

Play Together, Learn Together: Number Race Dice Games

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Play is the work of the child. – Friedrich Froebel, Jean Piaget, and others

When tools become toys, then work becomes play. – Bernie DeKoven

When homework becomes homeplay, then learning becomes fun. – Bob & George

This eBook describes math games for players in grades 1, 2, 3, and up using D6s (6-faced dice with faces numbered 1 to 6) and DDs (digit dice, 10-faced dice with faces numbered 0 to 9).



D6



DD

This eBook is one of a bounteous bunch of eBooks for teachers, tutors, anyone who helps a learner learn math. Download our free math & science eBooks as PDF files or Word files at:

- http://i-a-e.org/downloads/cat_view/86-free-ebooks-by-bob-albrecht.html

BBB	This Play Together, Learn Together eBook is intended for teachers, tutors, and others who use games to help learners learn math.	BBB
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Bob & George? Bob is a 90-year-old human (as of February 2020). George is a dragon. Read about Bob & George at **Information Age Education (IAE)**: http://iae-pedia.org/Robert_Albrecht.

Information Age Education (http://iae-pedia.org/Main_Page) publishes many free books, a free blog and the free IAE Newsletter.



DragonFun image by Marcie Hawthorne <http://marciehawthorne.com/>

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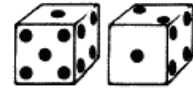
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Number Race 0 to 12 Dice Game #1 | TOC

Play Number Race 0 to 12 Dice Game #1 on five racetracks numbered 1 to 5 down yonder ↓.

Put a racer at zero (0) on each racetrack. We use base-10 cubes or game pawns or small golf tees to represent racers.



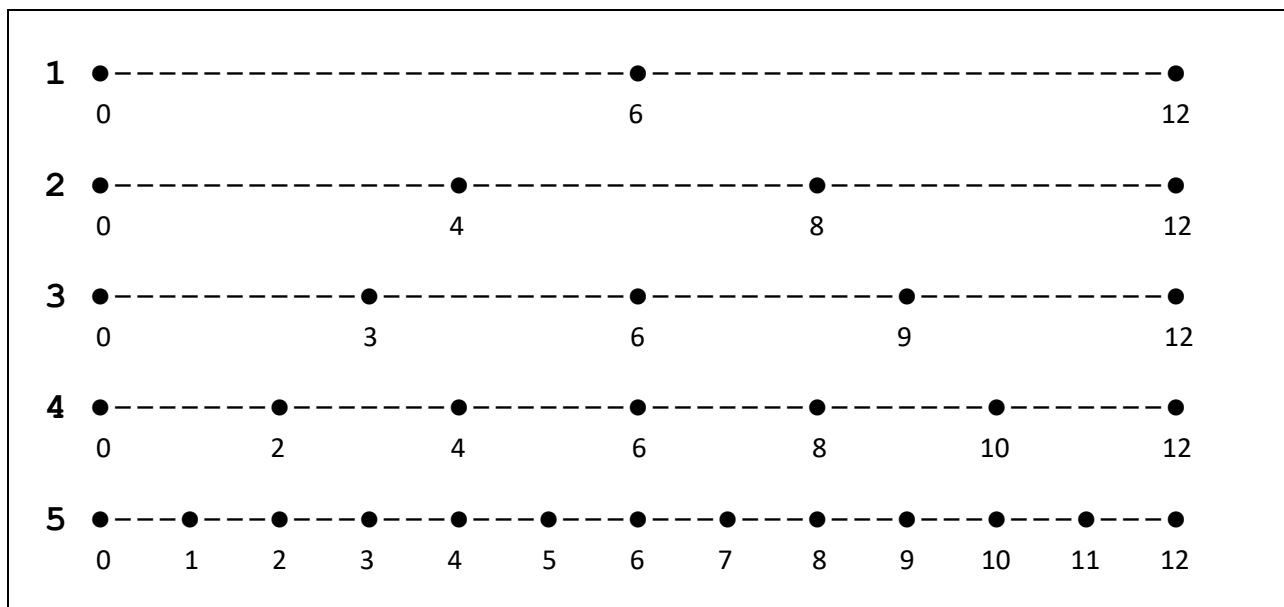
2D6

Roll 2D6 (two 6-faced dice, faces numbered 1 to 6 with dots or numerals).

Use the numbers on the two dice to move two racers on two different racetracks or one racer on one racetrack from one numbered dot (●) to another numbered dot (●). Players can do this in three ways:

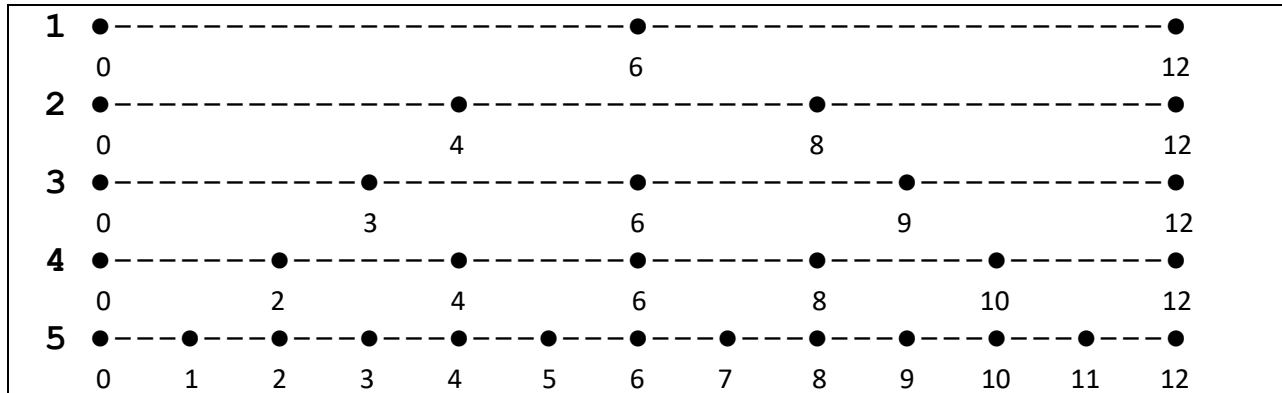
1. Use the two numbers on the two dice to move two racers on two racetracks. If you roll 6 and 1, you can move the racer on Track 1, Track 3, Track 4 or Track 5 a distance 6 and move the racer on Track 5 a distance 1. If you roll 3 and 2, you can move the racer on Track 3 or Track 5 a distance 3 and move the racer on Track 4 or Track 5 a distance 2.
2. Add the numbers on the two dice and use the sum as the distance to move one racer on one racetrack. If you roll 6 and 6 ($6 + 6 = 12$), you can move one racer on any racetrack from 0 to 12. If you roll 3 and 1 ($3 + 1 = 4$), you can move one racer a distance 4 on Track 2 or Track 4 or Track 5.
3. Subtract the numbers on two unequal dice, greater – lesser, and use the difference as the distance to move one racer on one racetrack. If one of your racers is at 11 on Track 5 and you roll 5 and 4, use the difference ($5 - 4 = 1$) to move that racer from 11 to 12. Huzzah!

In each round of a multi-player game, every player gets a turn. The winner is the player who gets all of her or his racers to 12 at the end of a round. Ties are possible.



Number Race 0 to 12 Dice Game #1 Example Games | [TOC](#)

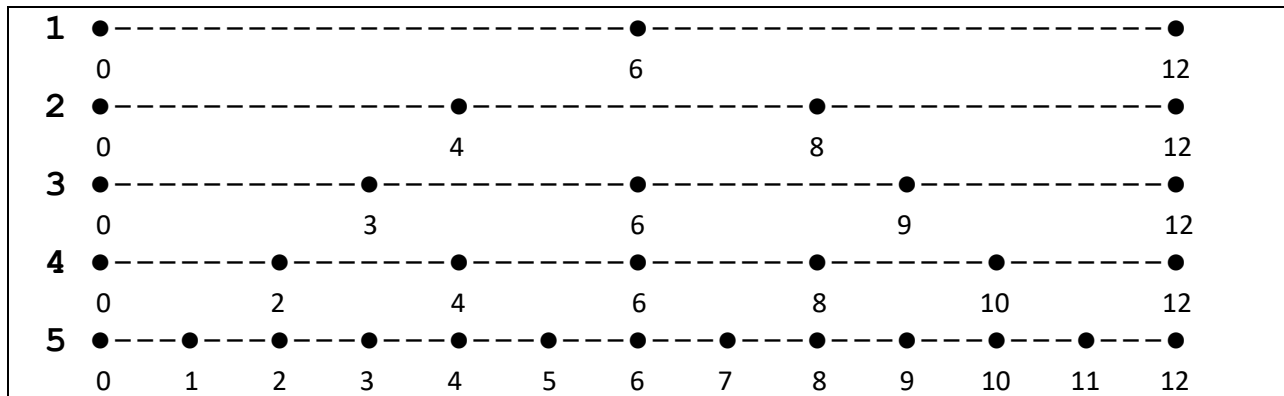
Example games 1 and 2



Number Race 0 to 12 Dice Game #1 – example game 1			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
1 3	T3: $0 + 3 = 3$	T5: $0 + 1 = 1$			3		1
2 5	T4: $0 + 2 = 2$	T5: $1 + 5 = 6$				2	6
2 4	① $2 + 4 = 6$ ② T1: $0 + 6 = 6$		6				
3 5	T3: $3 + 3 = 6$	T5: $6 + 5 = 11$			6		11
4 6	T1: $6 + 6 = 12$	T2: $0 + 4 = 4$	12	4			
5 4	① $5 - 4 = 1$ ② T5: $11 + 1 = 12$						12
3 6	T3: $6 + 6 = 12$	3 no play			12		
2 5	T4: $2 + 2 = 4$	5 no play				4	
4 4	① $4 + 4 = 8$ ② T2: $4 + 8 = 12$			12			
1 5	① $1 + 5 = 6$ ② T4: $4 + 6 = 10$					10	
1 3	① $3 - 1 = 2$ ② T4: $10 + 2 = 12$					12	

