# Microplastics

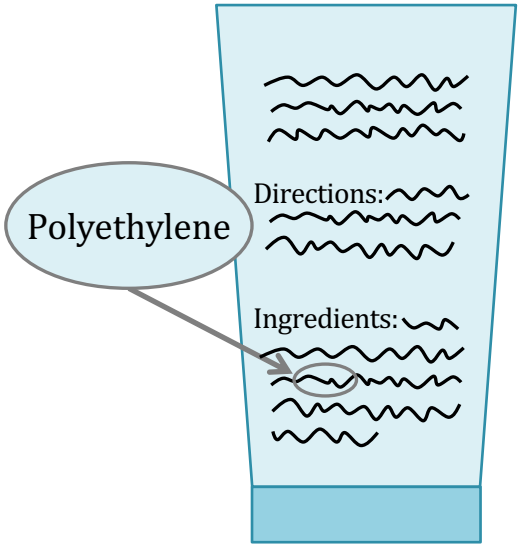
# Pointing out Plastic

Plastics can be found in many products at school and home. Plastics are created by ___people___ from ___oil___ or ___natural gas___. There are lots of types of plastics.



(Photo credit: Marie Kowalski)

One surprising product that has plastic in it is ___some soap___.
Some soaps have small pieces of ___polyethylene___
(a type of plastic), which are called ___microbeads___.



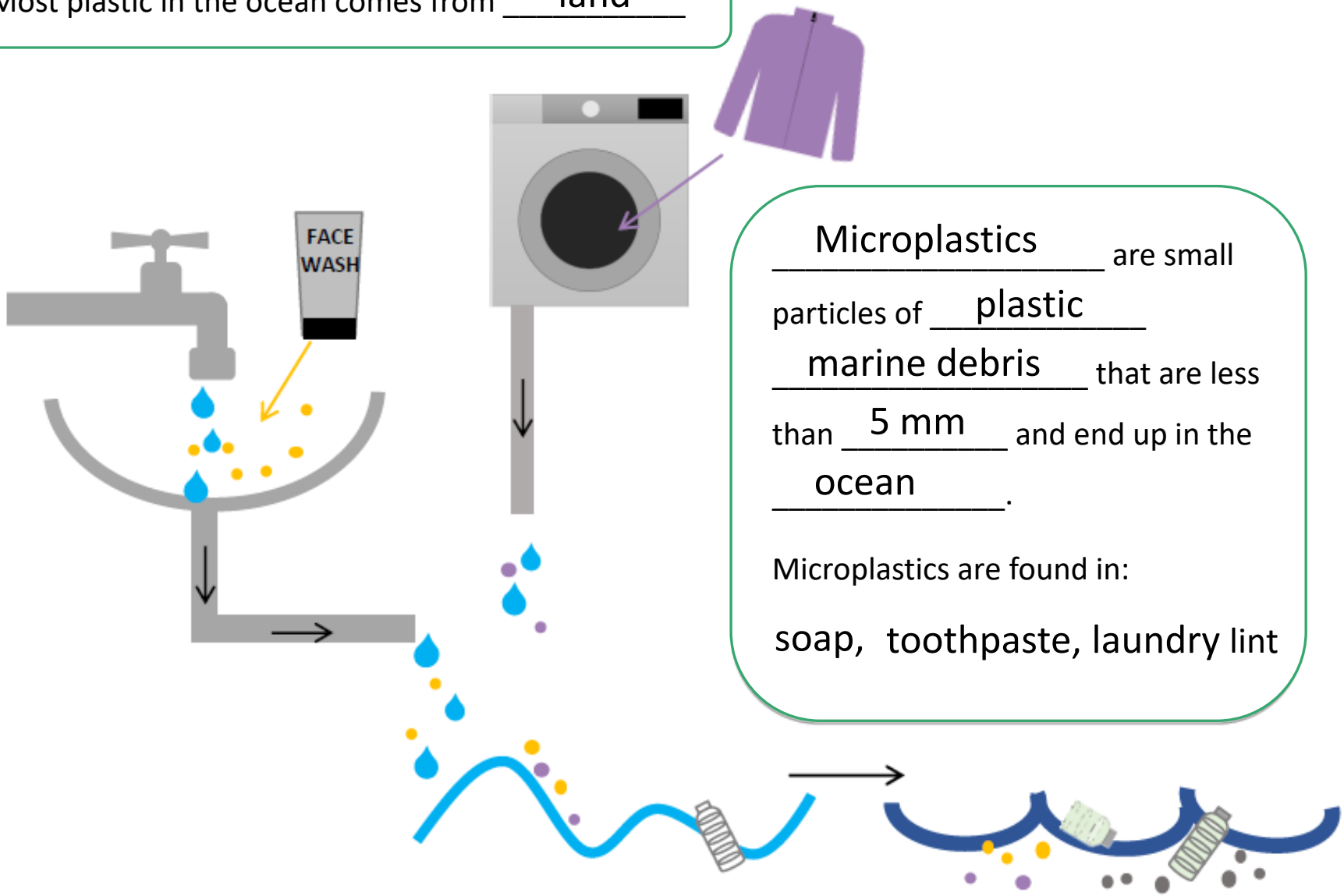
# Which soap has plastic in it?

