

# EARLY YEARS SCIENCE PROVISION MAP

## Play, Observe & Ask

### Water Play



**Learn:** simple physical properties of an object

**You need:** egg, transparent container or jug, water, tablespoon, salt

**Play, observe & ask:**

- What happens when you place the egg into a container of water? (it should sink)

Add salt one tablespoon at a time to the water.

- What has happened?
- Where do you think the salt is?
- Why do you think the egg floats?

**Background science:** Children do not need to understand the concept of dissolving, but they might be aware that sugar dissolves in adults' drinks. It is sufficient for children to know that the egg has not changed but the water has – it is salty water, which is denser than water and creates more buoyancy (a push up on the egg). The egg should float in salty water.

### Malleable Play



**Learn:** that applying a force changes the shape of an object

**You need:** modelling dough/clay (e.g. @Plasticine)

**Play observe & ask:**

- How can you make a playdough egg?
- What do you do with your hands to change the shape?

### Construction



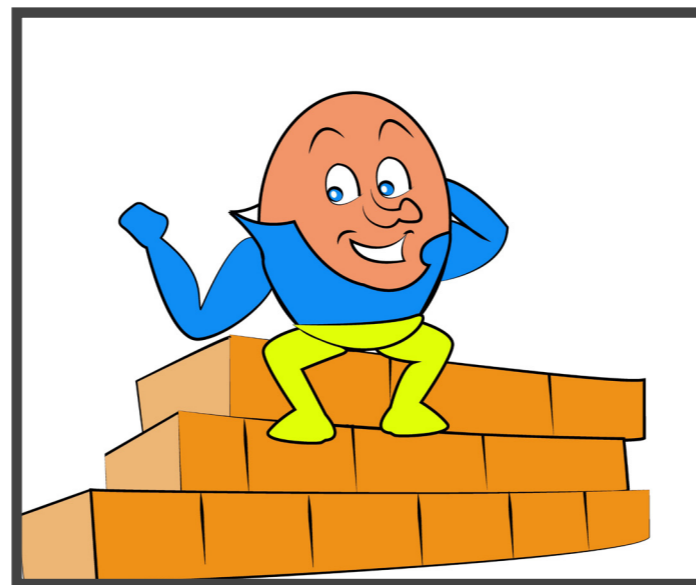
**Learn:** the properties of some materials (and how they might affect design choices)

**You need:** sugar cubes or building blocks, icing sugar & water or shaving foam to stick blocks together, small ball

**Play, observe & ask:**

- Can you design and build a wall that Humpty can safely sit on without falling off?
- Decorate eggs (boiled or raw) as Humpty. Can you balance Humpty on top of the wall?
- Do you think your wall is strong? Test by rolling a small ball towards the wall.
- What happens to Humpty?
- Which building material works best?
- What shapes made the best building blocks?
- What is the best mixture to stick the bricks together?

## HUMPTY DUMPTY



### Outdoors

**Learn:** performing simple tests; properties of some materials

**You need:** raw eggs, tape, range of materials e.g. bubble wrap, cardboard, cotton wool.

Note: this activity could be performed indoors using sealable freezer bags and a selection of materials e.g. couscous, feathers, flour.

**Play, observe & ask:**

- Can you decorate your egg to look like Humpty?
  - What do these materials look/feel like?
  - Which material do you think would keep Humpty safe if he falls?
- Wrap the egg in your chosen material (or, if using freezer bags, place your egg into a bag half-filled with your chosen material).
- Where/How shall we test whether these materials keep Humpty safe? Test by dropping the eggs from a given height.
  - What happens to the eggs?
  - Which materials protect Humpty best? Why?
  - How high can you drop Humpty before he breaks?

### Sensory Play

**Learn:** to use your senses to observe

**You need:** plastic eggs, tape, a variety of materials, eg. rice, sand, lavender

Fill the eggs with different materials and seal. You could do this in advance or with the children.

**Play, observe & ask**

- How could you find out what is inside the egg?
- Which senses will you use?
- What does it sound like?
- What does it smell like?
- What do you think is in the egg? Why do you think this?

### Key Science Vocabulary

senses - smell, hear, touch, see, taste

sound, noise

properties of materials - float, sink, dissolve, strength

mixture, water, salty water, dissolve (though a detailed explanation is not needed)

forces - push, pull, twist, squash, stretch, squeeze, roll, gravity, balance

### Further Science

Changes to materials – What happens when an egg is cooked?

Animal life cycles – What kind of egg do you think Humpty is? Which other animals lay eggs? (birds, fish, amphibians, reptiles, dinosaurs)