Number Race 0 to 12 Dice Game #1 – example game 2			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
2 5	T4: $0 + 2 = 2$	T5: $0 + 5 = 5$				2	5
6 6	① $6 + 6 = 12$ ② T1: $0 + 12 = 12$		12				
1 6	① $1 + 6 = 7$ ② T5: $5 + 7 = 12$						12
1 4	T2: $0 + 4 = 4$	1 no play		4			
3 5	① $3 + 5 = 8$ ② T2: $4 + 8 = 12$			12			
5 6	T3: $0 + 6 = 6$	5 no play			6		
2 3	T3: $6 + 3 = 9$	T4: $2 + 2 = 4$			9	4	
1 1	① $1 + 1 = 2$ ② T4: $4 + 2 = 6$					6	
2 6	T4: $6 + 6 = 12$	2 no play				12	
2 3	T3: $9 + 3 = 12$	2 no play			12		

Example games 3 and 4



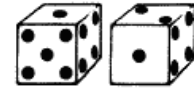
Number Race 0 to 12 Dice Game #1 – example game 3			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
3 5	T3: $0 + 3 = 3$	T5: $0 + 5 = 5$			3		5
1 3	T3: $3 + 3 = 6$	T5: $5 + 1 = 6$			6		6
1 5	① $1 + 5 = 6$ ② T3: $6 + 6 = 12$				12		
4 5	T2: $0 + 4 = 4$	T5: $6 + 5 = 11$		4			11
4 4	① $4 + 4 = 8$ ② T2: $4 + 8 = 12$			12			
4 6	T1: $0 + 6 = 6$	T4: $0 + 4 = 4$	6			4	
3 6	T1: $6 + 6 = 12$	3 no play	12				
1 6	T4: $4 + 6 = 10$	T5: $11 + 1 = 12$				10	12
1 4	no play	no play					
2 4	T4: $10 + 2 = 12$	4 no play				12	

Number Race 0 to 12 Dice Game #1 – example game 4			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
4 6	T1: $0 + 6 = 6$	T2: $0 + 4 = 4$	6	4			
3 6	T1: $6 + 6 = 12$	T3: $0 + 3 = 3$	12		3		
2 4	T2: $4 + 4 = 8$	T4: $0 + 2 = 2$		8		2	
3 4	T2: $8 + 4 = 12$	T3: $3 + 3 = 6$		12	6		
1 2	T4: $2 + 2 = 4$	T5: $0 + 1 = 1$				4	1
2 4	① $2 + 4 = 6$ ② T3: $6 + 6 = 12$				12		
1 3	① $1 + 3 = 4$ ② T4: $4 + 4 = 8$					8	
4 5	T4: $8 + 4 = 12$	T5: $1 + 5 = 6$				12	6
1 2	① $1 + 2 = 3$ ② T5: $6 + 3 = 9$						9
1 4	① $4 - 1 = 3$ ② $9 + 3 = 12$						12

Number Race 0 to 12 Dice Game #2 | [TOC](#)

Play Number Race 0 to 12 Dice Game #2 on five racetracks numbered 1 to 5 down yonder ↓.

Put a racer at zero (0) on each racetrack. We use base-10 cubes or game pawns or small golf tees to represent racers.



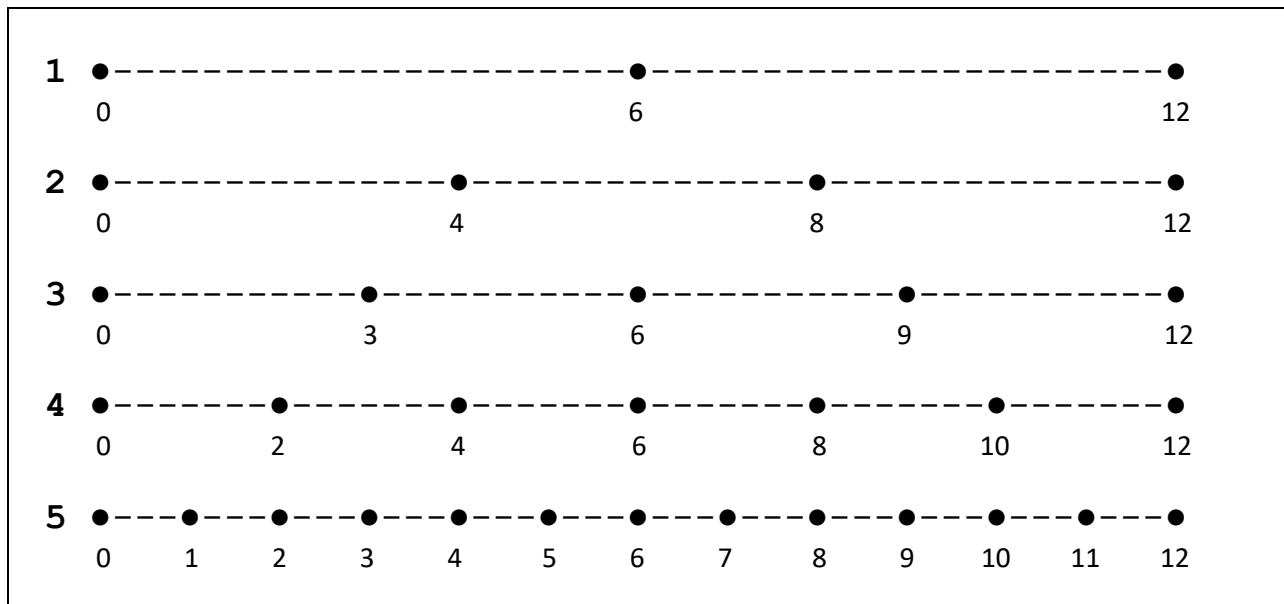
2D6

Roll 2D6 (two 6-faced dice, faces numbered 1 to 6 with dots or numerals).

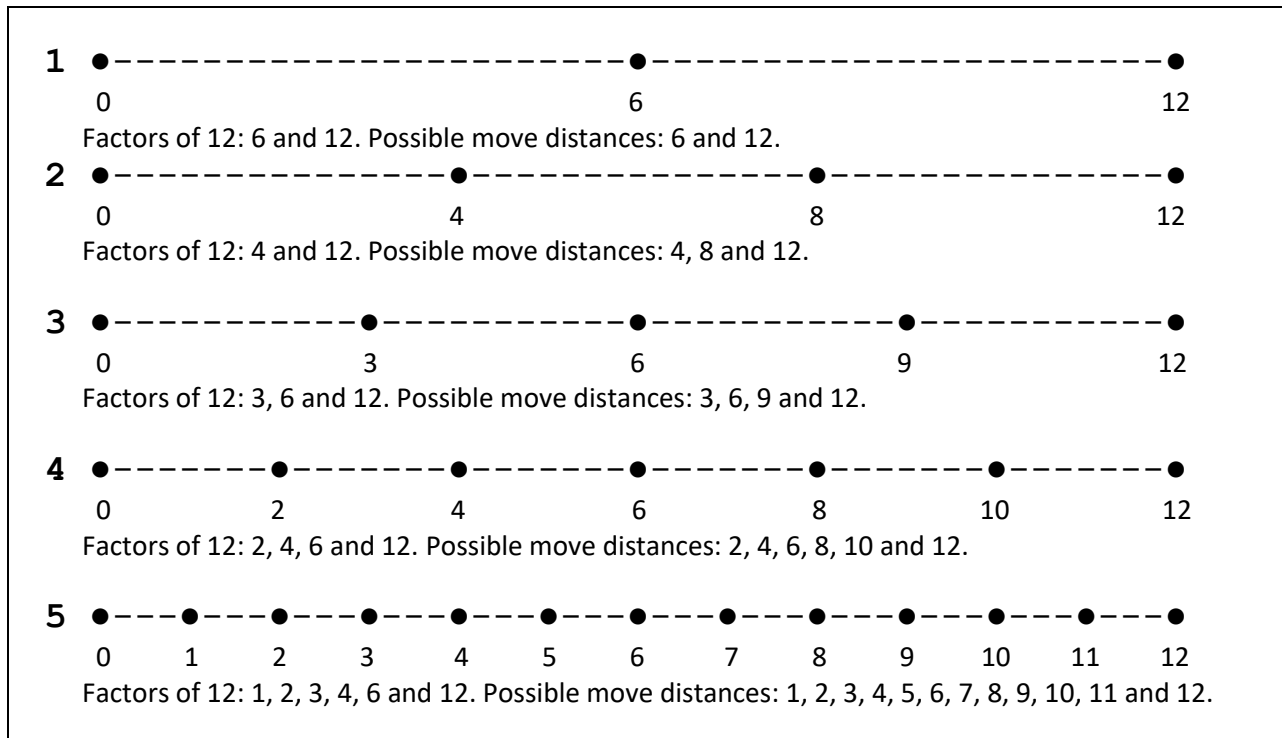
Use the numbers on the two dice to move two racers on two different racetracks or one racer on one racetrack from one numbered dot (●) to another numbered dot (●). Players can do this in four ways:

