

# New Approach of Collaboration with Industry



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## Introduction

Engineers from an industry are in the forefront.

Miraikan is collaborating with Kao, a private enterprise, to develop and provide science communication activities for children education. This collaboration started from finding common goals and discussing the possible plans *together*. As our first step, Miraikan and Kao agreed to provide talk shows with three engineers from the enterprise. In this poster, we introduce our achievement in the first step of our collaboration.

## Goals for the activity



Engage a private enterprise to do science communication activities through visualizing Kao engineers' ideas behind the daily necessities.



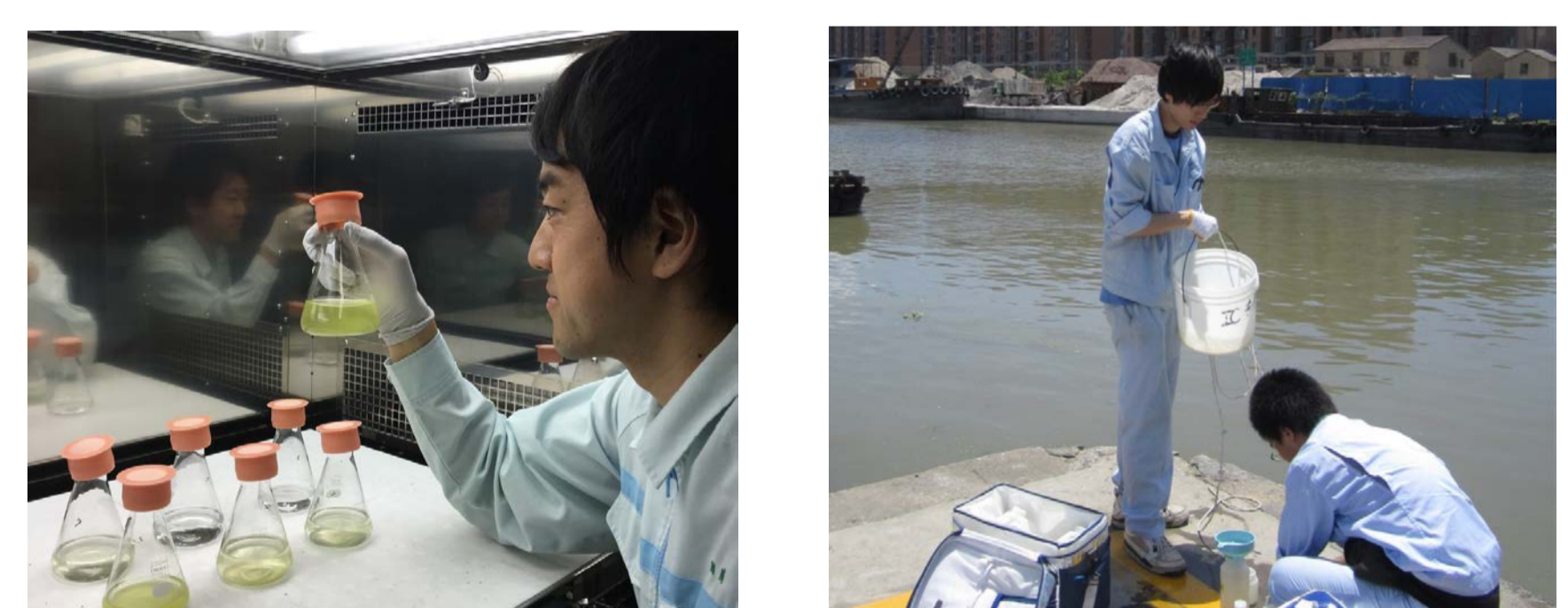
Engage children to find connection between daily life and science and then think how individuals' behavior is affecting the Earth environment and then take action.

## Talk show with engineers (First step activity)

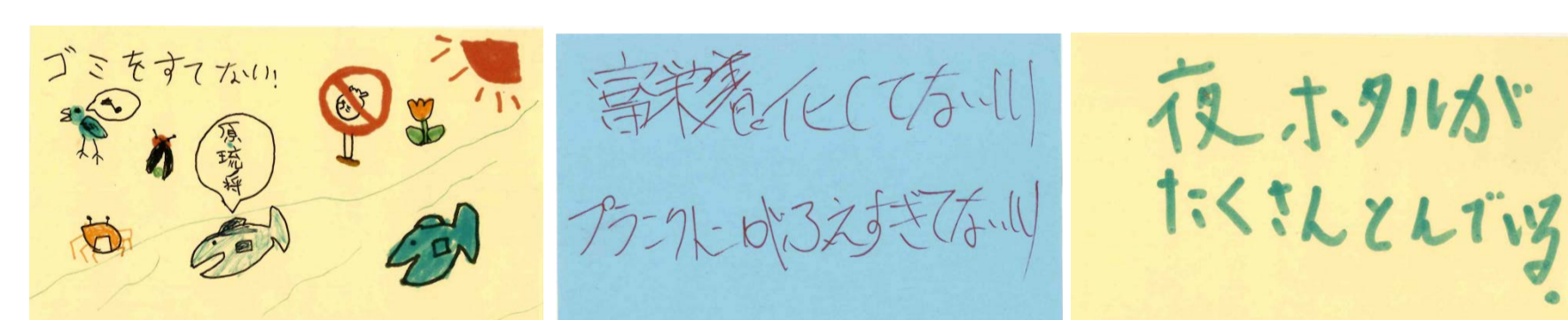
### 1 What is a clean river?



