

JASON Project: Resilient Planet

Mission 4 Lab 4 Oysters to the Rescue (pg. 62)

Initial Filtering:

# Filter Fiber balls in cone	0	1	5	10
Coffee (g)	10	10	10	10
Water (ml=g)	150	150	150	150

Mix the coffee/water mixture well. Pour it through the screen cone with 0, 1, 5 and 10 filter fiber balls. Catch the liquid and coffee grinds into a plastic glass as they come through.

Second filtering:

To separate the solid (coffee grinds) from the liquid filtrate (brown water): Weigh a clean, dry plastic glass. Place a coffee filter inside the funnel provided and put it into the plastic glass that you previously weighed. Stir the mixture of water and coffee grounds that came through the fiber balls. Pour it through the coffee filter to separate the liquid from the grounds.

Weigh the filter paper with grounds in them. Weigh the plastic glass with liquid in it.

From initial filtering with

# filter fiber balls in cone	0	1	5	10
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Coffee left
on filter
paper (g) _____

Liquid (g) _____

Total (g) _____

% change _____

$$\frac{\text{160 g - total mass in g from second filtering}}{\text{Original mass 160 g}} \times 100 = \text{Percent change}$$

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Teacher notes:

To get reliable and verifiable results in the 1, 5 and 10 polyester ball trials and between classroom work groups, it is very important that the size of the polyester balls be of the same size.

Other extensions:

- Use the same brand and grind of coffee for the activity. Change brands and/ or grind-size of coffee to investigate the effect of different types/sizes of particles in the water on the oyster's filtration ability.
- The coffee filter and grounds could be dried to give a more accurate mass of the coffee grounds that would be recovered in the second filtration.