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| **Year Group - 3, 4 & 5****Do the materials change in the heat of the fire?****Do the materials dissolve in the water?** | **Date – Term Three** |
| **Curriculum Links** | Sc4/1.2    setting up simple practical enquiries, comparative and fair testsSc4/1.3    making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggersSc4/1.4    gathering, recording, classifying and presenting data in a variety of ways to help in answering questionsSc4/3.1a    compare and group materials together, according to whether they are solids, liquids or gasesSc4/3.1b    observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)Sc4/3.1c    identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.Sc5/1.1    planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessarySc5/3.1a    compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets Sc5/3.1d    give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic |
| **Session Procedures** | **Before** - Check for rubbish, glass, hazards. Check weather forecast. Make sure that the fire circle and area are safe for the cooking. **During –** Keep vigilant regarding broken branches, slippery groundWear Hi-Viz jacket. Road safety to get to the park**After** – clear everything away and return any natural objects to their original place**Wash hands**  | * Wash hands after touching outside objects
* Remind the children about how sharp some sticks can be and to be careful of brambles and stinging nettles.
* Gloves must be worn for both litter picking and gardening
* The school grounds are our classroom and must be treated with respect.
 | **Equipment** Fire EquipmentHazel sticks, bread dough, wax, willowWater containers, sand, sugar, chalk, gravel, soil, vinegar, bicarbonate of soda |
| **Introduction and Activity Opportunities** | **Main activity –** Make predictions as to what you think will happen.**Do all materials change in heat? How do they heat? Can they be changed back?**At the fire test materials to see what effect the heat has on willow sticks in the metal box, wax for candles, bread dough, corn kernals ……Are any of the changes that we make reversible?**Which materials dissolve in water?** Which material dissolve when you mix them? Which materials stay solid in the water? Salt, sand, sugar, chalk, gravel, soil, plaster of paris.Are there any surprises?Can you reverse the change?  | **Vocabulary**MaterialsMeasureTemperatureReversibleDissolveSoluble |
| **Plenary** | All of the activities that we carried out today are science experiments – how is this information important in the everyday? |

POTIONS LESSON

Professor Snape has given

you some potions to make.

Make sure that you use the same quantities of liquid and solids for each potion to make it a ‘fair test’. Record which of the solids will dissolve in the water and which solids do not make a solution.

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| Solid – 2tsp | Liquid – 20ml | Test 1 | Test 2 |
| Soluble | Insoluble | Soluble | Insoluble |
| Sand | Water |  |  |  |  |
| Sugar | Water |  |  |  |  |
| Soil | Water |  |  |  |  |
| Flour | Water |  |  |  |  |
| salt | Water |  |  |  |  |
| Plaster | Water |  |  |  |  |
| Cornflour | Water |  |  |  |  |
| Bicarbonate of Soda  | Vinegar |  |  |  |  |

Which of the solids dissolved in the liquid?

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Did the Bicarbonate of Soda dissolve in the vinegar?

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Would you be able to get the solids back out of the liquid?

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What would happen if you left the plaster overnight?