SUBJECT: Science YEAR: 7 MTP TITLE: Separation HALF TERM: 2 NO. OF LESSONS (approx): 9

Deliberate and specific retrieval of expected prior knowledge (be specific)

Retrieval should occur regularly throughout the learning journey:

- Definitions of element, compound and mixture
- Identify solid, liquids and gases
- Changing states
- Gathering and recording data

Academic transformation (be specific)

Your core curriculum must do all of the following:

- To understand that mixtures can be separated using a variety of physical techniques.
- Describe the difference between a mixture and a solution?
- Describe what happens when chemicals dissolve using key words (solute, solvent)
- Describe simple techniques for separating mixtures:
    - filtration,
    - evaporation,
    - distillation
    - chromatography
    - The identification of pure substances using chromatography
- Use filtration and evaporation to separate rock salt

Scientific skills
Planning an experiment, identifying variables, carrying out separation techniques.

Maths skills
Collecting data, drawing a graph, analysing data

Personal transformation (2 or 3)

Chromatography in forensic-
https://www.youtube.com/watch?v=kCKM_ICjDtc
https://study.com/academy/lesson/chromatography-in-forensic-science.html
link to real life use at crime scenes/drug testing etc.

Careers- forensic scientist, analytical chemist and toxicologist.
https://www.youtube.com/watch?v=k2_0-OpBgkQ

High-quality texts
Homework activity- Comprehension task focusing on the distillation method when making Ribena.

Can I Learning Questions

Can I describe the difference between a mixture and a solution?
Can I explain how to separate sand and water?
Can I explain how distillation is used to separate salt and water?
Can I explain how to separate ink based on their solubility?
Can I separate rock salt?

Literacy

Tier 2 vocabulary
Describe, analyse, separate, pure, mixture, function
Tier 3 vocabulary
Filtration, chromatography, solvent, solute, solution, soluble, insoluble, distillation, filtrate, residue, dissolve

Misconceptions (5 or 6 examples)

- A compound can be pure.
- There are no chemical bonds between substances in a mixture.
- Salt disappears when it is added to water. Salt forms interactions with the water, it is still present.
- The ink moves up the chromatography paper. The solvent actually moves the ink.