1. Use the two numbers on the two dice to move two racers on two racetracks.
2. Add the two numbers on the two dice and use the sum as the distance to move one racer on one racetrack.
3. Subtract the two numbers on two unequal dice, greater – lesser, and use the difference to move one racer on one racetrack.
4. Multiply the two dice numbers and use the product to move one racer on one racetrack. Roll 3 and 4 or 2 and 6; use the product ($3 \times 4 = 12$ or $2 \times 6 = 12$) to move one racer on any racetrack from 0 to 12.

In each round of a multi-player game, every player gets a turn. The winner is the player who gets all of her or his racers to 12 at the end of a round. Ties are possible.



Number Race 0 to 12 Dice Game #2 Play Notes | [TOC](#)

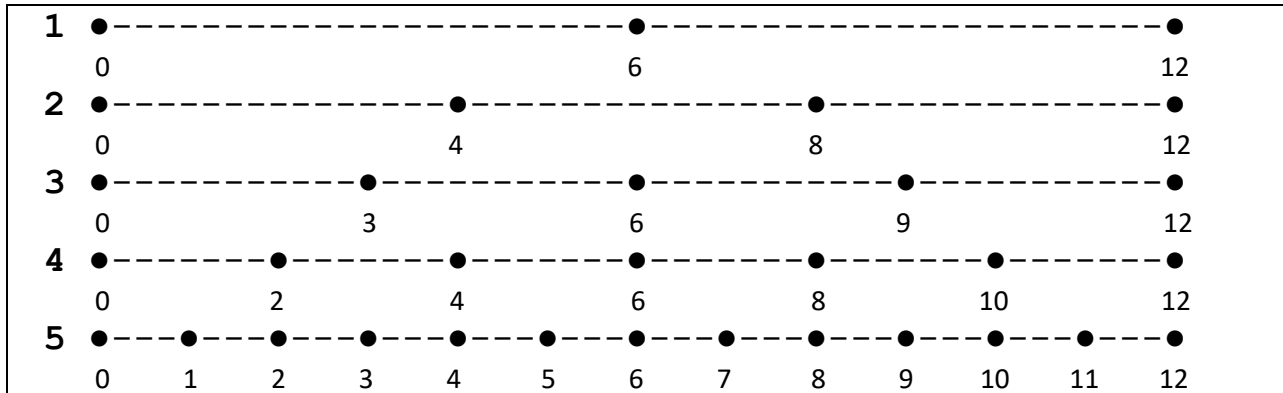


In each racetrack, the minimum distance between numbered dots (●) is a proper factor of 12: 6, 4, 3, 2, or 1. A move on any racetrack is a multiple of the minimum distance on that racetrack. To begin a game, put a racer at numbered dot 0 on each racetrack. We use base-10 cubes or game pawns or small golf tees to represent racers. To move a racer, roll 2D6 (two 6-faced dice, each numbered 1 to 6).

- Use the two outcomes of the two dice to move two racers on two different racetracks. Possible moves: 1, 2, 3, 4, 5 and 6.
- Add the two dice outcomes and use the sum to move one racer on one racetrack. Possible moves: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12.
- Subtract the two dice outcomes, greater – lesser, and use the difference to move one racer on one racetrack. Possible moves: 1, 2, 3, 4 and 5.
- Multiply the two dice outcomes. If a product is less than or equal to 12 (≤ 12), use it to move one racer on one racetrack. Possible moves: 1, 2, 3, 4, 5, 6, 8, 9, 10, 12.
- Track 1 numbered dots: 0, 6 and 12. A possible move is a distance 6 or 12.
- Track 2 numbered dots: 0, 4, 8 and 12. A possible move is a distance 4, 8 or 12
- Track 3 numbered dots: 0, 3, 6, 9 and 12. A possible move is a distance 3, 6, 9 or 12.
- Track 4 numbered dots: 0, 2, 4, 6, 8, 10 and 12. A possible move is a distance 2, 4, 6, 8, 10 or 12.
- Track 5 numbered dots: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12. A possible move is a distance 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12.

Number Race 0 to 12 Dice Game #2 Example Games | [TOC](#)

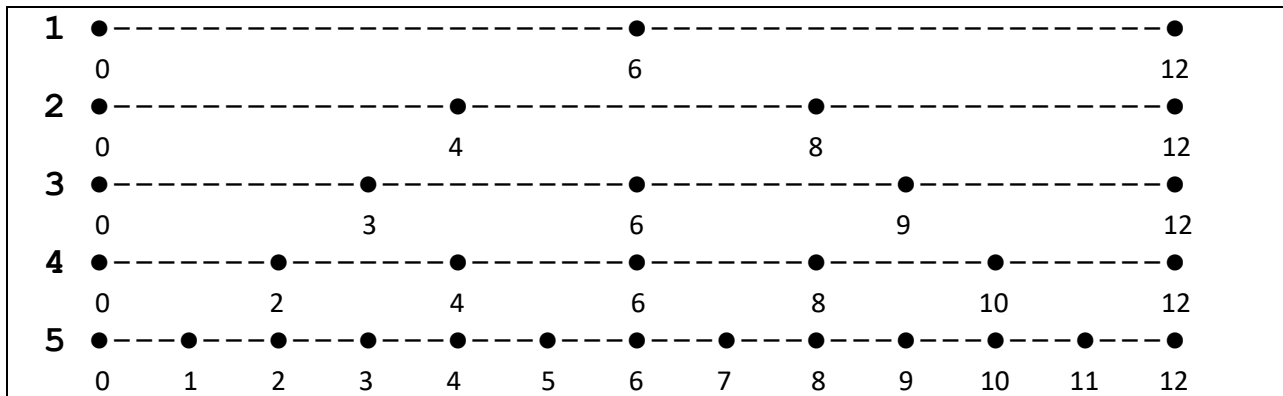
Example games 1 and 2



Number Race 0 to 12 Dice Game #2 – example game 1			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
4 5	T2: 0 + 4 = 4	T5: 0 + 5 = 5		4			5
3 4	① 3 × 4 = 12 ② T1: 0 + 12 = 12		12				
5 6	T3: 0 + 6 = 6	T5: 5 + 5 = 10			6		10
1 4	T2: 4 + 4 = 8	T5: 10 + 1 = 11		8			11
1 2	T4: 0 + 2 = 2	T5: 11 + 1 = 12				2	12
5 6	T3: 6 + 6 = 12	5 no play			12		
2 6	① 2 + 6 = 8 ② T4: 2 + 8 = 10					10	
2 5	T4: 10 + 2 = 12	5 no play				12	
1 5	① 5 - 1 = 4 ② T2: 8 + 4 = 12			12			

Number Race 0 to 12 Dice Game #2 – example game 2			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
1 5	① 1 + 5 = 6 ② T1: 0 + 6 = 6		6				
5 6	T1: 6 + 6 = 12	T5: 0 + 5 = 5	12				5
3 5	T3: 0 + 3 = 3	T5: 5 + 5 = 10			3		10
1 3	T3: 3 + 3 = 6	T5: 10 + 1 = 11			6		11
2 6	① 2 × 6 = 12 ② T2: 0 + 12 = 12			12			
2 3	① 2 × 3 = 6 ② T3: 6 + 6 = 12				12		
5 6	T4: 0 + 6 = 6	5 no play				6	
1 2	① 2 - 1 = 1 ② T5: 11 + 1 = 12						12
4 4	T4: 6 + 4 = 10	4 no play				10	
2 5	T4: 10 + 2 = 12	5 no play				12	

