# Crazy 8s Race Grades 3-5

# The Big Idea

In this board game, we're speeding around a racetrack, zooming forward whenever we land on a multiple of 8. Which team will reach the finish line first?

## **Supplies**

#### In your kit:

- ★ Dice: 8
- ★ Game boards: 2
- ★ Masking tape
- ★ Race cars: 8

## You provide:

- ★ Marker: 1
- ★ Writing surface: whiteboard or large sheet of paper

- **Key Prep**
- $\star$  Open both game boards. Put a piece of masking tape next to numbers 8, 16, 24, 32, 40, 48, 56. Mark the tape with the number of times you'd multiply 8 to get the number in that spot. For example, mark the tape in to the 8 spot with "1", mark 16 spot "2", mark 24 spot "3"
- ★ Put a length of masking tape along the outside of the track alongside numbers 56 through 63. Label the tape: "The Homestretch – Roll 1 Die."
- ★ Assemble 8 race cars as shown below. Each board will need 2 cars of one color and 2 cars of a different color to distinguish the teams playing on the same board. If you think you'll have time during the meeting, you can let the kids help with this task!



## Room Set-up

★ Lay out the game mats. Place 2 pairs of dice and 4 cars (2 of one color and 2 of a different color) on each mat.

## What's the Math?

- ★ Addition
- ★ Factoring
- ★ Multiplication
- ★ Subtraction
- ★ Skip counting
- ★ Bonus: Probability







# Kickoff

"How many of you play board games at home? What are some of your favorites?" **Discuss**. "Crazy 8s Race is a lot like those games, but we're going to learn multiples of 8 while we play! And like in many other games, the 1<sup>st</sup> team to get its cars to the finish line wins!"

## Start Your Engines! (IO-I5 minutes)

- 1. Gather the kids around 1 game board.
  - ? "Do you notice anything different about some of the spaces?" **Discuss.** Let the kids catch that some spaces are green and have circles around the numbers.
  - ★ "What do these numbers have in common?" Let the kids figure out they are all multiples of 8!
- 2. Point to the number 24.
  - ★ "24 is a **multiple** of 8. 8 x 3 = 24." **Discuss.** For new  $3^{rd}$  graders, explain that multiplying a number is the same as repeat addition. So, 8 x 3 is the same as adding 8 + 8 + 8.
  - ★ "The number on the tape is the **multiplier**, or the number of times you multiply 8 to get the total. On the 24 spot, the multiplier is 3."

#### GAME RULES

- 1. Team 1 rolls their 2 dice and adds both numbers to find the sum.
  - $\star$  "For example: Team 1 rolls 4 and 3. The sum is 7."
- 2. Team 1 must move <u>both</u> of its cars in any pair of moves that adds up to the sum rolled.
  - ★ "Our sum was 7, so what are our options?" **Discuss**. Let the group find their choices:
    - o one car moves 6 spaces, the other car moves 1 space
    - o one car moves 5 spaces, the other car moves 2 spaces
    - one car moves 4 spaces, the other car moves 3 spaces
- 3. Try a sample roll and let the kids figure out those options!
- 4. Multiple cars can park on the same space at the same time.
- 5. GO SPACES: The green spaces are bonus GO spaces!
  - **?** "What's special about these?" **Discuss**: they are all multiples of 8, hence the name of the game!"
  - ★ "If one car lands on a GO space, the team rolls 1 die, then adds that number to the number on the tape to jump the car forward that many spaces."
  - ★ "For example, a car lands on the green 24 space and the team rolls a 3. The team adds 3 + 3 (the number rolled + number on the tape) and moves that car forward 6 more spaces!"
  - ★ "If both cars land on green GO spaces on the same turn, roll 1 die for each car and repeat the above steps."
  - ★ "If that bonus move lands you on another GO space, roll again to keep going!"
- 6. ROLLING CRAZY 8s: If a team's roll adds up to 8, that's Crazy 8s! In addition to taking your turn, move the <u>other</u> team's lead car back to the same space as its rear car. If the other team's cars are already sharing the same space, don't move their cars.

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- 7. SPINOUT: Beware of space 56! It's a slick oil spill that will make your car spin out. Avoid it if you can! A car that lands on 56 must roll 1 die, add it to the number on the tape (7) and move BACK that number of spaces.
- 8. HOMESTRETCH: When your team has one car across the finish line <u>and</u> 1 car in the homestretch (all spaces past 56), roll only 1 die for the remainder of the game.
- 9. FINISH LINE: The first team to get both its cars across the finish line wins!

#### Adjustments for Young Clubs (optional)

Change to Rule #5: Don't roll a die to find the number of bonus spaces – just move ahead the number of spaces on the tape.

#### Extra Challenge (optional)

At any time, teams can move 1 additional space if 1 of the dice shows a factor of the number the car lands on. Teams cannot earn more than 1 extra space per turn.

- ★ "A **factor** is a smaller number that divides evenly into the greater number. For example, if your car is on the 12 space, what are its factors that you could roll?" **Discuss.** The answer is 2, 3, 4, 6.
- ★ "If your car is on 32, what <u>dice rolls</u> are factors?" **Discuss.** Just 2 and 4!
- ★ "1 is a factor for every number, so rolling a 1 doesn't earn you anything!"
- "How many spaces have exactly 4 factors you could roll on the dice (again, not counting 1)?" Discuss. 5 spaces: 12, 24, 36 and 48 all share factors 2, 3, 4, and 6, and 30 has 2, 3, 5 and 6.
- "Which space on the board has the most factors to give you the most chances?"Discuss. Let the kids figure out it's the number divisible by every number on the die: 60!

## Ready. Set. Go! (30-40 minutes)

"Now that we understand the rules, let's race!"

- 1. Split the club into 2 teams per board. Every team, regardless of its size, should play with 2 cars and a pair of dice.
- 2. Line up all 4 cars at start.
- 3. Each team rolls 1 die. The team with the higher number takes the first turn.
- 4. Let the kids play the game as often as time and interest allow.
- 5. When you're done, ask the kids:
  - ? "What was the biggest total turn anyone rolled? How did that happen?"
  - ? "What was the hardest choice you had to make?"

#### Wrap Up

"We just used dice to learn about dividing numbers into each other – the same factors you study in school! The next time you want to get to the bottom of a number, you'll be glad you learned this."