**Topic:** To make sure that detergent discharged into rivers is eco-friendly, its biodegradability & eco-toxicity is assessed through lab experiments and aquarium monitoring.



#### What is a clean river?



A river without trash or detergent.

A river without eutrophication.

Firebugs shine near by.

People can swim or drink.

A river with healthy fish living in it.

Transparent.

#### How can we keep rivers clean?

Make clothes that are not easily dirtied.

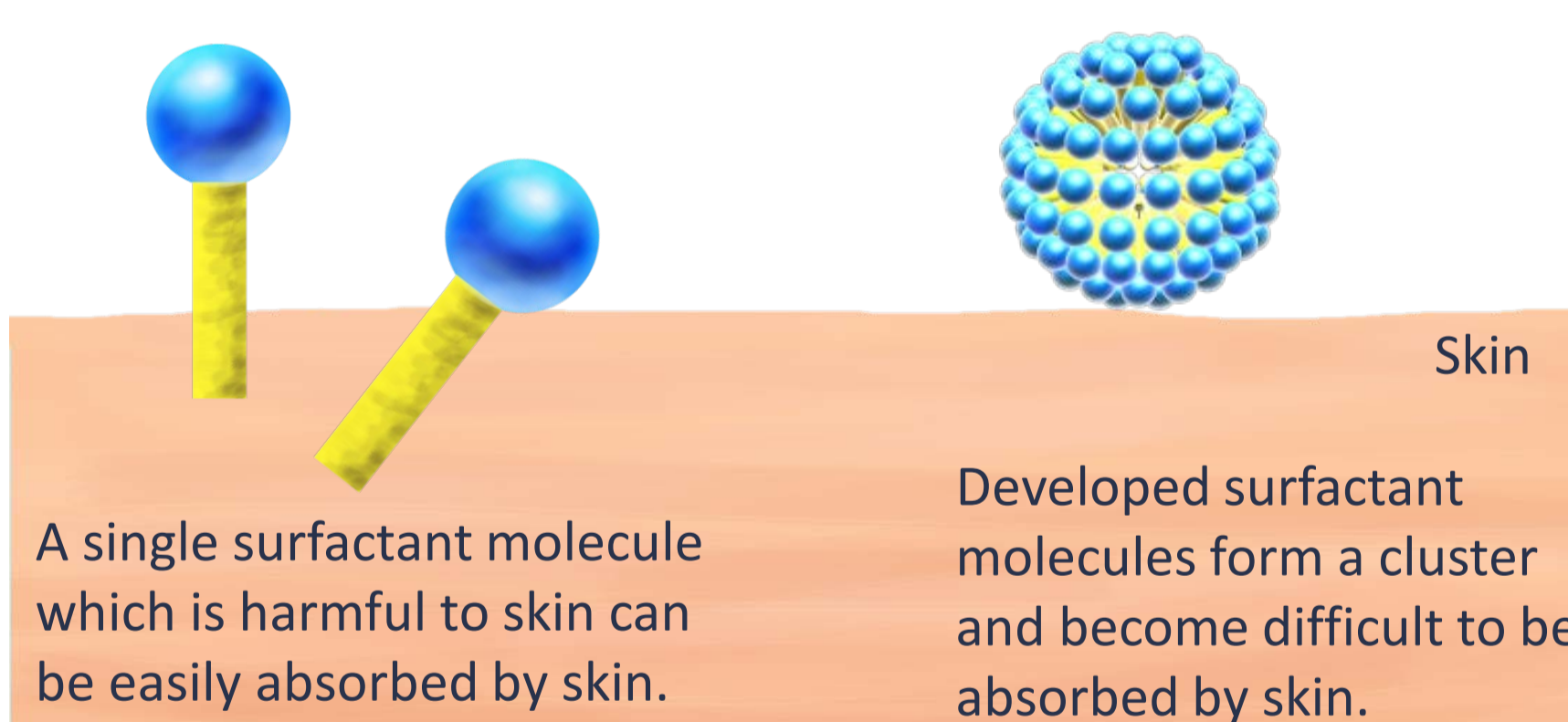
Invent a machine that can remove bad substances.

Increase water bill, so that people will use less water.

### 2 How to keep skin beautiful?



**Topic:** To keep skin's beauty, a new detergent, named EC, was designed to clean well, but low irritation to skin.



#### How to keep beautiful skin?

Skin with bacteria which are adapt to the living environment.