Example games 3 and 4



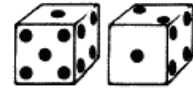
Number Race 0 to 12 Dice Game #2 – example game 3			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
2 3	① $2 \times 3 = 6$ ② T1: $0 + 6 = 6$		6				
1 1	① $1 + 1 = 2$ ② T4: $0 + 2 = 2$					2	
5 6	T1: $6 + 6 = 12$	T5: $0 + 5 = 5$	12				5
2 6	① $2 \times 6 = 12$ ② T2: $0 + 12 = 12$			12			
4 5	T4: $2 + 4 = 6$	T5: $5 + 5 = 10$				6	10
2 5	T5: $10 + 2 = 12$	5 no play					12
5 6	T4: $6 + 6 = 12$	5 no play				12	
2 2	no play	no play					
3 4	① $3 \times 4 = 12$ ② T3: $0 + 12 = 12$				12		

Number Race 0 to 12 Dice Game #2 – example game 4			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
2 5	① $2 \times 5 = 10$ ② T5: $0 + 10 = 10$						10
2 6	① $2 \times 6 = 12$ ② T1: $0 + 12 = 12$		12				
1 2	T5: $10 + 2 = 12$	1 no play					12
2 3	① $2 \times 3 = 6$ ② T3: $0 + 6 = 6$				6		
4 6	T2: $0 + 4 = 4$	T3: $6 + 6 = 12$		4	12		
3 6	T4: $0 + 6 = 6$	3 no play				6	
2 4	① $2 \times 4 = 8$ ② T2: $4 + 8 = 12$			12			
5 5	no play	no play					
2 3	① $2 \times 3 = 6$ ② T4: $6 + 6 = 12$					12	

Number Race 12 to 0 Dice Game | [TOC](#)

Play Number Race 12 to 0 Dice Game on five racetracks numbered 1 to 5 down yonder ↓.

Put a racer at 12 on each racetrack. We use base-10 cubes, game pawns or small golf tees to represent racers. **Object of game: Move the racers from 12 to 0.**



2D6

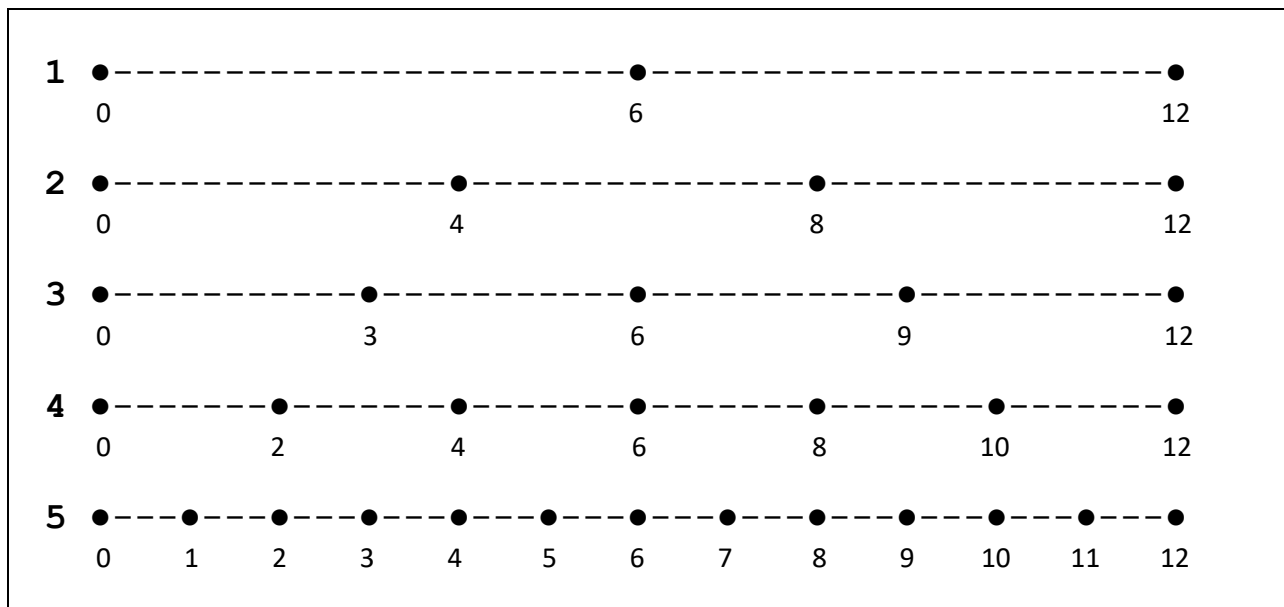
Roll 2D6 (two 6-faced dice, faces numbered 1 to 6 with dots or numerals).

Use the numbers on the two dice to move two racers on two different racetracks or one racer on one racetrack from one numbered dot (●) to another numbered dot (●). Players can do this in four ways:

1. Use the two numbers on the two dice to move two racers on two racetracks.
2. Add the two numbers on the two dice and use the sum as the distance to move one racer on one racetrack.
3. Subtract the two numbers on two unequal dice, greater – lesser, and use the difference to move one racer on one racetrack.
4. Multiply the two dice numbers and use the product to move one racer on one racetrack. Roll 3 and 4 or 2 and 6; use the product ($3 \times 4 = 12$ or $2 \times 6 = 12$) to move one racer on any racetrack from 12 to 0.

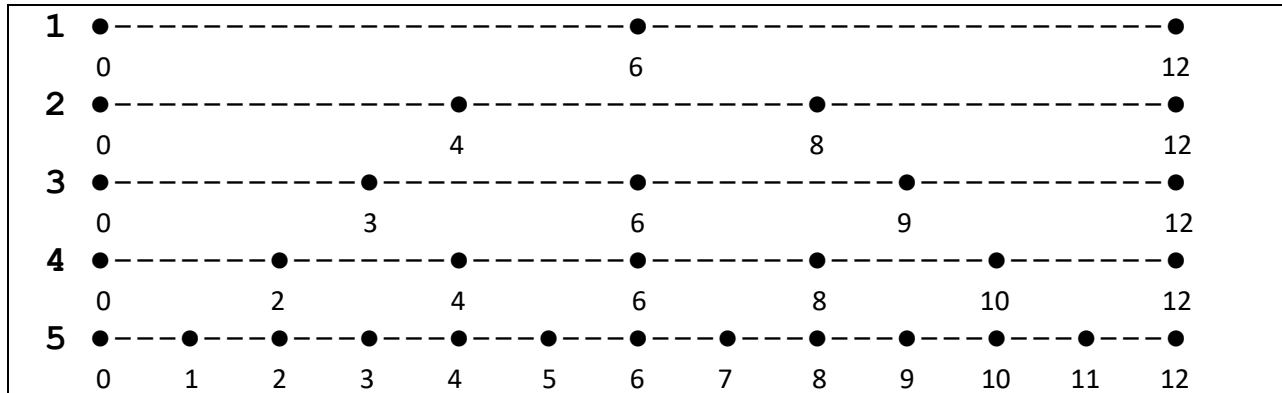
In each round of a multi-player game, every player gets a turn. The winner is the player who gets all of her or his racers to 0 at the end of a round. Ties are possible.

←←← Racers race from 12 on the right end of a racetrack to 0 on the left end. ←←←



Number Race 12 to 0 Dice Game Example Games | [TOC](#)

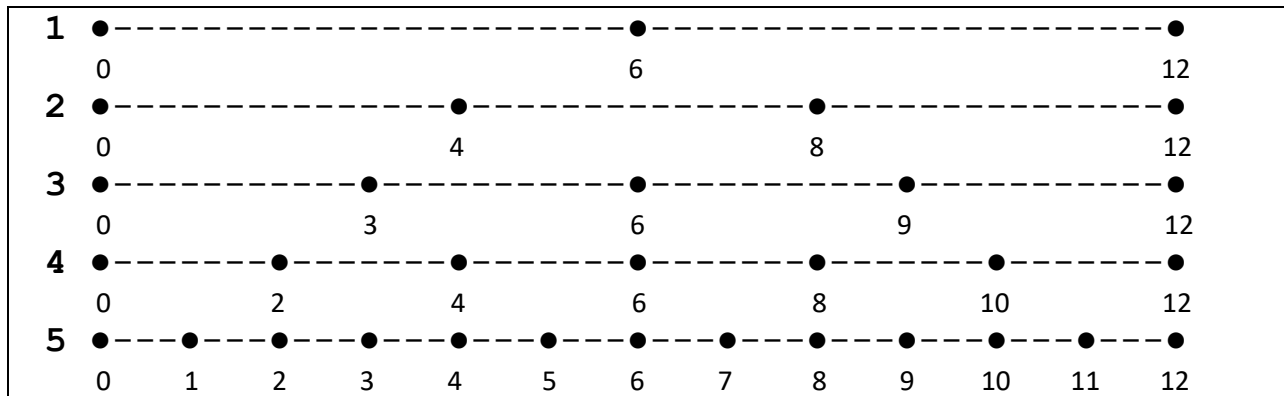
Example games 1 and 2



Number Race 12 to 0 Dice Game – example game 1			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	12	12	12	12	12
3 6	T1: $12 - 6 = 6$	T3: $12 - 3 = 9$	6		9		
1 4	T2: $12 - 4 = 8$	T5: $12 - 1 = 11$		8			11
6 6	① $6 + 6 = 12$ ② T4: $12 - 12 = 0$					0	
1 1	① $1 + 1 = 2$ ② T5: $11 - 2 = 9$						9
4 5	T2: $8 - 4 = 4$	T5: $9 - 5 = 4$		4			4
1 6	T1: $6 - 6 = 0$	T5: $4 - 1 = 3$	0				3
4 5	① $4 + 5 = 9$ ② T3: $9 - 9 = 0$				0		
1 3	T5: $3 - 3 = 0$	1 no play					0
3 3	no play	no play					
1 5	① $5 - 1 = 4$ ② T2: $4 - 4 = 0$			0			

