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| **F:\Learning bugs\Foundation Subjects\Dolly the Fly - Science.jpgLyng Primary School Knowledge Organiser**  |
| **Topic:**  | **Mixtures and separation** | Year 5 | Autumn 1 |



**What should I already know?**

To know that property refers to how a material can be described.

To describe the physical properties of a variety of everyday materials.

To know why objects are made from particular materials and to give examples of their suitability.

To know that a property of a solid is that it keeps its shape unless a force is applied to it.

To know that a property of a liquid can flow freely and take on the shape of a container.

To know that a property of a gas does not have a fixed shape and can escape from an unsealed container.

**Notable scientists**



Robert Boyle

1627–1691

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| **What Step On and Goldilocks words will I use?** |
| **Spelling** | **Definition** |
| Variable | A factor that can be changed |
| Dissolve | Become incorporated into the liquid to form a solution |
| Evaporation  | Process of turning from a liquid to a vapour |
| Insoluble  | Incapable of being dissolved  |
| Particle | Smallest amount |
| Sieving  | Filter out larger parts of material |
| Solution  | A liquid mixture in which substances have dissolved |
| Crystallising  | To form a crystal |
| Filtering  | Pass through a device to remove unwanted material |
| Soluble  | Able to dissolve in liquid |
| Mixture  | A substance made by mixing other substances together |

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| **Investigate!** |
| * Make 5 different mixtures:
* containing two solid substances
* containing three different coloured substances
* containing three substances that are the same colour
* containing a liquid and a solid
* containing a magnetic material and another solid substance.
* Separate mixtures by sieving
* Separate mixtures by filtering
* Mix to make solutions
* Carry out a comparative test to investigate dissolving sugar.
* Evaporation over time – salt in lids.
* Observe and describe the size of the pieces which pass through or are trapped.
* Line them up from smallest to largest
* Draw and annotate their own diagram (in their books) that explains how each separation can be used to separate mixtures of solids with different sized particles.
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**What will I know by the end of the unit?**

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| What are **mixtures**? | They are made up of two or more substances.They all have the properties of their component substances.They can all be separated. |
| What is **sieving**? | It is the physical process of particle removal.Particles cannot pass through holes that are smaller than themselves.Holes are usually visible to the naked eye |
| What is **filtering**? | The physical process of particle removal.Particles cannot pass through holes that are smaller than themselves.Holes are very small and stop very small particles from passing through. |
| What are **solutions**? | A mixture of two or more substances that stays evenly mixed.The substances are combined to make a solution but they do not change into new substances. |
| What is **dissolving**? | Some substances dissolve when mixed with liquids.It may look like it has disappeared but it’s mixed and appears translucent |
| What is **evaporation**? | The process of a liquid turning into a gas.Due to increased energy of particles.It is due to a liquid being heated. |

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| **Topic:**  | **Science** | Year 5*Forces* | Autumn 1 |

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| 1. Which substance is not a mixture?
 | **S** | **E** |
| 1. Salt
 |  |  |
| 1. Sand
 |  |  |
| 1. Soil
 |  |  |
| 1. Seawater
 |  |  |

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| 4. which of these substances dissolves to make seawater? | **S** | **E** |
| 1. Sand
 |  |  |
| 1. Flour
 |  |  |
| 1. Salt
 |  |  |
| 1. Sugar
 |  |  |

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| Explain how the process of sieving works | **S** | **E** |
| Use the words below to help you.Solid-solid (different size particles)HolesPass throughLargest to smallest separate |  |  |
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| 2. Which method is best to separate flour and water? | **S** | **E** |
| 1. Sieving
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| 1. Magnetism
 |  |  |
| 1. Filtering
 |  |  |
| 1. Evaporation
 |  |  |

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| 3. What type of mixture does sieving separate? | **S** | **E** |
| 1. Liquid and liquid
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| 1. Solid and solid (different size particles)
 |  |  |
| 1. Solid and solid (same size particles)
 |  |  |
| 1. A solution
 |  |  |

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| 4. What process has to happen for a solution to be made? | **S** | **E** |
| 1. Evaporation
 |  |  |
| 1. Dissolving
 |  |  |
| 1. Crystallisation
 |  |  |
| 1. Stirring
 |  |  |