

**A Field Guide to**  
***Deal, or, How I Became Radioactive***

**by Emily Joyce**



## Marie Curie's Radioactive Cookbook

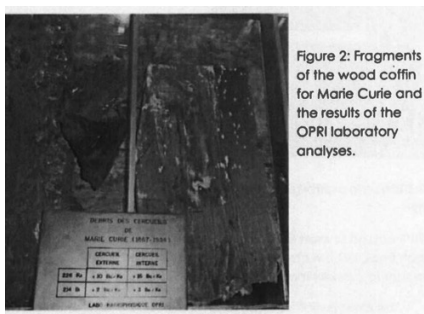
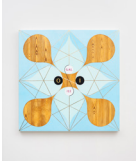


Figure 2: Fragments of the wood coffin for Marie Curie and the results of the OPRI laboratory analyses.

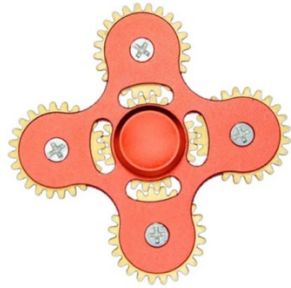
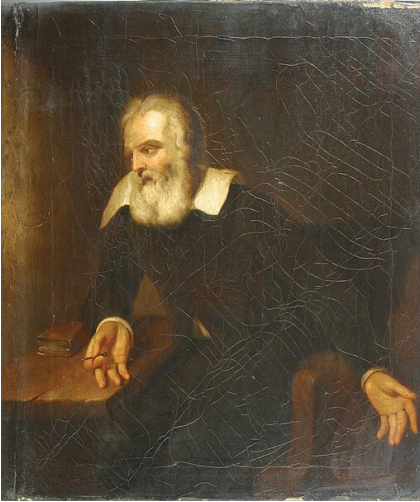
Marie Curie's original notebooks and her daily objects are still radioactive and will be for at least another 1,500 years. They are sealed in lead-lined boxes and those who wish to consult them at France's Bibliothèque Nationale must wear protective clothing and sign a liability waiver.

Many dangerous elements—thorium, uranium, plutonium—were just sitting around in Curie's home laboratory, glowing at night, which she thought beautiful, "like faint, fairy lights," she wrote in her autobiography. She carried these glowing objects around in her pockets.

In 1995 her radioactive remains were exhumed and transferred by workers in hazmat gear to a lead-lined coffin in the Pantheon, where she became the first *radioactive* woman to lie in state.



## ***Galileo's Fidget Spinner***



(attributed to) Bartolomé Esteban Murillo, *And Yet It Moves*, 1643

Galileo Galilei depicted in a prison cell where the words “Eppur si muove” are scratched on a wall.

It's 1633, and Galileo Galilei has been sentenced to house arrest by the Holy Office's inquisition. Isolated and unable to conduct his work, Galileo formulates the concept of inertia and uses his understanding of friction and gravity to invent the fidget spinner. This toy, he hopes, will help him stave off boredom and anxiety.

It is well documented that after his abjuration Galileo muttered the rebellious phrase “and yet it moves.”

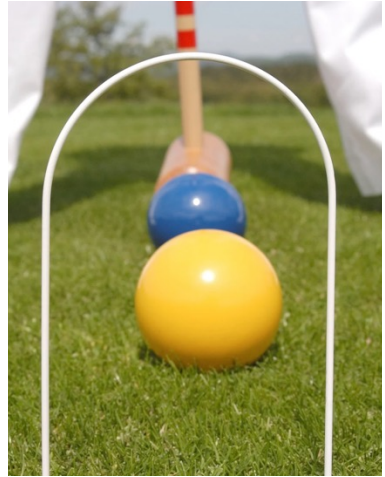
And yet it spins.

Galileo's other inventions of note:

Early versions of the telescope, microscope, pendulum, thermometer, accurate clocks, and geometric compass.



