

1. Put in sand, gravel, stone in the container in order

2. To make muddy water

3. Place the water made in step 2 in the equipment made in step 1

4. collect the water that has been filtered out of the container. In this experiment we investigated whether water purification can be done with a simple device.

The result was able to produce colorless transparent water from the container

We do not know until the removal of bacteria in water, but it was good as it was able to successfully remove stone and mud.

# Clean up

~ bivalves and clam ~

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The present study was undertaken in order to compare the ability of bivalve and alum to clean up water. While bivalve lives, the work like purifying is done so they're gentle with the environment. But it would take time. An alum is purified using a chemical change. It has good efficiency. But there is a possibility that it will have a bad influence on the environment.

At the present stage, we chose the bivalve which doesn't harm the environment.

## Bivalve

- Put 1500 ml of 3% salt water
- Put 4 bivalve and 100 ml of soybean milk in to ①
- Leave it 2 days.

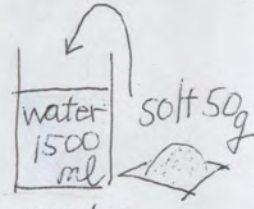
## Alum.

- Put soil in 200 ml of water to make muddy water.
- Put 20 ml of ammonia water in it. And make it alkaline.
- We will put alum on this. And observe the change.

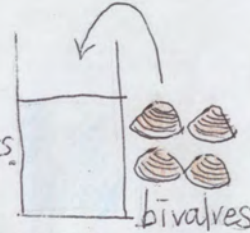
## Experiment with bivalve

### < Process >

① Put 50g of salt in 1500 ml of water to make artificial sea water.



② Put four bivalves and soy milk in ①.



③ Leave it for three days.

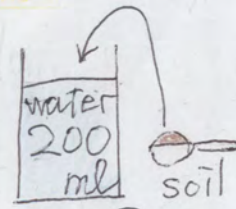
### < Result >

- Turbidity disappeared after 2 days.
- A white thing was seen sinking.

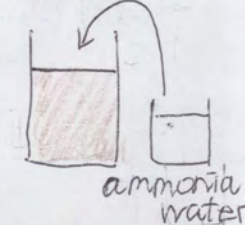
## Experiment with alum

### < Process >

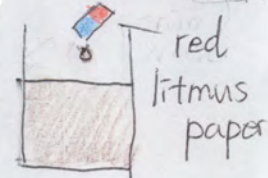
① Put soil in 200 ml of water. Mix this.



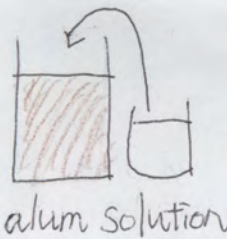
② Put ammonia water in ①.



③ Confirm that it is alkaline using red litmus paper.



④ Pour alum solution until mud gathers in gelatinous form.



### < Result >

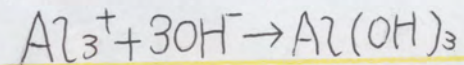
- Mud gets gelatinous and sinks.
- Water turbidity disappeared.

## From Experiment

Bivalves put out unnecessary things in the body called false feces.

Therefore, bivalves purify water using its action when alum and ammonia are mixed. Ammonium ion and sodium hydroxide ion react and precipitate.

### < A chemical equation >



Water can be purified at a low cost. Today, there are many people who have to drink dirty water, we would like to allow many people to drink beautiful water at a low cost using this purification method.