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POLYMER CHAINS AND CROSS LINKING

Learning Objectives

1. Understand that polymer molecules consist of long chains of repeating units called monomers.
2. Make a model of a polymer using items found at home.
3. Understand that polymer chains are often connected with a different substance to change its properties and increase strength. This process is called Cross Linking.
4. Make a model of a cross linked polymer using items found at home.
5. Cross link a polymer (white glue and borax)

Vocabulary

1. Model
2. Monomer
3. Polymer
4. Cross Linking
5. Polyurethane Foam

Pre-Activity

1. Cut strips of paper (approximately $\frac{1}{2}$ " x 2"), form into rings, and staple together to form a connected chain of paper loops.
2. Connect paper clips end-to-end to make a chain.
3. Connect identical Lego bricks together for form a rigid "chain"

Post-Activity and Resources

1. Can you think of another way to estimate the number of beads in the polymer molecule?
2. Visit this site to learn more about polymer chains:
<https://www.sciencenewsforstudents.org/article/explainer-what-are-polymers>
3. Watch this video: <https://youtu.be/UwRVj9rz2QQ?t=6>
4. Check out the Akron Global Polymer Academy website for more activities.
<https://www.uakron.edu/cpspe/agpa-k12outreach/>



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