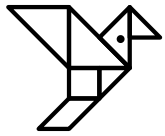


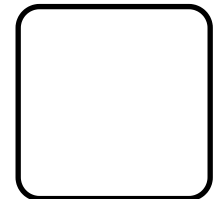
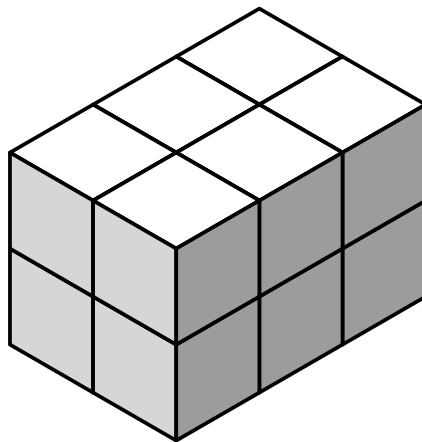


Learn a new puzzle

Painted Cubes

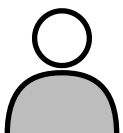


The block is dipped in paint, then taken apart.
How many small cubes have paint on exactly 3 faces?



cubes

- 1 Corners: 3 painted faces. There are 8 corners.
- 2 Edges (not corners): 2 painted faces.
- 3 Middle of a face: 1. Hidden inside: none.



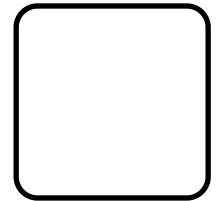
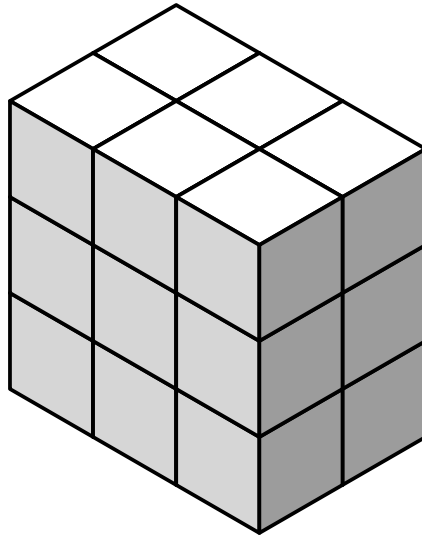
Where are the cubes with only one painted face?



1

Painted Cubes

The block is dipped in paint, then taken apart. How many small cubes have paint on exactly 1 face?

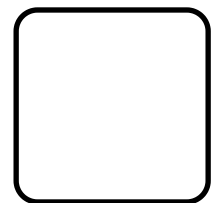
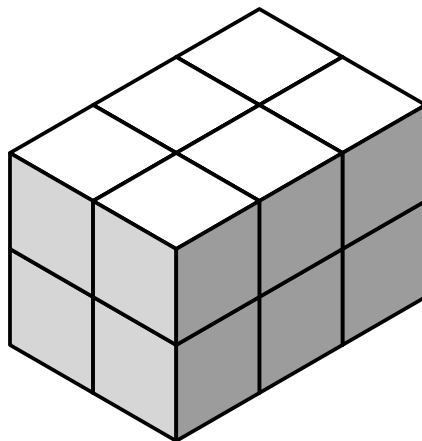


cubes

2

Painted Cubes

The block is dipped in paint, then taken apart. How many small cubes have paint on exactly 2 faces?



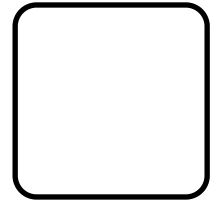
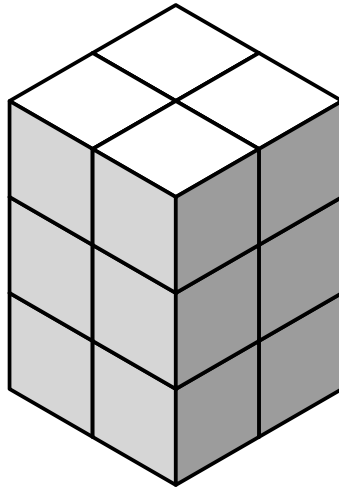
cubes



3

Painted Cubes

The block is dipped in paint, then taken apart. How many small cubes have paint on exactly 2 faces?

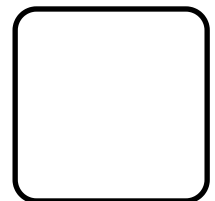
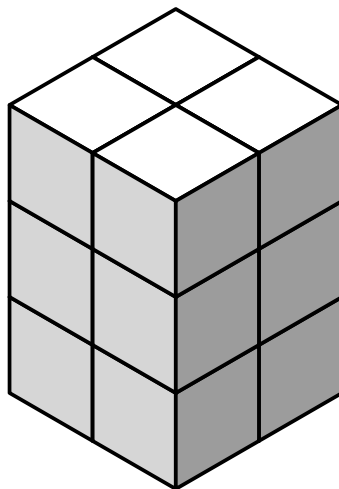


cubes

4

Painted Cubes

The block is dipped in paint, then taken apart. How many small cubes have paint on exactly 3 faces?