Number Race 12 to 0 Dice Game – example game 2			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	12	12	12	12	12
4 5	T2: $12 - 4 = 8$	T5: $12 - 5 = 7$		8			7
5 5	① $5 + 5 = 10$ ② T4: $12 - 10 = 2$					2	
1 6	① $6 + 1 = 7$ ② T5: $7 - 7 = 0$						0
2 3	① $2 \times 3 = 6$ ② T1: $12 - 6 = 6$		6				
2 2	① $2 + 2 = 4$ ② T2: $8 - 4 = 4$			4			
3 5	① $5 - 3 = 2$ ② T4: $2 - 2 = 0$					0	
2 3	① $2 \times 3 = 6$ ② T1: $6 - 6 = 0$		0				
4 6	T2: $4 - 4 = 0$	T3: $12 - 6 = 6$		0	6		
3 5	T3: $6 - 3 = 3$	5 no play			3		
2 4	no play	no play					
2 6	no play	no play					
2 5	① $5 - 2 = 3$ ② T3: $3 - 3 = 0$				0		

Example games 3 and 4



Number Race 12 to 0 Dice Game – example game 3			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	12	12	12	12	12
1 1	① $1 + 1 = 2$ ② T4: $12 - 2 = 10$						10
6 6	① $6 + 6 = 12$ ② T1: $12 - 12 = 0$		0				
3 5	T3: $12 - 3 = 9$	T5: $12 - 5 = 7$			9		7
2 6	① $2 \times 6 = 12$ ② T2: $12 - 12 = 0$			0			
3 5	T3: $9 - 3 = 6$	T5: $7 - 5 = 2$			6		2
3 4	T3: $6 - 3 = 3$	T4: $10 - 4 = 6$			3	6	
3 3	① $3 + 3 = 6$ ② T4: $6 - 6 = 0$					0	
1 6	T5: $2 - 1 = 1$	6 no play					1
1 4	① $4 - 1 = 3$ ② T3: $3 - 3 = 0$				0		
2 5	no play	no play					
1 3	T5: $1 - 1 = 0$	3 no play					0

Number Race 12 to 0 Dice Game – example game 4			Racer locations				
2D6	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	12	12	12	12	12
1 3	T3: $12 - 3 = 9$	T5: $12 - 1 = 11$			9		11
2 5	① $2 \times 5 = 10$ ② T5: $11 - 10 = 1$						1
3 3	① $3 \times 3 = 9$ ② T3: $9 - 9 = 0$				0		
1 4	T2: $12 - 4 = 8$	T5: $1 - 1 = 0$		8			0
1 5	① $1 + 5 = 6$ ② T1: $12 - 6 = 6$		6				
3 6	T1: $6 - 6 = 0$	3 no play	0				
3 5	① $3 + 5 = 8$ ② T2: $8 - 8 = 0$			0			
4 6	① $4 + 6 = 10$ ② T4: $12 - 10 = 2$					2	
1 4	no play	no play					
2 6	T4: $2 - 2 = 0$	6 no play				0	

Number Race 0 to 18 Dice Game #1 | [TOC](#)

Play Number Race 0 to 18 Dice Game #1 on five racetracks numbered 1 to 5 down yonder ↓.

Put a racer on zero (0) on each racetrack. We use base-10 cubes or game pawns or small golf tees to represent racers.



4DD

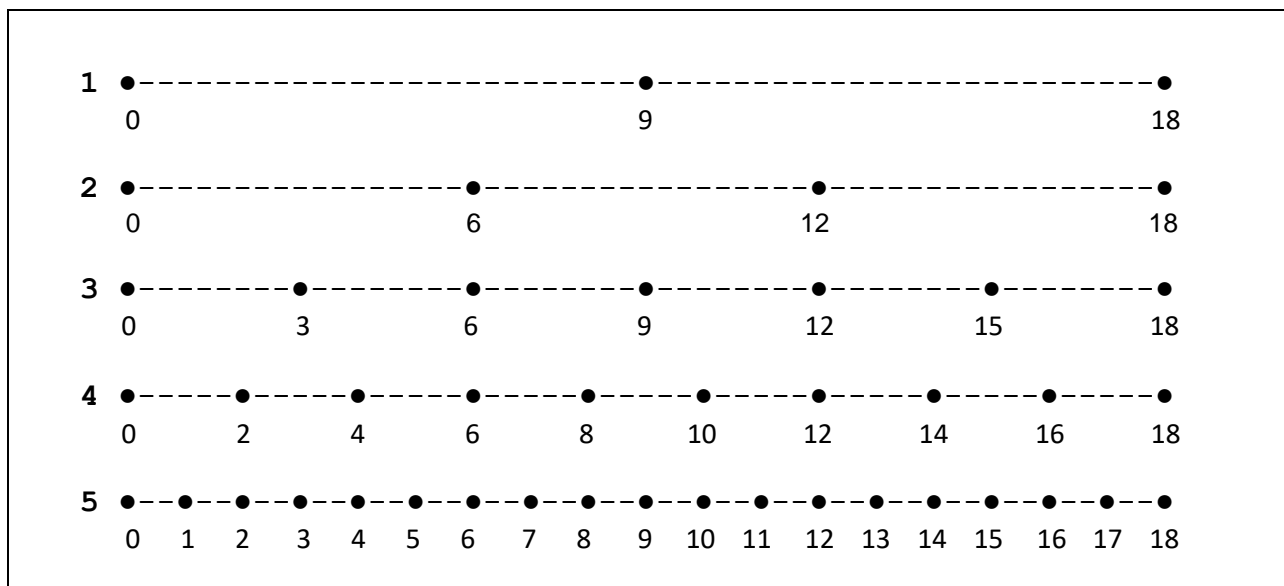
Roll 2DD (two digit dice: 10-faced dice with faces numbered 0 to 9).

Digit dice image → is from Nasco <http://www.enasco.com>.

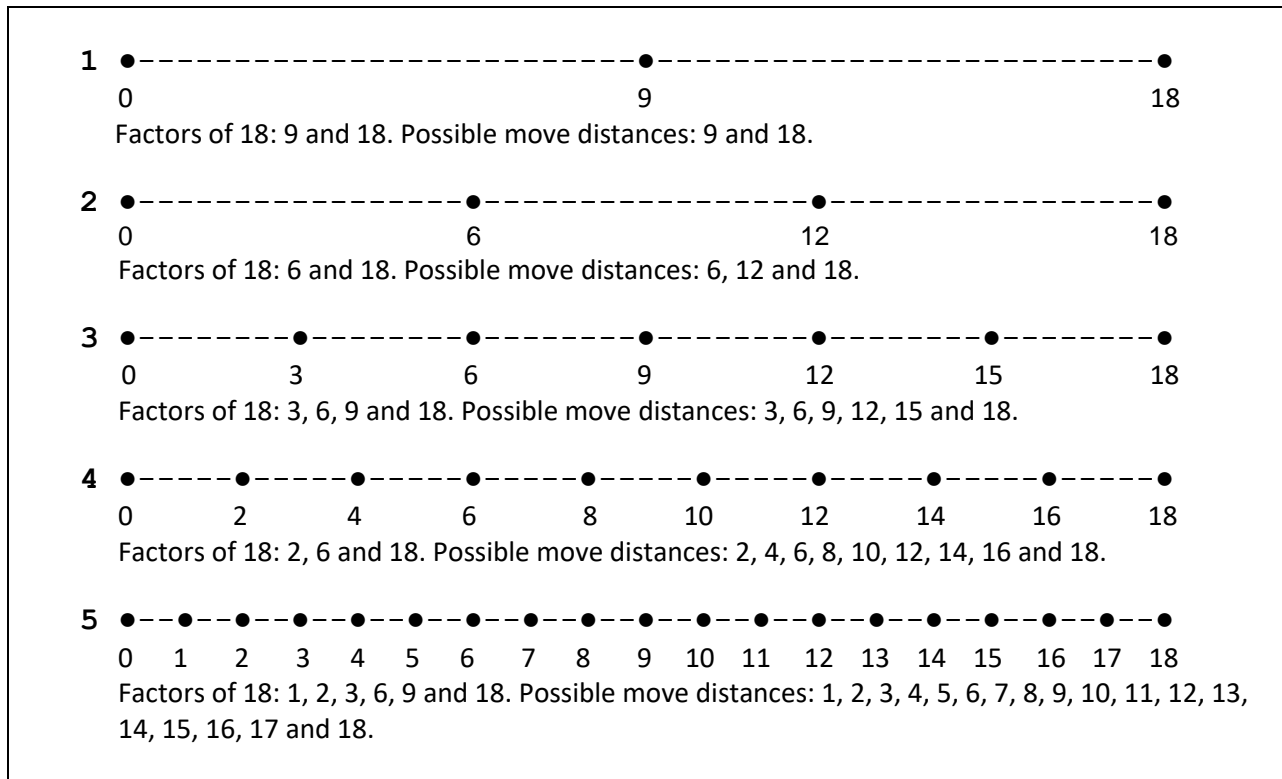
Use the numbers on the dice to move two racers on two different racetracks or one racer on one racetrack from one numbered dot (●) to another numbered dot (●). Players can do this in three ways:

