# Returning tin

In this activity you will construct a returning tin that uses the law of conservation of energy to come back to its start point all on its own.

Any sort of tin can be used for this activity, such as a hot chocolate tin, or even a plastic jar or bottle. Anything that will roll.



You will also need:

* a rubber band to thread through the tin or be located inside it
* a weight that will fit inside the tin and hang off one side of the rubber band
* some way of attaching the rubber band to the ends of the tin or of threading it through the ends

The idea is to have the main mass inside the tin off-centre i.e. not along the centre of the tin but to one side of it.

As the tin rolls, the mass will wind up around the rubber band and when the tin stops, the mass will unwind again and should bring the tin back to where it started. Amazing.

Outline below what materials you used and how you connected everything together. Try to be innovative in your design rather than just copying.

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How well did your tin work on the first attempt? What did you need to modify and improve?

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What type of energy does the tin have when you first roll it along the floor?

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What type of energy does the tin have when it stops at the end of its outward roll?

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How could you tell if your tin followed the law of conservation of energy?

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