

It is possible to produce electricity using fruit and vegetables! All batteries contain acid (which is corrosive!) and it is this acid that reacts with metals like copper and zinc to produce electricity. Fruit and vegetables contain acid, some more than others!

Can you think of any fruit or vegetables that contain a lot of acid? How do you

know? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**We are carrying out an investigation to see what fruit or vegetable produces most electricity using a fruit Battery.**

List the foods we are going to use:

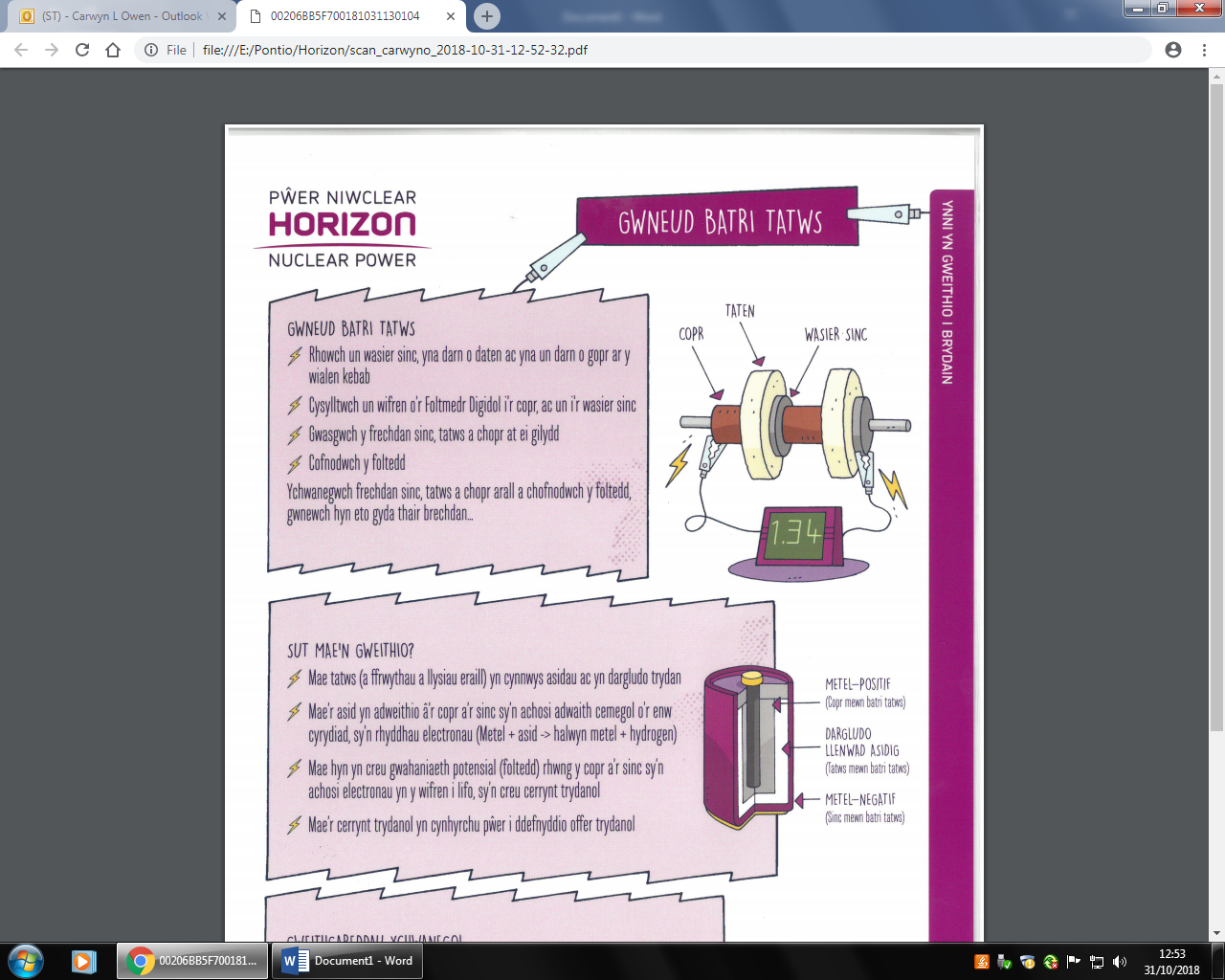
Knowing that acid is needed to produce electricity in a battery, predict what foods will create most electricity and why:

To ensure the foods don’t cheat, we must ensure that the experiment is fair. It must be ensured that one thing changes (independent variable) one thing is measured (dependent variable) and everything else stays the same (control measure).

|  |  |
| --- | --- |
| Independent Variable  (What changes?) |  |
| Dependent Variable  (What is measured?) |  |
| Control Measure  (What stays the same?) |  |

Clue:

Is the experiment fair if some fruit is fresh and the rest is old? Some fruit is cut into large pieces and the rest into small pieces?

Method

Follow this method to create your own battery!

1. Cut the food item to size.
2. Put one zinc washer, then the item of food and then a piece of copper on the kebab wire.
3. Connect one wire from the digital voltmeter to the copper, and one to the zinc washer.
4. Squeeze the zinc, copper and food sandwich together.
5. Record the voltage.
6. Repeat with a different item of food.

Results

Record the results below:

|  |  |  |  |
| --- | --- | --- | --- |
| Item of food | Voltage 1(V) | Voltage 2(V) | Mean Voltage (V) |
|  |  |  |  |
|  |  |  |  |
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Why is it important to repeat?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Conclusion

What item of food produces the most electricity? Was your forecast correct?

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Next time, what can we investigate?

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