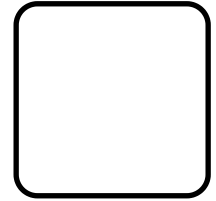
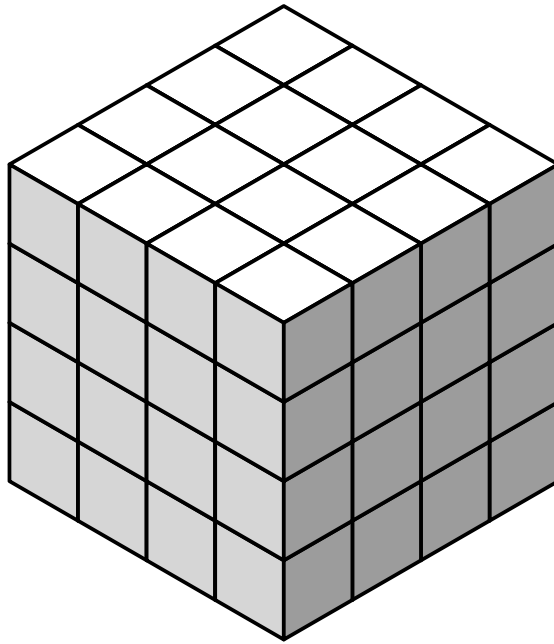
cubes



5

Painted Cubes

The block is dipped in paint, then taken apart. How many small cubes have paint on exactly 1 face?

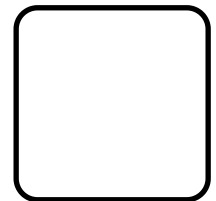
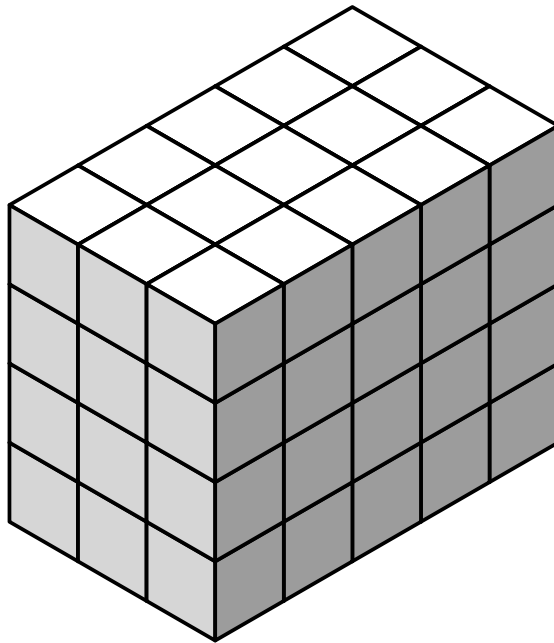


cubes

6

Painted Cubes

The block is dipped in paint, then taken apart. How many small cubes have paint on exactly 1 face?



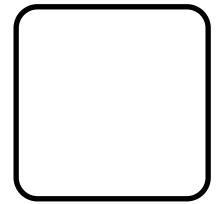
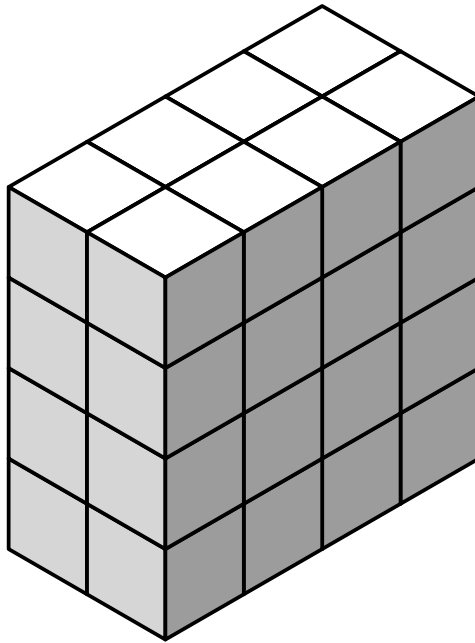
cubes



7

Painted Cubes

The block is dipped in paint, then taken apart. How many small cubes have paint on exactly 1 face?

