

Volume – counting unit cubes (a first look)

WHAT THIS LESSON TEACHES

Volume is how much space a solid fills. We find it by counting the equal unit cubes that fit inside, including any cubes hidden underneath or behind.

→ A box packed with 8 unit cubes has a volume of 8 cubes.

→ A two-layer stack still counts the bottom layer even when the top hides it.

MODEL THIS ON THE BOARD

COUNT THE CUBES IN A SMALL TOWER

① Look at the tower built from unit cubes. The bottom layer has 2 cubes side by side.

② A second layer sits on top with another 2 cubes.

③ Add the layers: $2 + 2 = 4$. The volume is 4 unit cubes.

DISCUSSION STARTER

REFLECT How is counting cubes for volume like counting squares for area?

ANSWER KEY

a) 12 cubes

Q1: 3

Q2: 4

Q3: 4

Q4: 8

Q5: 6

a) Always — That is the definition of volume for this lesson.

b) Always — Every cube that fills space counts, seen or unseen.

c) Always — One unit cube fills one unit of space.

d) Never — Hidden cubes behind or under must be counted too.

EXTENSION SHEET · STRETCH ANSWERS

S1: 75 cm^3

S2: 60 cm^3

S3: 75 cm^3