

Student Guide

Classify Numbers (SG p. 455)  
Questions 1–6

- 1.\* Answers will vary. Game Board 3 is the most likely to have the most winning games because many of the numbers on the board belong to more than one category on Spinner 2.
- 2.\* Answers will vary. Game Board 1 is the most likely to have the fewest winning games because most of its numbers belong to only one category on Spinner 2.
- 3.\* Answers will vary. The likelihood of a game board winning has to do with how many numbers it has that belong to multiple categories on Spinner 2.
- 4.\* Yes, some numbers belong to more than one category on Spinner 2. For example, 1 is both a square and a cube. Therefore, it is more likely to come up than a number such as 34, which only belongs to one category (composite).
- 5.\* 27 and 64; they both belong to 3 categories on Spinner 2, which is more than any other numbers on any of the four game boards
- 6.\* Any prime number or composite number that is neither a square, cube, or multiple of 3 will be the least likely to come up. This is because there is only one possible spin that will match these numbers.

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### Classify Numbers

**Number Bingo**

The goal is to place four markers in a row. This is a game for five players.

**Materials**

- two clear plastic spinners, or pencils and paper clips
- beans or other small markers
- *Number Bingo Spinners* and *Number Bingo Game Boards* pages in the *Student Activity Book*


**Directions**

1. One player is the Caller. The remaining players each choose a game board from the *Number Bingo Game Boards* page and mark the FREE space.
2. The Caller spins Spinner 1 and then Spinner 2, keeping a list of each spin on a piece of paper.
3. If there are any numbers on a player's game board that fit the descriptions on both spinners, he or she puts a marker on one of those numbers.
4. The first player with four markers in a row (horizontally, vertically, or diagonally) or a marker in each corner wins.
5. The Caller records the winner and the winning game board after each game.
6. Switch the Caller and the game boards after each game.

**Sample Play**

The Caller spins "Odd" on Spinner 1 and "Square" on Spinner 2. A player can mark either 1, 25, or 49 on the game board shown below, since these numbers are both odd and square. No other numbers on the board match both.

Sample first spin:




Possible marker positions on sample game board. Player may place marker on only one of the circled numbers.

5	35	8	25
1	FREE	10	87
34	24	65	49
84	4	23	22

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**Discuss**

1. Which game board had the most winning games?
2. Which game board had the fewest winning games?
3. Why do you think one game board won more than the others?
4. Are there numbers that match the spinner categories more often than other numbers? Which ones? Why?
5. Which numbers on the *Number Bingo Game Boards* do you think will come up most often? Why?
6. Which numbers on *Number Bingo Game Boards* do you think will come up least often? Why?

