Milk Plastic

PLAN

• Decide as a Troop how long you will collect plastic waste. All plastic waste should be clean and dry.
• Help Scouts investigate local recycling policies.
• Consider how Scouts will heat their solutions. Fuel stoves must be used outside only.
• Hot plates, stoves, pots and glassware will get very hot. Take proper precautions to prevent burns and familiarize yourself with burn treatment.

DO

Activity #1: Weighing the plastic waste
• Plastics are mostly made of petrochemicals, including coal and crude oil.
• Bioplastics are plastic materials made from a renewable biomass source such as vegetable oil or cornstarch. Some bioplastics are biodegradable in industrial composting facilities.

Activity #2: Creating the plastic
• The thicker the form, the stronger it will be.
• Youth can take the product home to dry out. Scouters should have an example already completed to show them the end result.

SOME BACKGROUND INFORMATION ON BIOPLASTICS

• Adding acid (vinegar) to the milk causes the milk protein molecules to unfold and reorganize in a long chain to create the solid bioplastic called casein.
• Generally, bioplastics do not produce a net increase in carbon dioxide gas when they break down, as the plants that were used to make them absorbed the same amount of carbon dioxide during their life.
• Bioplastics may need specific conditions in order to biodegrade.

SUGGESTED TIMING

• Introducing the problem – 10 minutes
• Weighing the plastic waste – 20 minutes
• Creating the plastic – 20 minutes
• Review – 20 minutes