## Arches, Gates, Hoops, and Wickets (every one of them portals)

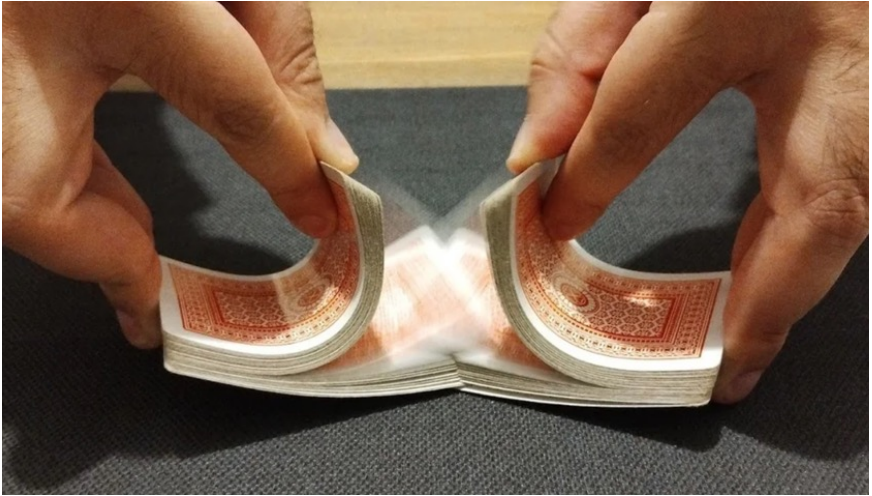


The architecture of the Mezquita in Córdoba, Spain (785 AD)— specifically the densely spaced, repeating “horseshoe arches” with their bi-colored patterns—makes rhythm physical. The mosque-cathedral has the power to put even the most oblivious tourist into an ecstatic trance as they weave through the arches. If the Mezquita is the manifestation of a gameboard fantasia in 3D, then the sightseers are the tokens.

Who’s playing the game?



## Cards, shuffles, and math



A perfect shuffle is a riffle in which the deck is split into two equal-sized packets and the interleaving between these two packets strictly alternates between the two. There are two types of perfect shuffle: an in shuffle and an out shuffle, both of which can be performed consistently by well-trained dealers and magicians. When a deck is repeatedly shuffled using these permutations, it remains much less random than with typical riffle shuffles, and it will return to its initial state after only a small number of perfect shuffles. In particular, a deck of 52 playing cards will be returned to its original ordering after 52 in shuffles or 8 out shuffles. This fact forms the basis of several magic tricks.

The artist plays a trick (is it cheating, physics, or magic?): George de la Tour made two nearly identical versions of the same painting. The only difference between the two are the color palette and the suit of the playing card that the cheater hides behind his back.



Georges de la Tour, *Cheat with the Ace of **Clubs***, 1634 (Kimbell Art Gallery)

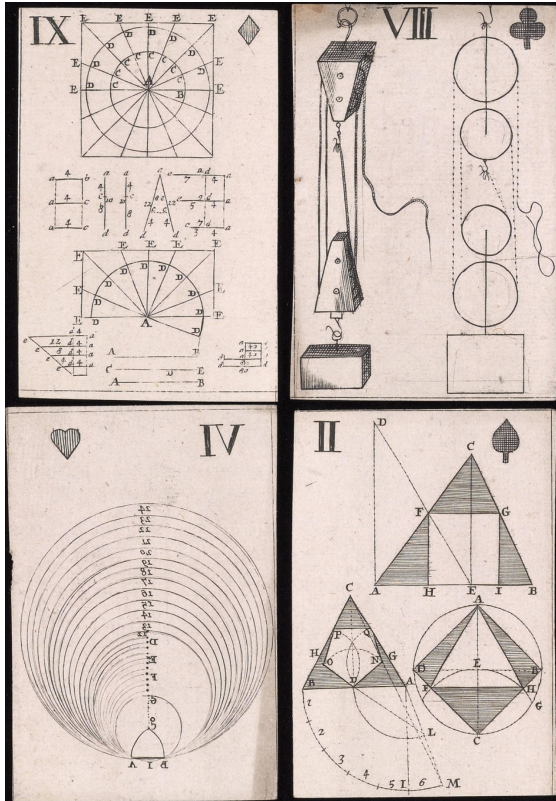


Georges de la Tour, *The Card Sharp with the Ace of **Diamonds***, 1638 (Louvre)



