Let's make a battery using drinks etc.

I What is a battery? ... A device that conducts electricity through the wire which connected two different metals and immersed them in solutions.

Negative electrode : a place that separate ions and electrons. Positive electrode : a place that combine ions and electrons. Solution:

Electrolyte flow the electron.

Non-electrolytes do not flow electron such as pure water.



For example, in a voltaic battery, a zinc plate is used for the negative electrode, a copper plate is used for the positive electrode, and sulfuric acid is used as the solution.

Then the chemical reaction that occurs in the zinc plate is as follows : $Zn \rightarrow Zn^{2+} + 2e^{-}$ Similarly, the chemical reaction that occurs in the copper plate is as follows : $2H^+ + 2e^- \rightarrow H_2$ The electrons produced by this reaction move along the wire, and generate electricity.

- 2 Today's experiment … Let's find out if we can make batteries from drinks etc.(that are popular in Japan and around the world).
- Materials : Cola, Calpis, Sokenbicha, Acelora drink, Green smoothie, Soy milk, Cocoa, Honey, Salad oil, Gelatin Instrument: zinc plate, copper plate, wire (for negative electrode, and positive electrode), galvanometer, glass bottle Methods : ① Connected the wires to the galvanometer, black lead to 「Gl」, and red one to「⊕」.
- 2 Connected the black lead to the zinc plate and the red one to the copper plate.
- ③ Pouring solution that are the beverages for this experiment into a glass bottle.
- ④ Put two metal plates into the solution and check the movement of the galvanometer needle.

Predict: Check the components of the drink etc and predict their results.

Predict results	electricity does not flow [galvanometer needle does not move]	electricity flows a little [galvanometer needle moves]	electricity flows very [galvanometer needle moves to the limit]
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Results:	Write the value of the	galvanometer under the ta	ble. (write the maximum	value indicated by the needle)
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Materials	Cola	Calpis	Sokenbicha	Acelora drink	Green smoothie	Soy milk	Сосоа	Honey	Salad oil	Gelatin
value										
(mA)										
symbol										

Discussion : why this result