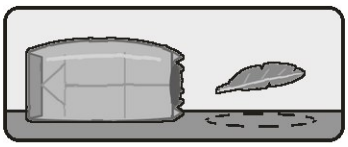
An "empty" bag: what's inside? Helping your child see air

Parent page · ages 4–5 · goes with the video "Understand the concept"

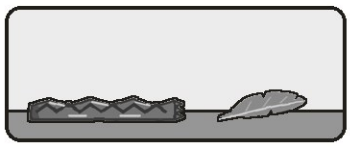
A logical idea

Does your child say "an empty bag has nothing in it"? They turned the bag upside down and shook it: nothing fell out. In everyday life, "empty" does mean "nothing inside," and air can't be seen: we mostly notice it when it moves. They trust what they can see, which is reasonable.

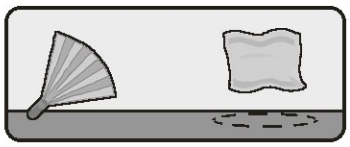
The key idea



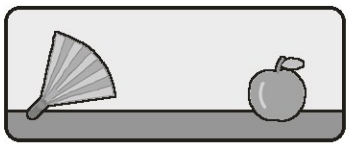
puffy bag, opening toward the feather: the feather flies off



flat bag: the feather stays (or nearly)



paper fan toward a scrap of tissue: it moves



paper fan toward an apple: it stays

A puffy paper bag isn't empty: it's full of air. We can't see air, but it can move things as light as a feather: a bag snapped open, then given a quick squeeze, pushes a feather. A flat bag, with almost no air left, barely pushes it. Careful, "air pushes everything" isn't a rule either: in front of a bag or a fan, an apple or a pebble stays put.

Questions instead of corrections

- "What do you think: will it move, or stay?"
- "What came out of the bag?"
- "How could we find out if there's something inside?"

After each try: "What did you see?"

Safety

An adult stays right there for every try. Paper bags only: never a plastic bag (suffocation risk), and never a bag over anyone's head. Snap the bag open at arm's length, the opening away from faces; don't pop it (loud bang near the ears). No balloons: children under eight can choke or suffocate on uninflated or broken balloons. Feathers from a craft store, never picked up outside (avoid touching wild birds' feathers; in the US, keeping most wild bird feathers also requires a federal permit). Feathers, scraps of tissue, and small objects: nothing in the mouth, out of reach of younger children. A paper fan, never an electric fan. Windows closed: a draft would spoil the try.

Page 2, to do together (no reading needed)

- Show the picture at the top: a paper bag turned upside down, the opening facing down, nothing falling out. Say: "Lili thinks there's nothing in the bag. What do you think?"
- Before each try, your child circles or points to one picture under the question mark: moves (a small object lifted, with three motion lines) or stays (the same object resting). After the try, they circle one under the eye, without erasing their first choice. They can also point, and you circle for them.
- 1 to 4. Each row shows a tool (bag or fan) and an object: the feather, the apple, the scrap of tissue. Do the try with the real objects, a hand's width apart; no air is drawn. Start with two rows, and cover the others with a sheet of paper.
- 5. The challenge: the basket is at the end of the table. Where should the bag go so the feather lands in the basket? Your child circles one of the two circles, then you try it together. 6. Your child draws what surprised them.

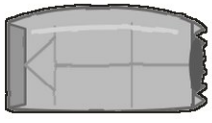
Before you play, do every try yourself and keep the ones that work clearly (if the feather barely moves, pinch the bag's opening a little; set the basket not far from the feather). Keep this page out of view until after the activity.

For you, after your child has checked (tries done by you first)

- Paper bag snapped open, puffy, the opening pinched a little and a hand's width from the feather, given a quick squeeze with both hands: the feather moves.
- Flat bag, squeezed: the feather doesn't move, or barely.
- Paper fan waved twice, a hand's width away: the feather and the scrap of tissue move; the apple and the pebble stay.
- Feather race: the bag goes on the side of the feather away from the basket, the opening toward the feather: the air pushes the feather away from the bag.

A good sign: they talk about air, or suggest squeezing the bag to see. If they still say "there's nothing," do the bag and the feather again together: it often takes several tries.

A few days later, without making a big deal of it (adult cuts out)



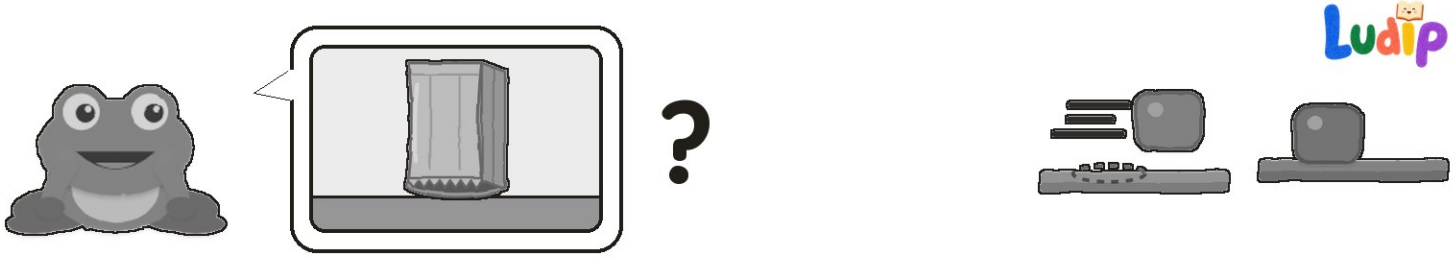
a puffy paper bag, opening toward a feather



a craft feather



Ask: "If we squeeze the bag, will the feather move or stay?" Circle the picture of what you think. Why? Then try together (paper bag, an adult right there, windows closed, nothing in the mouth) and circle what you see.



1

2

3

4

5

6