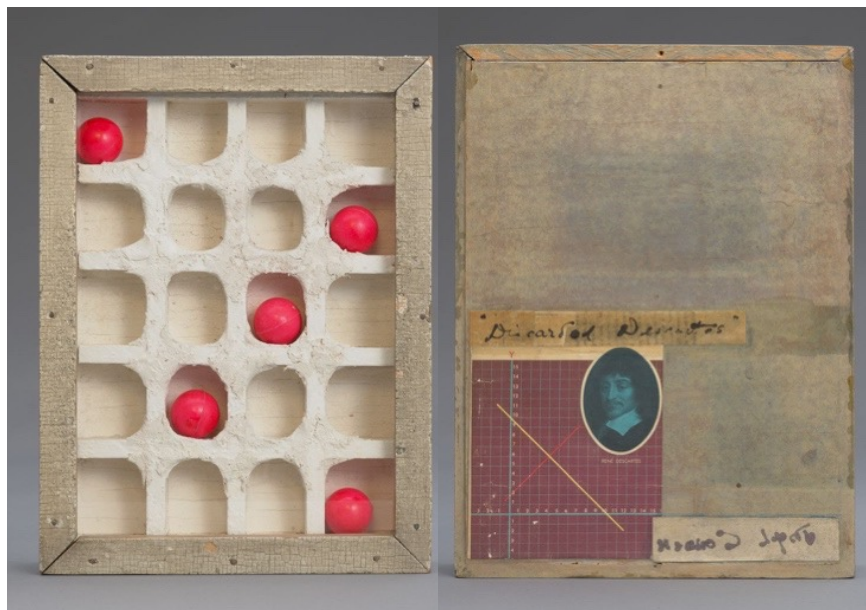


## ***Discarded Descartes on the Bedroom Wall***



René Descartes (named, literally “The Cards”) designed his own deck of cards: *The use of the geometrical playing-cards, as also A discourse of the mechanick powers* (pub. 1697), now at the Yale Libraries.

They are a set of playing cards designed by Descartes to describe and teach geometry.



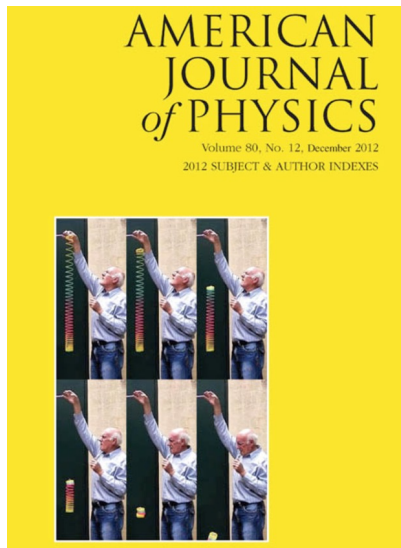
Joseph Cornell, *Discarded Descartes*, 1954-1956 (The Menil Collection, Houston, Texas)

Signed by Cornell in verso x2 (backwards, on the back of the artwork)





## ***Falling Slinky***



What if Isaac Newton got hit on the head with a falling slinky instead of an apple?!

Betty James was an American businessperson who came up with the name for the Slinky, which her husband and the engineer Richard James invented. She ran James Industries, the firm that manufactured the toy, for forty years starting in 1960, when, in the face of declining sales, Richard left the family and moved to Bolivia to join a religious sect. When Betty took over management of the firm, sales soared once again with her introduction of the Slinky Dog and the Rainbow Slinky.

The science behind the phenomenon of the “Falling Slinky”: The tension of the spring counters the pull of gravity, holding the bottom end of the Slinky in place (in mid-air) until it “gets the information that the tension has changed.” By the time the bottom end of the Slinky gets the memo, the top end has fallen to meet it.

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GALLERY

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