



Creating a Water Purifier Design Challenge

DESIGN CHALLENGE Notes:

This design challenge explores how to better understand clean water and pollutants

Problem: We need to understand what makes a good filter mechanism.

Challenge: Work in teams to create ways to balance items to create common ratios.

Materials:

We need a large clear glass

We need a series of materials (burlap, nylon, cotton, cheesecloth, coffee filter, screening)

We need rubber bands

We need a funnel

We need a pitcher for pouring water

Brainstorm:

1. How is water cleaned in nature?
2. Is there a benefit to dirty water?
3. What is a filter?
4. Is fresh water easy to get?
5. Is there any other way to purify water?

Design/Build:

1. Determine a method for ascertaining water cleanliness
2. Create a chart to measure water clarity
3. Determine when you think water is pure

Test:

- What happens when you try your design?
- Can you be sure you have an accurate cleanliness measure?
- Can we tell it is working? How?
- How do you know when the water is clean?

Evaluate:

- How will you record your results?
- How will you know how much of each component you have is doing what?
- What would you modify to test your results?
- Can you determine if there is a benefit of multiple materials?
- What would you do differently?

Share:

- Record your tests on a chart.
- Which combination or type of filtering worked best?
- How did you know?