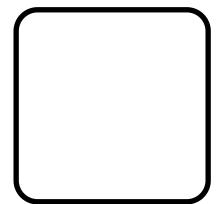
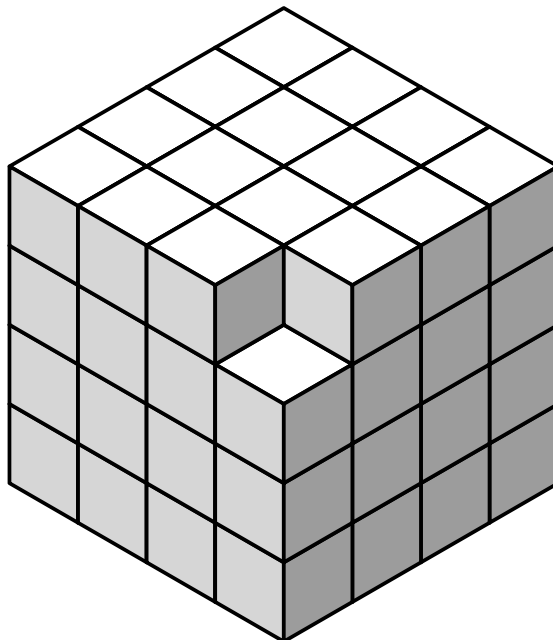


cubes

8

Painted Cubes

Some corner cubes were taken out. The block is dipped in paint, then taken apart. How many small cubes have paint on exactly 1 face?



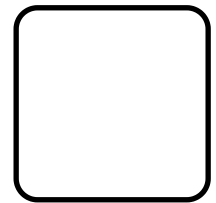
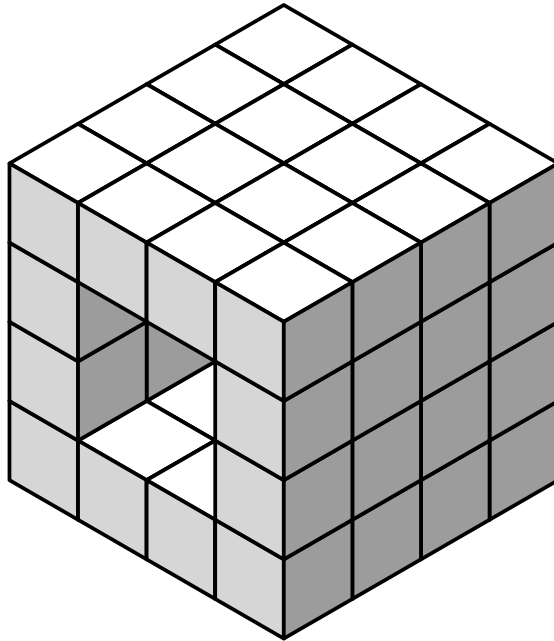
cubes



9

Painted Cubes

A tunnel goes straight through. The block is dipped in paint, then taken apart. How many small cubes have paint on exactly 3 faces?

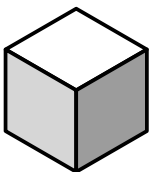


cubes

10

Painted Cubes

A block of small cubes was dipped in paint, then taken apart. How big was the block?



a corner cube:
3 painted faces

8 small cubes have 3 painted faces.

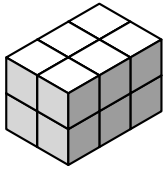
32 small cubes have 2 painted faces.

32 small cubes have 1 painted face.

_____ by _____ by _____

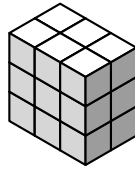
**Answers** For grown-ups. Cut off or keep this page aside until the puzzles are done.**Learn · Painted Cubes**

#1

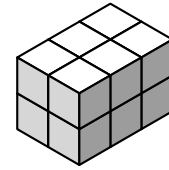
8
cubes

2. Cubes in the middle of each face have 1.

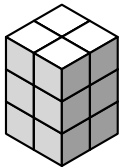
#2

2
cubes

4. Cubes along the edges (not corners) have 2.

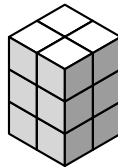
4
cubes

#3

4
cubes

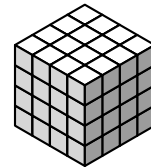
4. Cubes along the edges (not corners) have 2.

#4

8
cubes

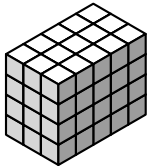
8. Corners have 3 painted faces.

#5

24
cubes

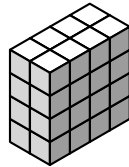
24. Cubes in the middle of each face have 1.

#6

22
cubes

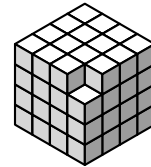
22. Cubes in the middle of each face have 1.

#7

8
cubes

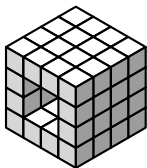
8. Cubes in the middle of each face have 1.

#8

24
cubes

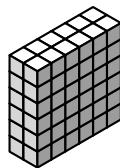
24. Cubes in the middle of each face have 1. Where cubes were taken out, the cubes next to the gap get extra paint.

#9

24
cubes

24. Corners have 3 painted faces. Where cubes were taken out, the cubes next to the gap get extra paint.

#10

 $2 \times 6 \times 6$ $2 \times 6 \times 6$. Sides of 2, 6 and 6 have 0, 4 and 4 cubes between their corners: edges $4 \times (0 + 4 + 4) = 32$ with 2 faces; face middles $2 \times (0 \times 4 + 4 \times 4 + 0 \times 4) = 32$ with 1 face. No other block fits.