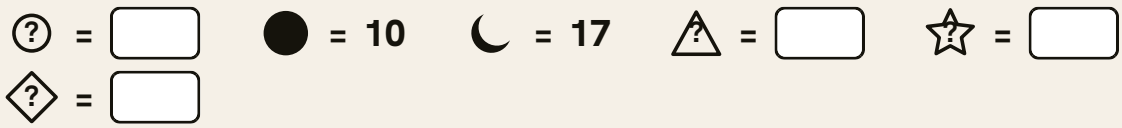
Crack the Vault Code

Someone locked the vault with a 4-digit code. Work out what each shape is worth and crack it.

Name: _____ **Date:** _____

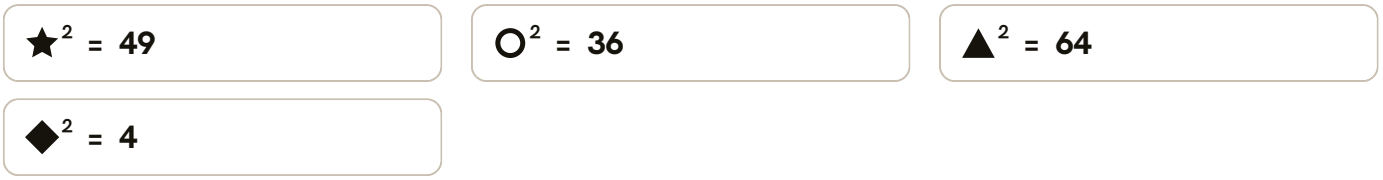
1 THE KEY



Every symbol is a whole number from 1 to 20. A number in front of a shape means multiply: 2 stars = 2 x star. A small 2 after a shape means square it: star^2 = star x star.

2 FIND THE MISSING VALUES

Some shapes in the key are missing. Use these to work them out, in order, and write them into the key.



3 CRACK THESE

1. $\text{moon}^3 - \text{star} =$ ☐

2. $2 \times (\text{star} + \text{O}) - \text{dot} =$ ☐ CODE 1

3. $(\text{star} + \text{O})^2 =$ ☐

4. $2 \times (\text{diamond} + \text{star}) - \text{triangle} =$ ☐ CODE 2

5. $\text{star}^2 + \text{dot}^2 =$ ☐

6. $\text{diamond}^3 =$ ☐ CODE 3

7. $\text{triangle}^2 - \text{O}^2 =$ ☐

8. $\text{moon} \times \text{O} - \text{dot}^2 =$ ☐ CODE 4

9. $(\text{dot} + \text{O})^2 =$ ☐

10. $\text{O}^2 + \text{moon} =$ ☐

4 THE VAULT CODE

☐ ☐ ☐ ☐

Write the ONES digit of your answers to problems 2, 4, 6, 8 (the ones tagged CODE 1-4), in that order. That opens the vault.

TEACHER / PARENT

Answer Key

Crack the Vault Code · Grade 6 Crack the Code

The key

ring = **6** (hidden) · circle = **10** · moon = **17** · triangle = **8** (hidden) · star = **7** (hidden) · diamond = **2** (hidden)

Every symbol is a whole number from 1 to 20.

1.	moon^3 - star	**4906**
2.	2 × (star + ring) - circle	**16**
3.	(star + ring)^2	**169**
4.	2 × (diamond + star) - triangle	**10**
5.	star^2 + circle^2	**149**
6.	diamond^3	**8**
7.	triangle^2 - ring^2	**28**
8.	moon × ring - circle^2	**2**
9.	(circle + ring)^2	**256**
10.	ring^2 + moon	**53**

Vault code: **6 0 8 2**