**CHALLENGE:** Which soap has plastic in it?

**STEPS:**

1. Observe the two soaps using your senses of smell and sight (NOT taste or touch)
2. Fill the jar half-way with water, then put the lid on your jar and shake it up!
3. Observe again with words and pictures, using your sight (NOT taste or touch)
4. Answer the questions on the next page.

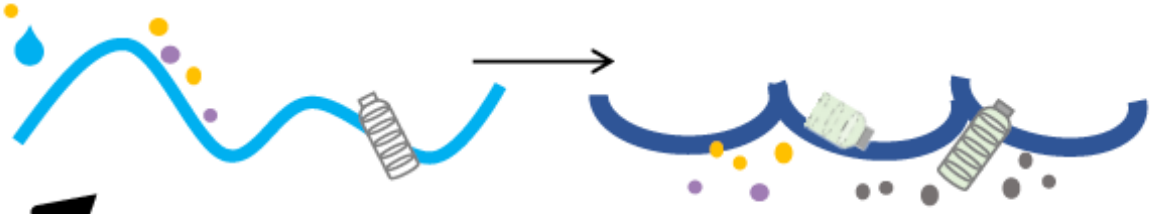
Most plastic in the ocean comes from land

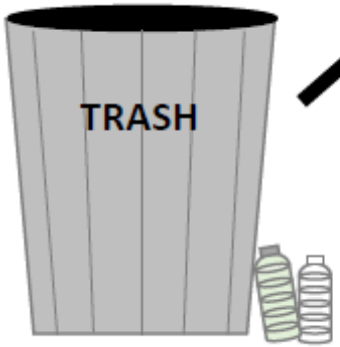



Microplastics are small particles of plastic marine debris that are less than 5 mm and end up in the ocean.

Microplastics are found in:

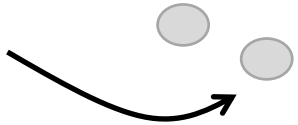
soap, toothpaste, laundry lint






Marine debris is anything that ends up in the ocean or Great Lakes that doesn't belong there. Plastic marine debris fragments in the ocean.

Microplastics can also come from factories that use small plastic pellets to make their products. These pellets are called nurdles. They are light in color and about this big



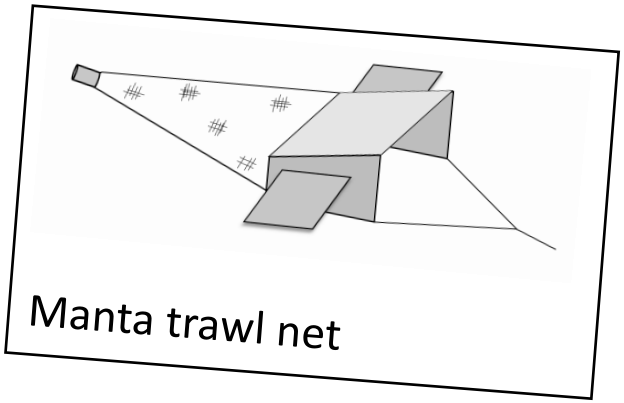
# Angel White's Data

(Photo credit: Angel White)

Angel White's Data:

Plastics found in 10 tows in the Pacific Ocean

| ***Tow Number*** | ***Total Number of Plastics* (2mm + 5mm)*** | ***Volume of water ($m^3$)*** |
|---|---|---|
| **1** | 127 | 362 |
| **2** | 127 | 361 |
| **3** | 504 | 320 |
| **4** | 343 | 357 |
| **5** | 320 | 359 |
| **6** | 281 | 358 |
| **7** | 901 | 361 |
| **8** | 543 | 360 |
| **9** | 1334 | 360 |
| **10** | 515 | 360 |

