

How to Make a Whirligig

Tickle your child's curiosity with this stovetop whirligig, a project that helps kids learn about the science behind heat. This science experiment is sure to amaze and entertain your child as she explores the scientific world.

What You Need:

- 10"x 10" cardstock
- Ruler
- Pencil
- Scissors
- 12" metal knitting needle with button (not ball) end
- Disposable foil pie pan
- Rocks
- Pans
- Hot pads



What You Do:

1. First, ask your child to draw a circle on piece of 10" x 10" cardstock by tracing the edge of a pie pan, turned top-down on the cardstock. She should also mark diagonal lines across the page from corner to corner, creating an "X".
2. Have your child cut out the circle. Then, she can cut inward about an inch from the current edge and continue to cut outward, in a spiral pattern. Make sure the end of the spiral has a large, rounded end.
3. Invite your child to gently press pencil tip into the intersection of the "X" to make a dimple (not a hole) in the rounded end of the spiral. Have her practice on scrap first.
4. Invite your child to push the knitting needle point through the center of the pie pan, through the bottom. When she turns the pan over, the flat end will be under the pan and the point will point up.
5. Invite your child to balance the dimple on the point of the needle. The spiral forms a cone shape as it falls. If the end of the spiral touches the pie pan, have her snip off extra length. Set the spiral aside.
6. Have your child help you choose a skillet or pot that your pie pan and spiral will fit inside of. Skillets and big soup pots work best for this activity.
7. Place the cold pan on a burner. Place the pie pan inside and weight it down with 2 or 3 rocks. Balance the spiral on the point of the needle. Turn heat on low, then medium, then high, then off. What happens? Does the spiral start and stop just as quickly for all pans? Does the spiral spin the same on low heat (medium, etc.) for all pans? What does the spin tell us about the pan metal?
8. Try moving the setup to the top of the toaster, an electric grill, a radiant heater, an incandescent bulb, a fluorescent bulb, a flashlight, a wood stove, the top of the refrigerator, a computer hard drive, the hood of the car... Provide an energy fact book for your child to look up answers to the questions that arise!