THE INCREDIBLE MAGIC HOOEY STICK
by John Banister-Marx
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Here's an exciting idea to teach the real scientific method, the edifice of science -- critical thinking. Of course we're talking about skepticism, empiricism and logic. And the Magic Hooey Stick is just the activity you've been looking for.

Here are the construction plans (below). If you don't have the time or tools, check for commercial availability of Magic Hooey Sticks in the Magic Hooey Stick lesson on the ENSI site, or contact the ENSI webmaster.

Make 1 Magic Hooey Stick set per team of two students. For 12 Magic Hooey Sticks, purchase the following:

**MATERIALS:**
(2) 3-foot x 3/8 inch dowels, (2) 3-foot x 1/4 inch dowels, (12) 3d 1-1/4 inch smooth box nails

**TOOLS NEEDED FOR MANUFACTURE:**
- hammer (to set nail in main shaft)
- belt/disk sander (to smooth edges)
- drill press or hand drill (to drill "propeller" hole and tap hole for nail)
- band saw, hand saw, or hack saw (to cut dowels to length)
- bastard half-round or round file (to create the 11 grooves in the main dowel shaft); bench grinder works faster
- vise (for holding the larger dowel piece as you use the file to create the grooves)

**ASSEMBLY PROCEDURE:** (lengths are approximate due to cutting loss)
1. Cut each 3/8" dowel into six 6-inch lengths.
2. Cut each 1/4" dowel into six 4-1/2 inch lengths, and six 1-3/8 inch lengths. Make sure you now have twelve 3/8" dowels of 6" length, twelve 1/4" dowels of 1-3/8" length and twelve 1/4" dowels of 1-3/8" length.
3. Sand the ends and edges of all dowels to prevent splintering.
4. Using a 1/16" drill bit, drill a hole exactly centered at one end of the larger (3/8") dowel to a depth of ~5/8".
5. Make a mark with a pencil exactly 1" from the end of the dowel with the drilled hole. From this mark, place 10 more pencil marks exactly 1/4" from each other for a total of 11 pencil marks running approximately half the length of the dowel.
6. Using a 1/8" drill bit, drill a perpendicular hole all the way through, at the exact middle of the small 1-3/8" long 1/4" dowel.
7. Check for drill hole splinters on this small piece and sand smooth around hole.
8. Sand polish the ends of this small 1-3/8" piece.
9. Place the larger 3/8" dowel piece in a vise and create the 11 grooves using the bastard half round file. This will take approximately 6-8 strokes to create each 1/8. deep groove. Best to have the groove somewhat v-shaped.
10. Tap the nail in place to secure the propeller to the main, now notched. shaft.

Hope you enjoy it!
John Banister-Marx
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[Discussion Questions that follow are optional. See Teacher-Prep (from webmaster) for a sample presentation strategy and other information.]
Investigating the Magic Hooey Stick

After investigating and attempting to master the psychic forces of the Magic Hooey Stick, answer the following questions:

1. Were you able to make the Magic Hooey Stick respond to your commands?

2. Explain the difference between a scientific explanation and a supernatural explanation. Is one explanation "better" than the other? Explain your position.

3. Why is a **supernatural** explanation for the motion of the Magic Hooey Stick not acceptable in a **science** class?

4. Why would some cultures actually prefer one type of explanation over another?

5. What is your scientific explanation? How sure are you that your explanation is the correct explanation? What else could you do to increase the confidence in your explanation?

6. If someone were **unable** to collect scientific evidence to explain how the Hooey Stick works, does this absence of evidence provide "proof," for the claim that the Hooey Stick operates under influence of psychic powers? Explain why or why not?

7. If someone were **able** to develop and verify a scientific explanation for how the Hooey Stick works, does this necessarily eliminate the possibility of a supernatural cause for your teacher's ability to make the stick move? Explain.

**Extension**: In a pre-scientific age an appropriate explanation for the Magic Hooey Stick might have focused on its mythical origin and some moral lesson or theistic power. Develop a one paragraph myth that is relevant to some culture (real or fictitious) and does not attempt to be scientific, but is emotionally pleasing, morally instructive, and socially reassuring (on back).