

Scientific Inquiry Among the Preschool Set

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When engaged in what looks like child's play, preschoolers are actually behaving like scientists, according to a new report in the journal *Science*: forming hypotheses, running experiments, calculating probabilities and deciphering causal relationships about the world.

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The report's author, [Alison Gopnik](#), a psychologist at the University of California, Berkeley, says she based it on more than 10 years' worth of research and studies, including some of her own.

In one study, for example, an experimenter performed five different sequences of three actions each, as a 4-year-old looked on. The sequences would either activate a toy or fail to activate it.

When the children were given the toy, they often performed only the actions required to activate it. They were able to eliminate the unnecessary actions by observation.

Other studies have found that when children are simply taught, they don't explore and test multiple hypotheses, Dr. Gopnik said, adding:

“There's a lot of pressure from parents and policy makers to make preschools more and more like schools. This research suggests the opposite.”

In another study, an experimenter held a toy that had four tubes. Each tube did something different — for instance, one lit up and one made a squeaking sound.

In one case, the experimenter accidentally made the toy squeak by bumping into it and then left the room. The children experimented with the toy and figured out the three other features.

But when the experimenter made the toy squeak on purpose and then handed it to a child, he or she simply repeated what the experimenter did and never explored the toy's other features.

“If we want to have great scientists, letting preschoolers explore, play and do pretend play exercises the capacities for doing science,” Dr. Gopnik said. “Not so much the flash cards and the Baby Einstein videos.”