1. Use the two numbers on the two dice to move two racers on two different racetracks.
2. Add the two numbers on the two dice and use the sum as the distance to move one racer on one racetrack.
3. Subtract the two numbers on two unequal dice, greater – lessor, and use the difference as the distance to move one racer on one racetrack. This is handy if one of your racers is at 17 on Track 5 and you roll 5 and 4; use the difference ($5 - 4 = 1$) to move that racer from 17 to 18. Huzzah!

In one round of a multi-player game, every player gets a turn. The winner is the player who gets all of her or his racers to 18 at the end of a round. Ties are possible.



Number Race 0 to 18 Dice Game #1 Play Notes | [TOC](#)

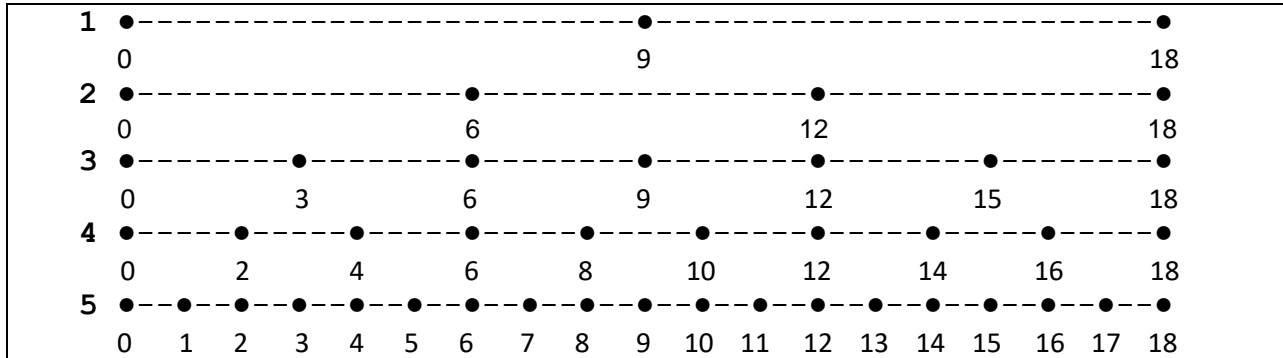


In each racetrack, the minimum distance between numbered dots (●) is a proper factor of 18: 9, 6, 3, 2 or 1. A move on any racetrack is a multiple of the minimum distance on that racetrack. To begin a game, put a racer at numbered dot 0 on each racetrack. We use base-10 cubes or game pawns or small golf tees to represent racers. To move a racer, roll 2DD (two 10-faced dice, each numbered 0 to 9).

- Use the two outcomes of the two dice to move two racers on two different racetracks. Possible moves: 1, 2, 3, 4, 5, 6, 7, 8 and 9.
- Add the two dice outcomes and use the sum to move one racer on one racetrack. Possible moves: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18.
- Subtract the two dice outcomes (greater – lesser) and use the difference to move one racer on one racetrack. Possible moves: 1, 2, 3, 4, 5, 6, 7, 8 and 9.
- Track 1 numbered dots: 0, 9 and 18. A possible move is a distance 9 or 18.
- Track 2 numbered dots: 0, 6, 12 and 18. A possible move is a distance, 6, 12 or 18.
- Track 3 numbered dots: 0, 3, 6, 9, 12, 15 and 18. A possible move is a distance 3, 6, 9, 12, 15 or 18.
- Track 4 numbered dots: 0, 2, 4, 6, 8, 10, 12, 14, 16 and 18. A possible move is a distance 2, 4, 6, 8, 10, 12, 14, 16 or 18.
- Track 5 numbered dots: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18. A possible move is a distance 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 or 18.

Number Race 0 to 18 Dice Game #1 Example Games | [TOC](#)

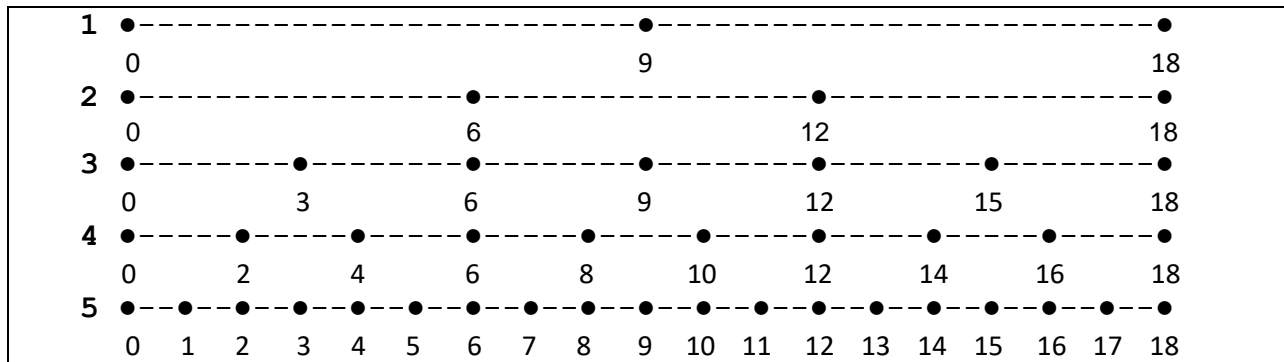
Example Game 1



Number Race 0 to 18 Dice Game #1 – example game 1			Racer locations				
2DD	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2					
0 9	T1: 0 + 9 = 9	0 no play	9				
4 6	T2: 0 + 6 = 6	T4: 0 + 4 = 4		6		4	
2 3	T3: 0 + 3 = 3	T4: 4 + 2 = 6			3	6	
3 6	① 3 + 6 = 9 ② T1: 9 + 9 = 18		18				
2 7	T4: 6 + 2 = 8	T5: 0 + 7 = 7				8	7
2 6	T2: 6 + 6 = 12	T4: 8 + 2 = 10		12		10	
2 5	T4: 10 + 2 = 12	T5: 7 + 5 = 12					12
3 3	① 3 + 3 = 6 T2: 12 + 6 = 18			18			
0 8	T4: 10 + 8 = 18	0 no play				18	
3 7	T3: 3 + 3 = 6	7 no play			6		
1 6	T5: 6 + 6 = 12	T5: 12 + 1 = 13			12		13
2 8	① 8 - 2 = 6 ② T3: 12 + 6 = 18				18		
8 8	no play	no play					
5 9	T5: 13 + 5 = 18	9 no play					18

Amble on down ↓ for more example games.

Example Games 2 and 3



Number Race 0 to 18 Dice Game #1 – example game 2			Racer locations				
2DD	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
1 5	① 1 + 5 = 6 ② T2: 0 + 6 = 6			6			
6 7	T2: 6 + 6 = 12	T5: 0 + 7 = 7		12			7
1 5	① 1 + 5 = 6 ② T2: 12 + 6 = 18			18			
3 9	T1: 0 + 9 = 9	T5: 7 + 3 = 10	9				10
0 8	T5: 10 + 8 = 18	0 no play					18
9 9	① 9 + 9 = 18 ② T3: 0 + 18 = 18				18		
4 7	T4: 0 + 4	7 no play				4	
0 0	no play	no play					
3 5	① 3 + 5 = 8 ② T4: 4 + 8 = 12					12	
4 5	① 4 + 5 = 9 ② T1: 9 + 9 = 18		18				
7 7	no play	no play					
2 8	① 8 - 2 = 6 ② T4: 12 + 6 = 18					18	

Number Race 0 to 18 Dice Game #1 – example game 3			Racer locations				
2DD	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
8 9	① 8 + 9 = 17 ② T5: 0 + 17 = 17						17
0 6	T2: 0 + 6 = 6	0 no play		6			
4 4	① 4 + 4 = 8 ② T4: 0 + 8 = 8					8	
1 8	① 1 + 8 = 9 ② T1: 0 + 9 = 9		9				
5 7	① 5 + 7 = 12 ② T2: 6 + 12 = 18			18			
2 3	① 3 - 2 = 1 ② T5: 17 + 1 = 18						18
1 9	T1: 9 + 9 = 18	1 no play	18				
4 6	① 4 + 6 = 10 ② T4: 8 + 10 = 18					18	
0 5	no play	no play					
7 8	① 7 + 8 = 15 ② T3: 0 + 15 = 15				15		
5 9	no play	no play					
4 7	① 7 - 4 = 3 ② T3: 15 + 3 = 18				18		

Number Race 0 to 18 Dice Game #2 | [TOC](#)

Play Number Race 0 to 18 Dice Game #2 on five racetracks numbered 1 to 5 down yonder ↓.

