HANDS-ON EXPERIMENTS

ACID RAIN

Acid Rain

GEOGRAPHY

#ExpeditionSevern

When you spend a lot of time in water, in the bath or in the sea for example, do you notice anything odd about your fingertips and toes? Have a look at mine and it might give you a clue – They go wrinkly and look like raisins! But have you ever wondered why?

No one is 100% sure of the answer but some scientists think that it may be a special mechanism that humans have evolved to cope with watery environments. Try out this next experiment to find and see if you can work out what this mechanism might be…

The Experiment

What you need: Calcium/Sodium Carbonate, Spatula, Lima Beans (soaked in preparation), 3 sealable sandwich bags, Paper towels, 3 500ml Conical Flasks

3 labelled 500ml beakers – one filled with plain water; one filled with one quarter vinegar and three quarters water (represents mild acid rain); and one filled completely with vinegar (strong acid rain)

First, you need test how acidic your acid rain is and you can do this by adding calcium carbonate to your mixtures. This reaction will occur -
ACID + CALCIUM CARBONATE -> CALCIUM SALT + WATER + CARBON DIOXIDE

1. Add 250ml of each of your rain solutions into the 3 conical flasks
2. Add a spatula measure of calcium carbonate to each of the conical flasks.
3. Watch and take note of how many and how fast bubbles of CO_2 are produced from this reaction – why do you think that there is a difference in the number of bubbles produced by each solution?

What you need to do to test the effects of your acid on living organisms

1. Soak three paper towels with liquid from each beaker
2. Place paper towel and 2-3 lima beans in a sandwich bag, labelling with what liquid was used.
3. Observe the growth of the beans in the next few days and add more liquid if necessary

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VIDEOS FOR THIS RESOURCE AT:

INTRODUCTION:

Clickable Link:
https://youtu.be/6gM77bTsz20

CONCLUSION:

Clickable Link:
https://youtu.be/wd8VVUI8P3w