

BIODEGRADABLE PLASTICS INQUIRY

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Part 1: Research and plan

Students can research what type of plastic that they want to make (from corn, potato, milk, etc).

They can use the Smarter Science framework and their steps to inquiry poster or booklets (<http://smarterscience.youthscience.ca/posters-and-pdfs> (<http://smarterscience.youthscience.ca/posters-and-pdfs>)) to brainstorm what variable that they would like to change and what they would like to stay the same. They may choose to compare types of plastic (commercially available vs. potato plastic vs. plastic made with casein, etc.) or thickness or different types of preparation (plastic made from potato starch powder vs. from grated, real potato).

Part 2: Making the plastic

Note for teachers: It is important to emphasize concepts like keeping variables constant and only changing one variable so that they keep that in mind before they make their plastic. If they have two different plastics but they are different thicknesses, they haven't held their variables constant and it won't be a fair test.

A helpful link:

<http://www.instructables.com/id/Make-Potato-Plastic!/step3/Mix-it-Up-/>

Generally, you will need some source of starch (cornstarch, potato starch, potatoes, milk, etc), glycerin, vinegar, baking soda, something to cook it in and something to spread it out in (mold or baking sheet).

Part 3: Testing it out!

Students test out how well their biodegradable plastics hold up against each other in terms of durability and ability to truly break down. Students might do a drop test, a biodegradation (in a compost pile or in dirt), a microwave test, etc.

Part 4: Reporting back!

Students could choose to do an oral report to the class, hand it in as an extended lab report or film a short video, advertising their “product” after making more plastic and molding it into some usable shape.