Put a racer on zero (0) on each racetrack. We use base-10 cubes or game pawns or small golf tees to represent racers.



4DD

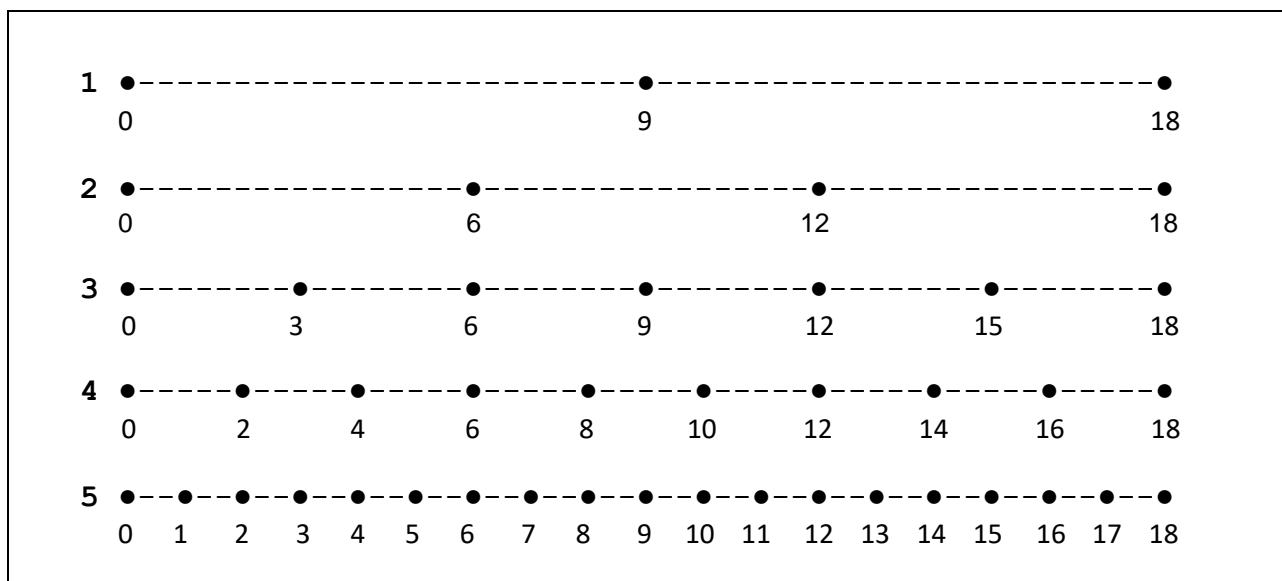
Roll 2DD (two digit dice: 10-faced dice with faces numbered 0 to 9).

Digit dice image over yonder → is from Nasco <http://www.enasco.com>.

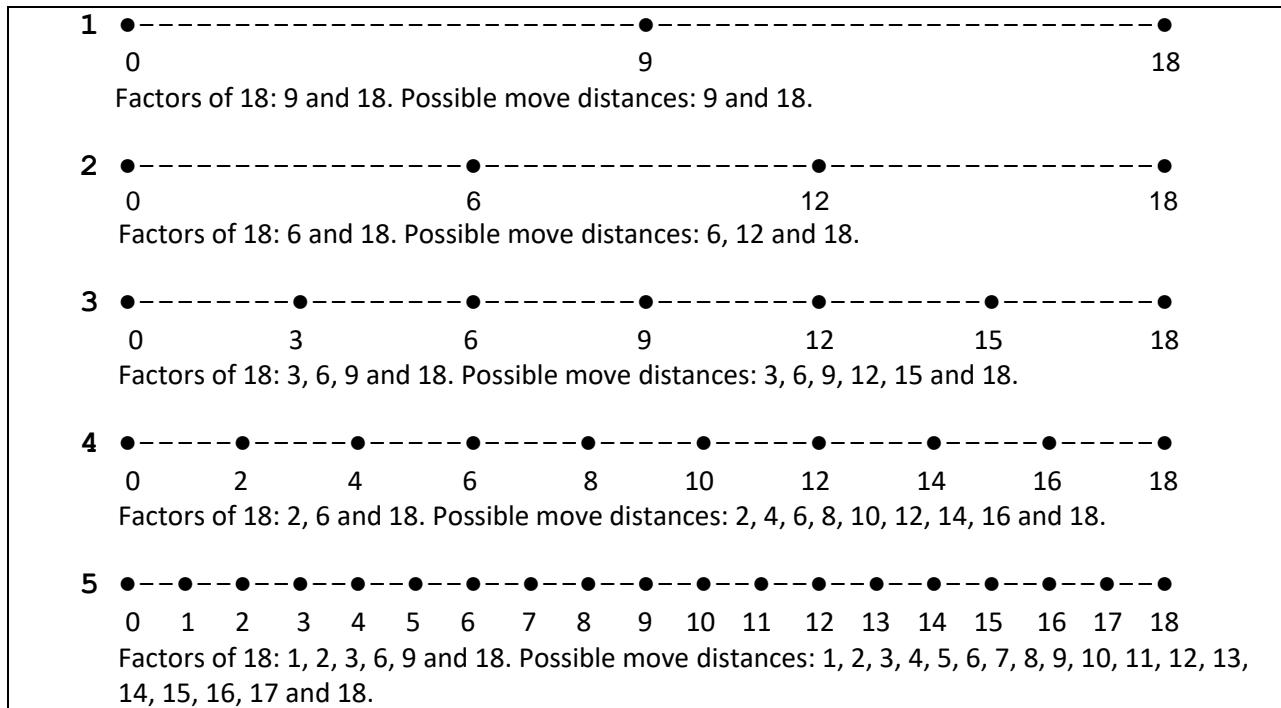
Use the numbers on the two dice to move two racers on two different racetracks or one racer on one racetrack from one numbered dot (●) to another numbered dot (●). Players can do this in four ways:

1. Use the two numbers on the two dice to move two racers on two different racetracks.
2. Add the two numbers on the two dice and use the sum as the distance to move one racer on one racetrack.
3. Subtract the two numbers on two unequal dice, greater – lesser, and use the difference as the distance to move one racer on one racetrack.
4. Multiply the two dice numbers and use the product to move one racer on one racetrack. If you roll 3 and 6 or 2 and 9, use the product ($3 \times 6 = 18$ or $2 \times 9 = 18$) to move one racer on one racetrack from 0 to 18.

In each round of a multi-player game, every player gets a turn. The winner is the player who gets all of her or his racers to 18 at the end of a round. Ties are possible.



Number Race 0 to 18 Dice Game #2 Play Notes | [TOC](#)

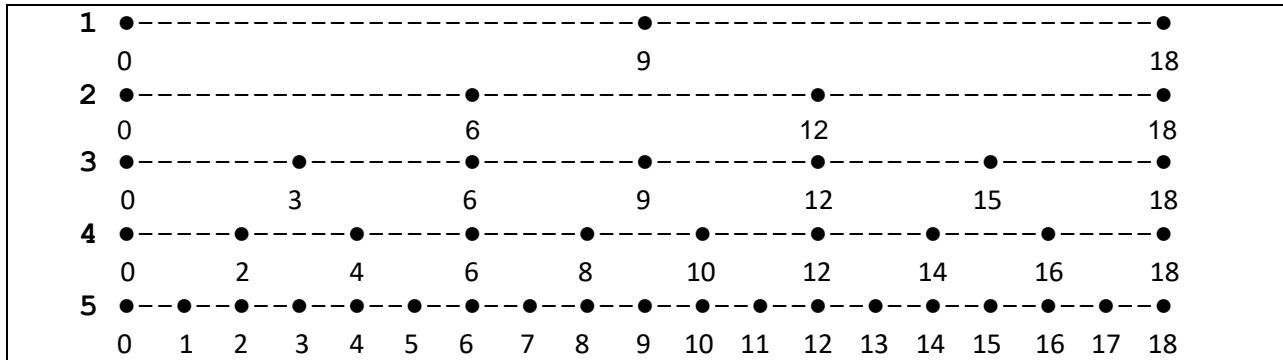


In each racetrack, the minimum distance between numbered dots (●) is a proper factor of 18: 9, 6, 3, 2 or 1. A move on any racetrack is a multiple of the minimum distance on that racetrack. To begin a game, put a racer at numbered dot 0 on each racetrack. We use base-10 cubes or game pawns or small golf tees to represent racers. To move a racer, roll 2DD (two 10-faced dice, each numbered 0 to 9).

