**Cluster Examples**

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**Rationale**

Clustering involves organising sets of key words into different clusters or groups

This strategy provides students with an opportunity to think about and discuss the meanings of words and the relationship between words.  Students are reminded of words they already know and may be introduced to new vocabulary.

Limit it to about 20 words or so, less if students struggle with literacy & less for younger ākonga.

**Instructions**

* Print the table onto card (a different colour for each group). Cut out. Put in envelopes.
* Put students into small groups and give each group an envelope
* Have student groups arrange words in clusters (groups) according to the meaning of the words. It’s okay to have a pile of ‘don’t knows’. Aim for at least 6 clusters for 30 words, 3 for 12 words.
* Encourage students to discuss and negotiate where/how/why words should be grouped. A key part of this strategy is the discussion around the grouping.
* Ask students to give each cluster a heading (supply blank pieces of paper for this).
* Each group can then share/justify how they have prepared their clusters.
* Try to lead on from this to a writing activity using (some of) these words

**Spares for headings:**

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**Microbes**

|  |  |  |
| --- | --- | --- |
| Bacteria | Virus | Fungi |
| Tuberculosis | Flu | Athlete’s Foot |
| Pathogen | Saprophyte | Compost |
| Makes yoghurt | Decomposes food | Causes disease |
| Disinfectant | Antiseptic | Antibiotic |
| Janola | Dettol | Penicillin |
| DNA | Cell membrane | Protein coat |
| Extracellular Digestion | Respiration | Reproduction |
| Binary Fission | Parasite | Hyphae |
| Fermentation | Flagellum | Enzyme |
| Toxin | Nutrient | Spore |

**Tectonics**

|  |  |  |
| --- | --- | --- |
| Crust | Mantle | Inner core |
| Outer core | Convection current | Tectonic plates |
| Solid | Pacific Ring of Fire | Volcanoes |
| Earthquakes | Alpine fault | San Andreas fault |
| Ruapehu | Mt St Helens | Subduction zone |
| Plate boundary | Trench | Mountain range |
| Mid-Oceanic Ridge | Oozing lava forms rock | Rock melts as it dives underground |
| Andes | Himalayas | Marianas |
| Kermadec | Indo-australian | Pacific |
| Epicentre | P waves | Vent |
| Magma chamber | Seismometer | Gondwana |

**Experiment design – paper darts**

|  |  |  |
| --- | --- | --- |
| Exclude outliers from average | Reliability of results | Use average from 5 trials |
| Validity of method | Variables we control | Same person releases the dart |
| Use A3, A4 or A5 sized paper | Variable we change | Variable we measure |
| Flight distance | Goes on x axis of graph | Goes on y axis of graph |
| Paper type | Dart design, i.e. fold placement | How the dart is released |
| To see effect of dart size on flight distance | Independent variable | Dependent variable |
| Aim | Hypothesis | That the smaller the dart the further it flies |
| Purpose that states the cause and effect | Purpose that makes a prediction | Relates the results to the purpose |
| Conclusion | Discussion | Explains the science behind the results |
| Evaluates the investigation | Explains what was done to make the data reliable | Explains what was done to make the method valid |

**Sound – Upper Primary**

|  |  |  |
| --- | --- | --- |
| Loud | Soft | Volume |
| High | Low | Pitch |
| Source | Vibration | Hit |
| Pluck/strum/rub | Musical instruments | Blow |
| Wind | Strings | Percussion |
| Ears | Hear | Wave |
| Sound | Recorder | Ukulele |
| Drum | Whisper | Lion roar |
| Pipsqueak | Deep growl |  |

**Sound – Early Primary**

|  |  |  |
| --- | --- | --- |
| Loud | Quiet | Volume |
| Ears | Hear | Whisper |
| Sound | Vibrations | Lion roar |

**Plants – Primary**

|  |  |  |
| --- | --- | --- |
| Root | Stem | Flower |
| Bud | Fruit | Seeds |
| Leaves | Soil | Nutrients |
| Sunlight | Vegetable | Water |
| Carrot | Silver beet | Rhubarb |

**Acids & bases**

|  |  |  |
| --- | --- | --- |
| Acid | Base | Atom |
| Ion | Compound | Bond |
| Properties | Release H+  ions in water | Release OH-  ions in water |
| Salt | pH | Neutralisation |
| Carbon dioxide | Water | Hydrogen |
| Metal | Carbonate | Limestone |
| H2O | NaCl | HCl |
| NaOH | MgO | K2CO3 |
| CaHCO3 | H2SO4 | HNO3 |
| 1 - 6 | 8 - 14 | 7 |
| Neutral | Red | Blue |
| Litmus | Universal indicator  (UIS or UTP) | Green |
| Pops in flame | Turns limewater cloudy | Turns cobalt chloride paper pink |
| Often silvery | Often clear liquid | Often white powder |
| Stomach | Blood | Bee sting |
| Wasp sting | Swimming pool | Soap |