High autoimmune. Attractive skin to males even without make-up!

Support you to develop a surfactant that keep useful things but remove harmful things from skin.

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#### Opinions and questions from audience

It is necessary to develop local products according to different countries culture and needs.

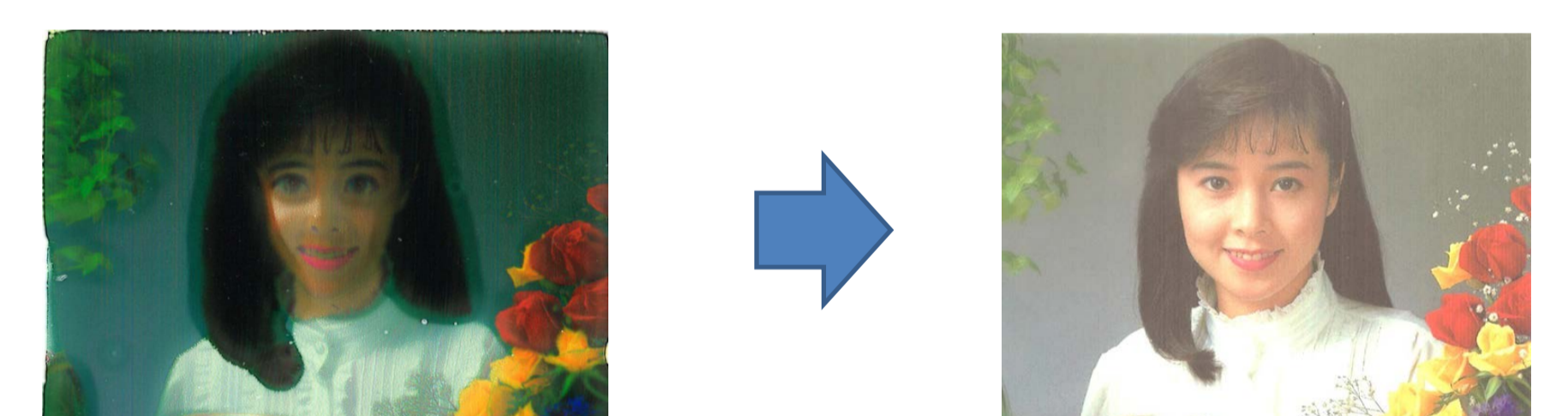
How long should we wash our skin?

Where will the surfactant go after it is absorbed by skin?

### 3 If you could print anything, what would you print?



**Topic:** Develop a quick-drying, water-based ink using pigment nano-dispersion technology. It has made it possible to achieve high-quality printing using less ink.



A photograph was printed in normal water-based ink on the film.

A photograph was printed in water-based ink on the film with Nano dispersion technology.

#### If you could print anything, what do you want to print?

I hope exit can be printed if I get lost!

I want to print food on the plate.

Print answers of school tests.

Money.

Print a handsome face on me.

Print people's feelings.

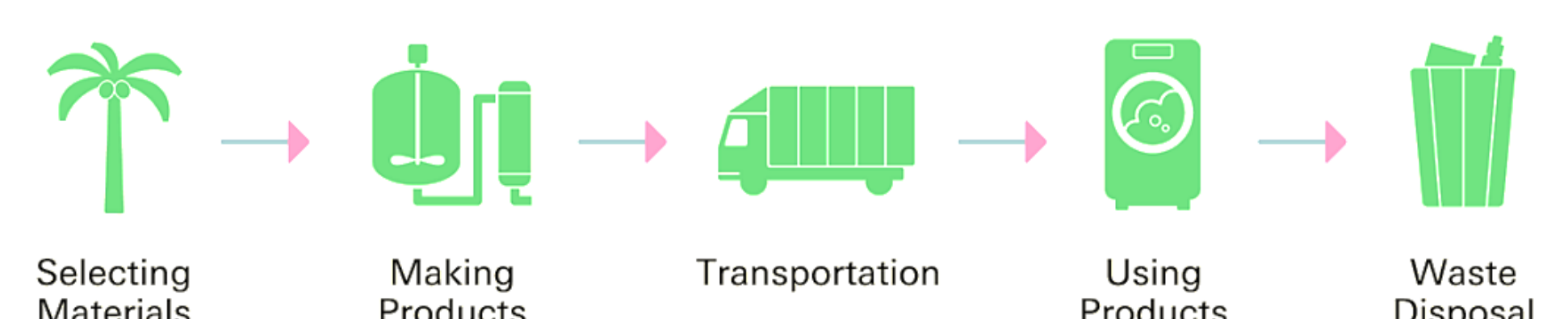
Will the color fade if a picture printed in the water-based ink gets wet with rain?

Print make-up on my face when I'm sleeping.

Print Mona Lisa on the wall.

## Next step!

The theme will be the life cycle of products. With the help of Kao, we can unveil how each step impacts the environment and thus reflects our daily life's behavior as consumers. The workshops are expected to be promoted via industry's network.



Life cycle of products.