**Filtration System Design Packet**

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| **Research and Brainstorm** |
| **What are PFAS, and how do they enter bodies of water?** |

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| **Design Your Filtration System** |
| **Sketch your filtration system design below. Label all parts and materials.**  **List the materials you will use in your filtration system.**  **Explain how your filtration system will work to remove PFAS from the water.** |

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| **Build Your System** |
| **Build your filtration system using the materials you listed.** |
| **Describe your procedure for testing the filtration system.**  **What are the layers in your filtration system? How many inches is each layer?**   |  |  |  | | --- | --- | --- | | **Layers** | **Material** | **Inches** | | **Top Layer** |  |  | |  |  |  | |  |  |  | |  |  |  | | **Bottom (the water will exit this layer**  **and go into the cup)** |  |  | |

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| **Analyze Results** |
| **1. Compare the initial and filtered water. Did your system remove any impurities?**  **2. What worked well in your design?**  **3. What could be improved in your design?** |

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| **Redesigning and Retesting Your Filtration System** |
| **Describe your procedure for testing the filtration system.**  **What are the layers in your filtration system. How many inches is each layer?**   |  |  |  | | --- | --- | --- | | **Layers** | **Material** | **Inches** | | **Top Layer** |  |  | |  |  |  | |  |  |  | |  |  |  | | **Bottom (the water will exit this layer**  **and go into the cup)** |  |  |   **How much water did you get in the cup?**  **What was the color of the water in the cup?**  **Which was the better system?**  **Why was it the better system?** |

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| **Reflection** |
| **1. How effective was your filtration system?**  **2. What challenges did you encounter during the design and testing process?**  **3. How might your design be used in real-world applications to address water pollution?** |