

# CUPBOARD SHAPES



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## CUPBOARD SHAPES

The Maths Shapes were arguing again, this time about who was the most useful. The mathematician, who needed to use the shapes, locked them in the cupboard until they had sorted it out.

There was Cylinder, round like a pipe with flat ends, Pyramid, flat and square at the base and pointed, Cube, just like a square box and Sphere, round all over, whichever way you looked at it. Right-angled Triangle was already in the cupboard and not too happy about it, especially since Stick was lying there fast asleep and snoring.

The others were also a bit annoyed about being locked in the cupboard which wasn't particularly nice but they couldn't seem to stop squabbling. They decided that each of them would have to prove how useful their shape could be. That should settle the argument and hopefully get them out of there.

Right-angled Triangle was a bit upset that he wasn't being included, just because he was two-dimensional and not three-dimensional. He went to stand in a corner into which he would have fitted perfectly except for one thing.

"These walls aren't vertical!" he exclaimed.

Sphere and Cylinder said, "No, the floor isn't horizontal. We're rolling away!"

They laughed at Triangle who kept moaning about being excluded. "You are so flat, there's no depth to you. Besides, you're too pointy! You can't stand on your own." They also felt Triangle was too lazy and just lay around all day.

"But look at Pyramid! He's just as pointy as I am!"

"Only at my apex. If I stood on that, I'd fall over. But I can stand on my base, that's nice and flat."

“And I,” said Sphere, “can roll and circle and rotate and orbit. Why do you think planets are spheres? So they can rotate and orbit around the sun!”

“Yes, yes, we all know how important you are,” said Cube.

“And cricket balls and footballs and baseballs are spheres so they can fly through the air!” continued Sphere. “And ball bearings are spheres and they’re used in cars and bicycles. Atoms and molecules are spherical, too!”

The others were getting bored with Sphere’s boasting. Pyramid pointed out that his shape had been used to build the pyramids of Egypt and they’d named them after him!

Cylinder just wanted to get out of the cupboard. “There’s not enough room in here to roll around. And if I stand on my base, I’ll bump into the shelves.” She was just a bit too long to fit comfortably among all the boxes and supplies.

Cube had no problem at all. He was nice and square and could line up against any of the boxes. But he also had a plan.

“Look,” said Cube, “if we all co-operate, we can become really tall. And then we’ll reach the door handle. And then we can get out of this stuffy cupboard. I’ll be the base because I’m nice and solid - on any side.”

“And I’ll go on top of Cube,” said Cylinder. “My ends are flat but I’m taller.”

“Then I’ll go on top of Cylinder’s top end,” said Pyramid. “With my pointy apex, we’ll be really tall. Then I can reach the door handle and we’ll escape!”

“What about me?” asked Sphere, who up till now had seemed the most important. “Where do I go?”

“Hmmm,” the others chorused. “You’ll just have to roll around until we’ve got the door open.”

Sphere didn't like this. She wanted to be useful and she wasn't about to stay in the corner with Triangle and Stick.

The other shapes groaned and strained. Cylinder was having trouble getting on top of Cube. Every time she rolled towards him and tried to roll on top she knocked Cube over on yet another side. Soon Cube was rolling - plonk, plonk, plonk - around the cupboard as well.

Pyramid had a great idea. He would lie on his side on the floor with his flat base next to Cube's side. Then his pointy apex would lie opposite and form a ramp. Cylinder could roll along Pyramid's side up onto Cube.

That sounded like a good plan except that Cylinder couldn't quite lift herself up onto Cube. She strained and struggled and just rolled back down Pyramid.

Right-angle Triangle was watching and raised his pointy finger. "I can help."

"How?" asked Cube, annoyed at being bumped so much.

"If I lie on my back and point my pointy bit - ok, my apex - underneath Cylinder, I can push her up Pyramid's slope."

They agreed that it might work and was better than nothing. Cylinder placed herself at the apex of Pyramid which was lying next to Cube. Triangle prodded his point underneath Cylinder and huffed and puffed her up the slope of Pyramid.

Stick kept insisting that he could help because he could stand upright. But they ignored him. Sphere decided to help anyway by rolling against Triangle for that extra push.

Slowly, gradually Cylinder rolled up Pyramid onto one of Cube's four sides. Triangle rushed around the side of Cube to help Cylinder to stand up on her base. Then he pushed Pyramid upright but how to get on top of Cylinder?

"Come on, Stick!" said Triangle.

"Oh, now you want me!" said Stick. "Well, alright then."

Together they levered up Pyramid, sliding him upwards using the door and Cylinder as a guide.

Now they had a really tall structure which could reach the door handle.

Cube,

Cylinder and Pyramid cheered as if they had achieved something really amazing. None of them thanked Triangle or Stick or Sphere - without whom they would never have managed it!

Pyramid leant on the door handle, the door handle clicked down, the door opened a crack. Triangle, because of his thin shape, managed to squeeze through followed by Stick who slid out like a snake. He jammed the door open for Sphere who rolled out as quickly as a ball can roll.

Once outside, the two shapes plus Stick agreed that Cube, Cylinder and Pyramid hadn't been very nice, and hadn't thanked them for the help they'd given. So, Sphere, helped by Triangle and Stick, rolled against the door which locked once more.

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Which shape do you think is the most useful?

Can you draw the escape plan of the mathematical shapes?