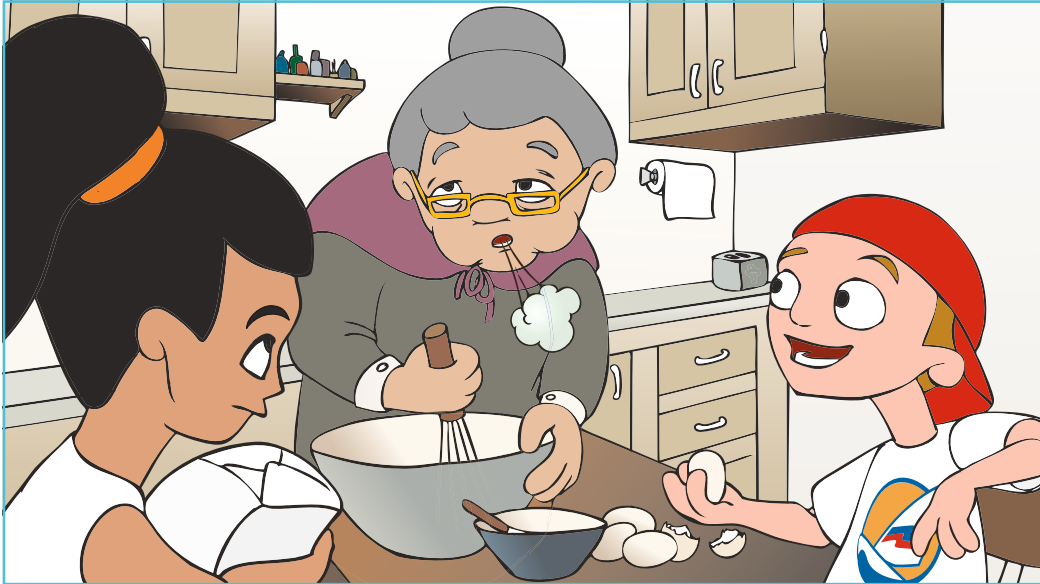




Beaten



The problem

Granny is scared of electric mixers, but she gets tired when she uses a whisk to beat eggs for pancakes or cake mixes. Is there a better way for Granny to beat eggs?

Can you help Jack and Jill come up with a solution.

Beaten

Objectives

Applying knowledge of:

- Gears and/or pulleys
- Energy efficiency
- Evaluating efficiency
- Applying principles of fair testing and product safety

Other materials required

- Ruler
- Stopwatch
- Cups or small bowls half full of warm water and a few drops of washing-up liquid
- Trays to stop spills
- Volunteers from another group to test the mixers
- Towels to dry up

Fair testing and fun

- Safety first: How close are your hands to the beaters?
- How fast do the beaters turn?
- How well does the mixer work? How efficient is it?
- How comfortable, easy and safe to use is it?

Extra challenges

- Make a super-safe mixer with a drive mechanism that 'slips' if you get a finger or a tie stuck in the beaters.
- Turn it into a dough mixer! The beaters should turn as slowly as possible compared to the handle. Try it for real with flour and water.
- Can you adapt your mixer to become a washing machine? Make a top-loading washing machine in a cup. Use tiny squares of cloth with sauce as the test clothes. As you turn the handle one way, the beaters should rotate back and forth.

◀ Need help?
Look at:



Sweeper



Flywheeler



Principle Models Building Instructions booklet for gears and pulleys