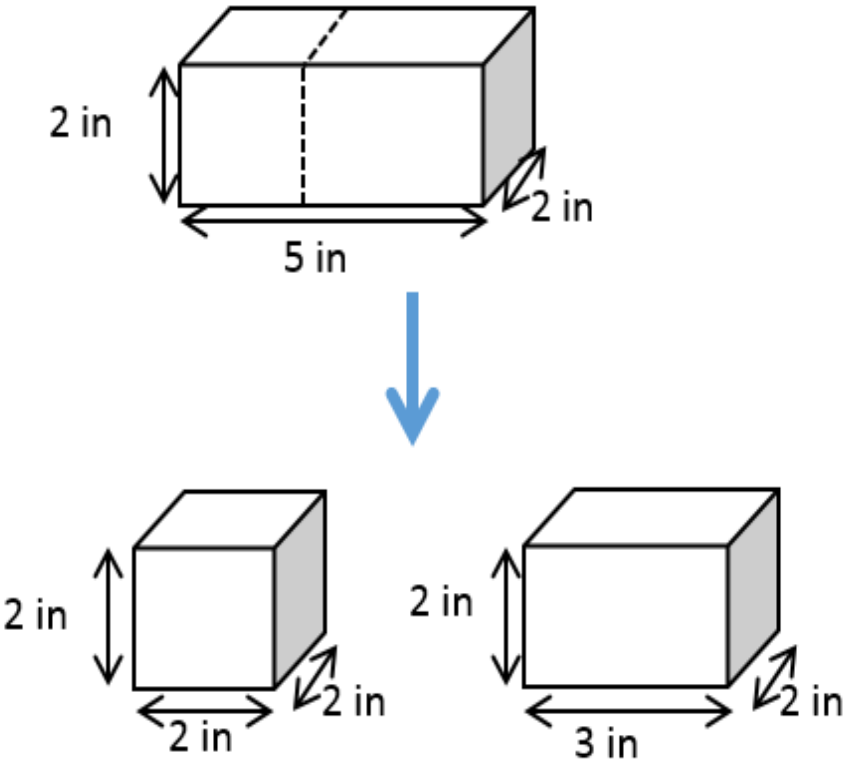


# Small plastics, big problem

(Photo credit: Marcus Eriksen)

# What happens when plastic fragments in the ocean?

*Example:*



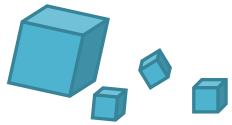

$4(5\text{in} \times 2\text{in}) + 2(2\text{in} \times 2\text{in})$
$= 4(10\ \text{in}^2) + 2(4\ \text{in}^2)$
$= 40\ \text{in}^2 + 8\ \text{in}^2$
**$= 48\ \text{in}^2$**

$6(2\ \text{in} \times 2\ \text{in}) = 6(4\ \text{in}^2) = 24\ \text{in}^2$

$4(3\text{in} \times 2\text{in}) + 2(2\text{in} \times 2\text{in})$
$= 4(6\ \text{in}^2) + 2(4\ \text{in}^2)$
$= 24\ \text{in}^2 + 8\ \text{in}^2 = 32\ \text{in}^2$

$24\ \text{in}^2 + 32\ \text{in}^2 =$ **$56\ \text{in}^2$**

# What happens when plastic fragments in the ocean?



Example:

| Number of pieces | Work | Total Surface Area |
|---|---|---|
| 1 | Surface Area<br>= 6(3in x 3in)<br>= 6(9in$^2$) = 54 in$^2$ | = 54 in.$^2$ |
| | | |

# Laurie Weitkamp's Data

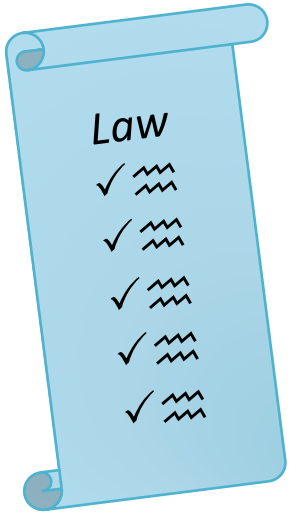
| Laurie Weitkamp's Data: Juvenile salmon diets in the Columbia River Estuary | | | |
|---|---|---|---|
| ***Species*** | ***Total number of fish*** | ***Number with plastic in their stomachs*** | ***Percent of fish with plastic in their stomachs*** |
| **Chinook** | 1,009 | 28 | 3% |
| **Coho** | 174 | 12 | 7% |
| **Steelhead** | 219 | 3 | 1% |

(Photo credit: Laurie Weitkamp)

# Designing solutions to microplastics

## Individual Actions


## Making Laws




## Education

(Photo credit: Marcus Eriksen)



(Photo credit: Laurie Weitkamp)

# Designing solutions to microplastics

1. Work with your team to review the materials in the “Solutions” folder and the data in your notebook
2. Design a solution to microplastics. Use page 10 of your notebook to think about the details of your plan
3. Use the poster paper to create a visual to help you explain your solution everyone
4. Share your idea!