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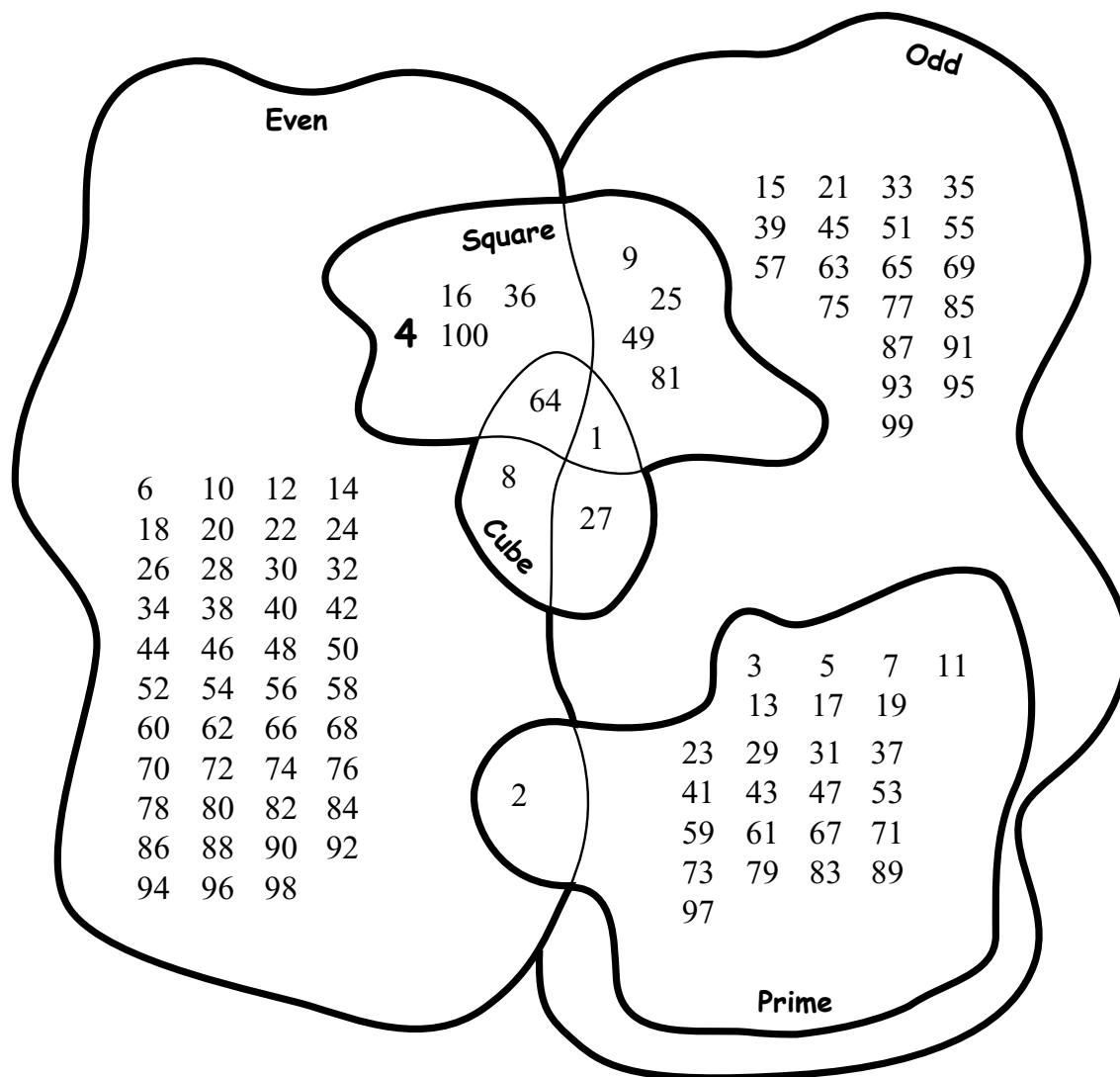
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\*Answers and/or discussion are included in the lesson.

Student Activity Book

Number Palette\* (SAB p. 389)



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Teacher Guide

What Number Am I Cards (TG pp. 1–3)

I am a square number between 20 and 30. ....25

I am a twin prime number. My twin is 11. ....13

I am a composite number. My prime factorization in  $2^2 \times 3$ . ....12

I am the only even prime number. ....2

I am the largest square number between 1 and 50. ....49

I am the largest prime factor of 15. .... 5

I am  $2^4$ . ....16

I am a twin prime number. My twin is 31. ....29

I am the next square number larger than 100. ....121

I am a factor of every number whose digits add up to 3. ....3

I am a prime number. My only factors are 1 and 41. ....41

I am a composite number. My prime factorization is  $2 \times 3 \times 5$ . ....30

I am the only number in the prime factor tree of 49. ....7

I am a square number between 30 and 40. ....36

I am a one-digit number. Prime numbers always end with a 1, 3, 7, or with me. ....9

I am neither prime nor composite. ....1

My prime factorization is  $5^2 \times 2^2$ . ....100

I am a composite number. All of my factors are 1, 2, 3, 4, 6, 8, 12, and myself. ....24

I am  $3^3$ . ....27

I am both  $3^4$  and  $9^2$ . ....81

I am the 8th odd number. ....15

I am the 11th even number. ....22

I am both a square number and a cube number. I am less than 100 and I am not 1. ....64

I am the next prime number after 47. ....53

I am the largest prime factor of 88. ....11