



The Pumpkin Witch's Spellbook Lock

Use your math skills to figure out the value of each Halloween symbol and unlock the witch's secret potion chest.

Name: _____ Date: _____

1 THE KEY

$$\heartsuit = \square \quad \spadesuit = \square \quad \text{crescent moon} = 14 \quad \text{lightning bolt} = 11 \quad \text{plus sign} = \square \quad \text{circle} = 8$$

Every symbol is a whole number from 1 to 15. A number in front of a shape means multiply: 2 stars = 2 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.

$$4 \heartsuit = 52$$

$$2 \spadesuit = 8$$

$$5 \text{plus sign} = 45$$

3 CRACK THESE

$$1. (\spadesuit + \text{lightning bolt}) \times \text{circle} = \square$$

$$2. \heartsuit \times \text{lightning bolt} = \square$$

CODE 1

$$3. 100 \spadesuit + \text{lightning bolt} = \square$$

$$4. 100 \text{plus sign} + \text{crescent moon} = \square$$

CODE 2

$$5. 10 \text{crescent moon} - \text{lightning bolt} = \square$$

$$6. \text{circle} \times \text{crescent moon} - \spadesuit = \square$$

CODE 3

$$7. (\heartsuit + \text{circle}) \times \text{lightning bolt} = \square$$

$$8. \text{circle} \times \text{lightning bolt} = \square$$

CODE 4

$$9. (\text{lightning bolt} - \spadesuit) \times \text{circle} = \square$$

$$10. 10 \text{crescent moon} - \text{circle} = \square$$

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 secret potion chest.

Answer Key

The Pumpkin Witch's Spellbook Lock · Grade 4 Crack the Code

The key

 heart = **13** (hidden)
  pentagon = **4** (hidden)
  moon = **14**
  lightning bolt = **11**
 cross = **9** (hidden)
  ring = **8**

Every symbol is a whole number from 1 to 15.

1. $(\text{pentagon} + \text{lightning bolt}) \times \text{ring}$ **120**
2. $\text{heart} \times \text{lightning bolt}$ **143**
3. $100 \times \text{pentagon} + \text{lightning bolt}$ **411**
4. $100 \times \text{cross} + \text{moon}$ **914**
5. $10 \times \text{moon} - \text{lightning bolt}$ **129**
6. $\text{ring} \times \text{moon} - \text{pentagon}$ **108**
7. $(\text{heart} + \text{ring}) \times \text{lightning bolt}$ **231**
8. $\text{ring} \times \text{lightning bolt}$ **88**
9. $(\text{lightning bolt} - \text{pentagon}) \times \text{ring}$ **56**
10. $10 \times \text{moon} - \text{ring}$ **132**

Vault code: **3 4 8 8**