 hour

# THE BRAIN MAPPING MACHINE

**Target Age:** 8–10 years

**Duration:** 1 hour

**MoBaT Source:** MoBaT Museum Hub and Radboud University MRI Lab

## Aims & Goals

- **Core Goal:** Introduce students to the power of neuroimaging in science and medicine, as well as the importance of lab safety.
- **Learning Objectives:**
  - Students will be able to explain that an MRI scanner can ‘peer inside’ a head to see brain activity during sleep and dreams.
  - Students will be able to identify essential safety tools like the metal detector and the squeeze ball.
  - Students will be able to use a cipher to decode three hidden words.

## Introduction

- **Source:** The Jargon Puppets MRI video in the MoBaT Hub, and the MRI Lab Welcome video at the start of the Radboud University MRI Lab digital twin.
- **The Prompt:** "Our guide in the lab is a sleep scientist. He uses this giant magnet to see what happens in your brain while you're dreaming. If you could record your dreams like a movie, what would we see in your brain today?"

## Core Learning Activities

- **Task - The Experiment:**
  - **Enter the Lab:** Click the red numbered icons to follow the guided journey through the lab.
  - **Safety Check:** Find the Metal Detector and do a spin in front of it to ensure no metal enters the scanner room. Then find the Earplugs, and locate the Squeeze Ball—the emergency button.
  - **The Secret Password:** Find Leg-bot hiding near the scanners. If you use his Translatrix, he will give you part of the password to the mainframe computer.
- **Integration:** This connects with the real-world research of **Dimension 1: Empirical & Clinical Neuroscience**, which can be found at the floating blue Main Brain in the MoBaT Hub. This also connects with the scavenger hunt (The Circuit Breaker), which the students can complete in the MoBaT Hub afterwards if there is time.

## Assessment

- **The Metal Detective:** "You are the lead Safety Officer. List 3 items in your classroom or backpack that would make the MRI metal detector go BEEP and must be left in a locker."
- **Password Check:** Did the students correctly decode the Translatrix letter from Legbot (C)? If they completed The Circuit Breaker, do they know the mainframe computer password? (CLUCK).