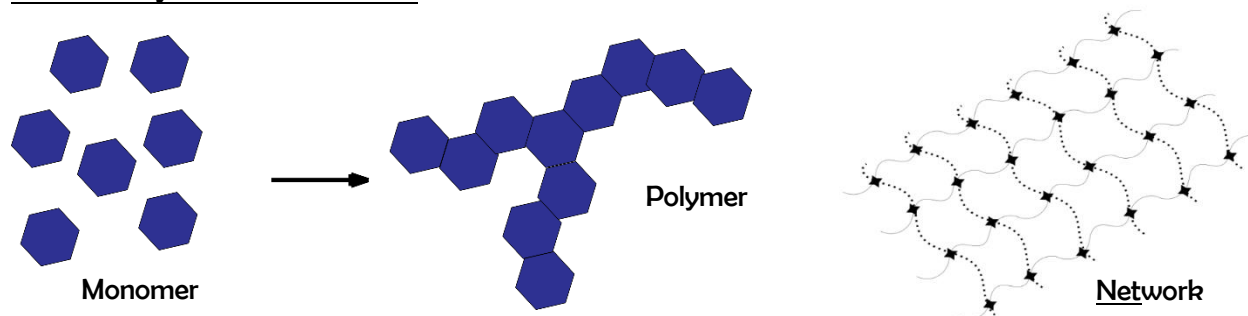
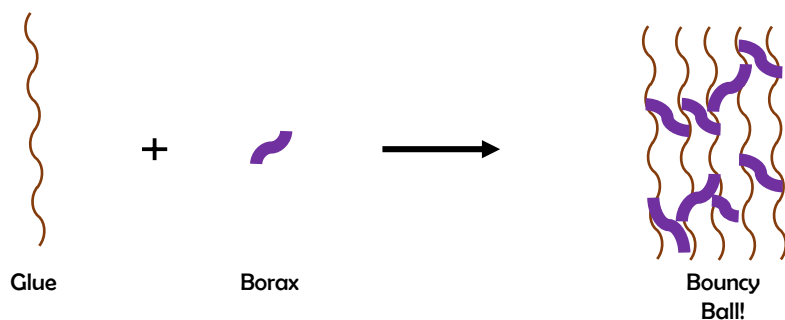


Husky @ Home Science: Bouncy Balls

Pre-Activity Notes to Students:



- Polymers are chains of repeating blocks called monomers.
- Polymer networks are chains of polymers that are connected to form net like structures. The molecules that connect the polymers chains are called “cross linkers”.
- The “polymer networks” are a bit like what happens when volleyball nets are assembled from individual strands of string.
- In our experiment today, we are going to make bouncy balls. These are polymer networks where glue is our polymer chain and borax acts as the cross linker.

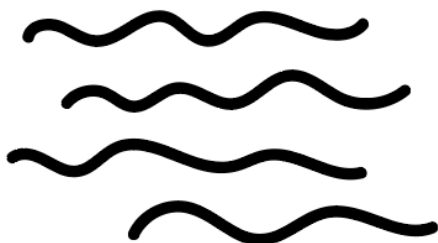


Husky @ Home Science: Bouncy Balls

Pre-Activity Notes to Parents:

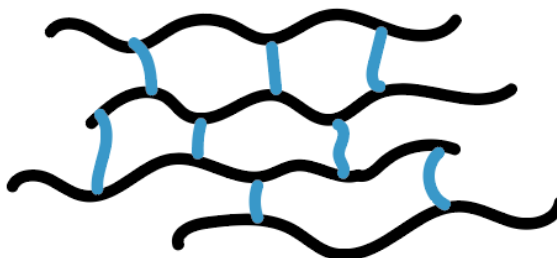
From living cells to man-made plastics, polymers can be found anywhere. Polymers are long chains made up of small, repeating units called monomers. There are two main types of polymers- thermosets and thermoplastics. Thermoplastics are made up of individual polymer chains that are not connected and can be repeatedly melted and re-shaped. Thermosets contain polymer chains connected by cross links and cannot be melted. Adding cross links to polymer chains will change a material's physical properties by adding strength and stiffness.

Thermoplastic (no cross links)



Real life example: Plastic found in grocery bags, water bottles, and Legos

Thermoset (cross linked network)



Real life example: Epoxy glues and rubbers (car tires, bike tires)

We will be making bouncy balls using glue and cornstarch, which are made up of individual polymer chains. We will add the glue/cornstarch mixture to borax, which will act as a cross link for the polymer chains. You can change the texture of the bouncy balls by varying the amount of each ingredient you use in the recipe. We hope you enjoy experimenting!

Pre- or Post-Activity "Google Me" Keywords:

Want to learn more about polymer networks with your children? Try Googling the following keywords to learn more!

- Monomer
- Polymer
- Crosslinkers
- Thermoset
- Polymer Network