

PLASTIC PANIC

An exploration of microplastics at the wastewater treatment plant

Question Cards



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ACTION STEP 1

FILL

What is wastewater?

Where does wastewater come from?

What happens to the water we send down the drain?

ACTION STEP 2

ADD

What are microplastics?

Where are they coming from?

ACTION STEP 3

SAFETY

Why do scientists need safety glasses?

Have you ever had to wear safety glasses before?

ACTION STEP 4

FILTER

Why do you think the WWTP has a filter at the very beginning of the treatment process? What do you think would happen if WWTPs didn't have filters like this?

What are the costs of having a filter?

Make a prediction: what's going to happen to the microplastics in your sample when you pour it through the filter? How much, and what, will get caught?

ACTION STEP 5

SKIM

What water is the cleanest? Top, middle, or bottom?

Why do some plastics float and some sink?

What do you notice about what floats vs. what sinks? What do you think would float and sink at the real WWTP?

ACTION STEP 6

DIGEST

What are the microbes doing here?

What happens to the microplastics during this step of treatment?

ACTION STEP 7

SANITIZE

Are all bacteria bad?

Does anything in your sample look different under the black light?

What other ways to sanitize water do you know about?

ACTION STEP 8

EXIT & SAMPLE

Are you satisfied with the cleanliness of your sample? Is it clean enough to go into the river?

What didn't the WWTP catch?

What could we do with microplastics once we've collected them?

What sorts of things could we do to prevent microplastics from getting through the WWTP to the streams? .

Who do we need to work on this problem?

ACTION STEP 9

EXAMINE SAMPLE

What shape are your microplastics? Are they Fibers? Beads? Something else? What do you think could be the source of your microplastics?

Do you notice any patterns with what types of microplastic make it through the treatment plant and which get caught in the treatment?

What can you do to help stop the plastic panic at the WWTP?