- Use the two outcomes of the two dice to move two racers on two different racetracks. Possible moves: 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9.
- Add the two dice outcomes and use the sum to move one racer on one racetrack. Possible moves: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18.
- Subtract two unequal dice outcomes, greater – lesser, and use the difference to move one racer on one racetrack. Possible moves: 1, 2, 3, 4, 5, 6, 7, 8 and 9.
- Multiply the two dice outcomes. If a product is not 0 and is less than or equal to 18, use it to move one racer on one racetrack. Possible moves: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16 and 18.
- Track 1 numbered dots: 0, 9 and 18. A possible move is a distance 9 or 18.
- Track 2 numbered dots: 0, 6, 12 and 18. A possible move is a distance, 6, 12 or 18.
- Track 3 numbered dots: 0, 3, 6, 9, 12, 15 and 18. A possible move is a distance 3, 6, 9, 12, 15 or 18.
- Track 4 numbered dots: 0, 2, 4, 6, 8, 10, 12, 14, 16 and 18. A possible move is a distance 2, 4, 6, 8, 10, 12, 14, 16 or 18.
- Track 5 numbered dots: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18. A possible move is a distance 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 or 18.

Number Race 0 to 18 Dice Game #2 Example Games | [TOC](#)

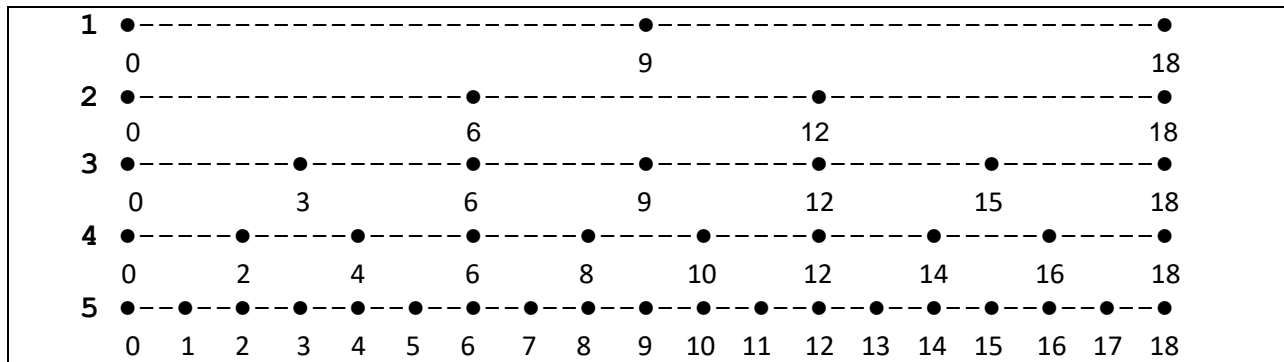
Example Game 1



Number Race 0 to 18 Dice Game #2 – example game 1			Racer locations				
2DD	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
6 7	T2: 0 + 6 = 6	T5: 0 + 7 = 7		6			7
2 5	① 2 × 5 = 10 ② T5: 7 + 10 = 17						17
2 3	① 2 × 3 = 6 ② T2: 6 + 6 = 12			12			
1 2	T4: 0 + 2 = 2	T5: 17 + 1 = 18				2	18
0 8	T4: 2 + 8 = 10	0 no play				10	
2 6	T2: 12 + 6 = 18	T4: 10 + 2 = 12		18		12	
4 5	① 4 + 5 = 9 ② Ti: 0 + 9 = 9		9				
4 4	T4: 12 + 4 = 16	4 no play				16	
2 8	T4: 16 + 2 = 18	8 no play				18	
0 7	no play	no play					
6 6	① 6 + 6 = 12 ② T3: 0 + 12 = 12				12		
1 9	T1: 9 + 9 = 18	1 no play	18				
2 4	① 2 + 4 = 6 ② T3: 12 + 6 = 18				18		

Saunter on down ↓ for more example games.

Example Games 2 and 3



Number Race 0 to 18 Dice Game #2 – example game 2			Racer locations				
2DD	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
3 5	① $3 \times 5 = 15$ ② T3: $0 + 15 = 15$				15		
7 8	T4: $0 + 8 = 8$	T5: $0 + 7 = 7$				8	7
2 3	T3: $15 + 3 = 18$	T4: $8 + 2 = 10$			18	10	
3 7	① $3 + 7 = 10$ ② T5: $7 + 10 = 17$						17
2 9	① $2 \times 9 = 18$ ② T1: $0 + 18 = 18$		18				
6 9	T2: $0 + 6 = 6$	9 no play		6			
6 8	T2: $6 + 6 = 12$	T4: $10 + 8 = 18$		12		18	
0 6	T2: $12 + 6 = 18$	0 no play		18			
1 5	T5: $17 + 1 = 18$	5 no play					18

Number Race 0 to 18 Dice Game #2 – example game 3			Racer locations				
2DD	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	0	0	0	0	0
3 3	① $3 \times 3 = 9$ ② T1: $0 + 9 = 9$		9				
0 7	T5: $0 + 7 = 7$	0 no play					7
1 5	① $1 + 5 = 6$ ② T2: $0 + 6 = 6$			6			
2 3	① $2 \times 3 = 6$ ② T2: $6 + 6 = 12$			12			
6 8	T2: $12 + 6 = 18$	T4: $0 + 8 = 8$		18		8	
1 5	① $1 + 5 = 6$ ② T3: $0 + 6 = 6$				6		
1 6	T3: $6 + 6 = 12$	T5: $7 + 1 = 8$			12		8
6 8	T3: $12 + 6 = 18$	T4: $8 + 8 = 16$			18	16	
0 0	no play	no play					
1 8	① $1 + 8 = 9$ ② T1: $9 + 9 = 18$		18				
7 9	① $9 - 7 = 2$ ② T4: $16 + 2 = 18$					18	
6 6	T5: $8 + 6 = 14$	6 no play					14
7 7	no play	no play					
0 4	T5: $14 + 4 = 18$	0 no play					18

Number Race 18 to 0 Dice Game | [TOC](#)

Play Number Race 18 to 0 Dice Game on five racetracks numbered 1 to 5 down yonder ↓.

Put a racer on 18 on each racetrack. We use base-10 cubes or game pawns or small golf tees to represent racers.



4DD

Roll 2DD (two digit dice: 10-faced dice with faces numbered 0 to 9).

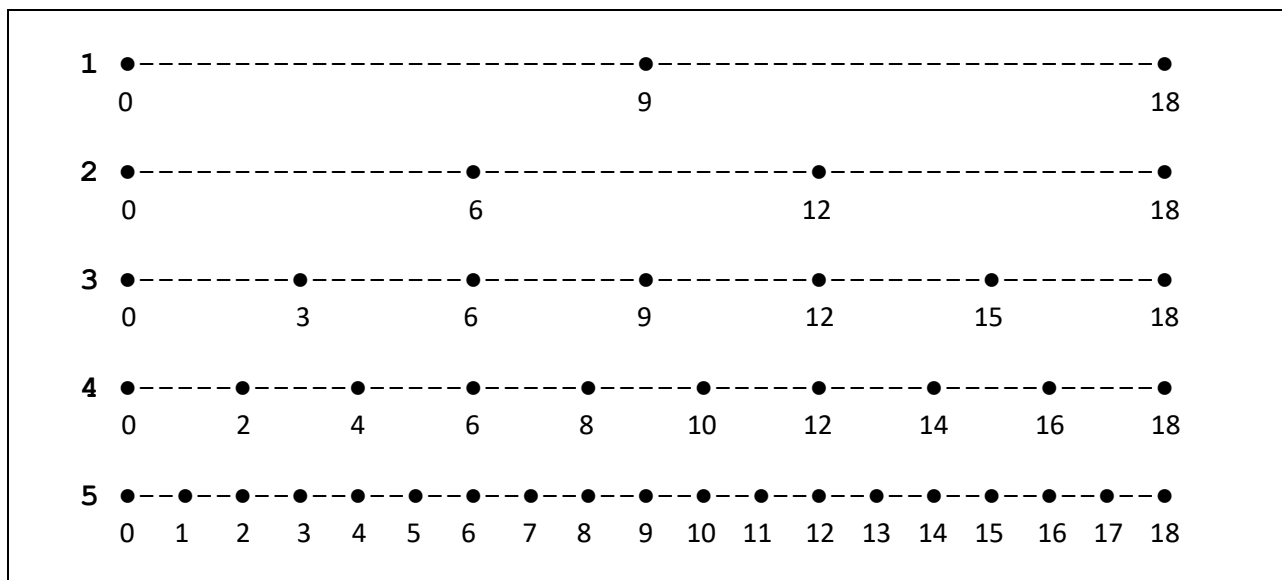
Digit dice image over yonder → is from Nasco <http://www.enasco.com>.

Use the two numbers on the two dice to move two racers on two different racetracks or one racer on one racetrack from one numbered dot (●) to another numbered dot (●). Players can do this in 4 ways:

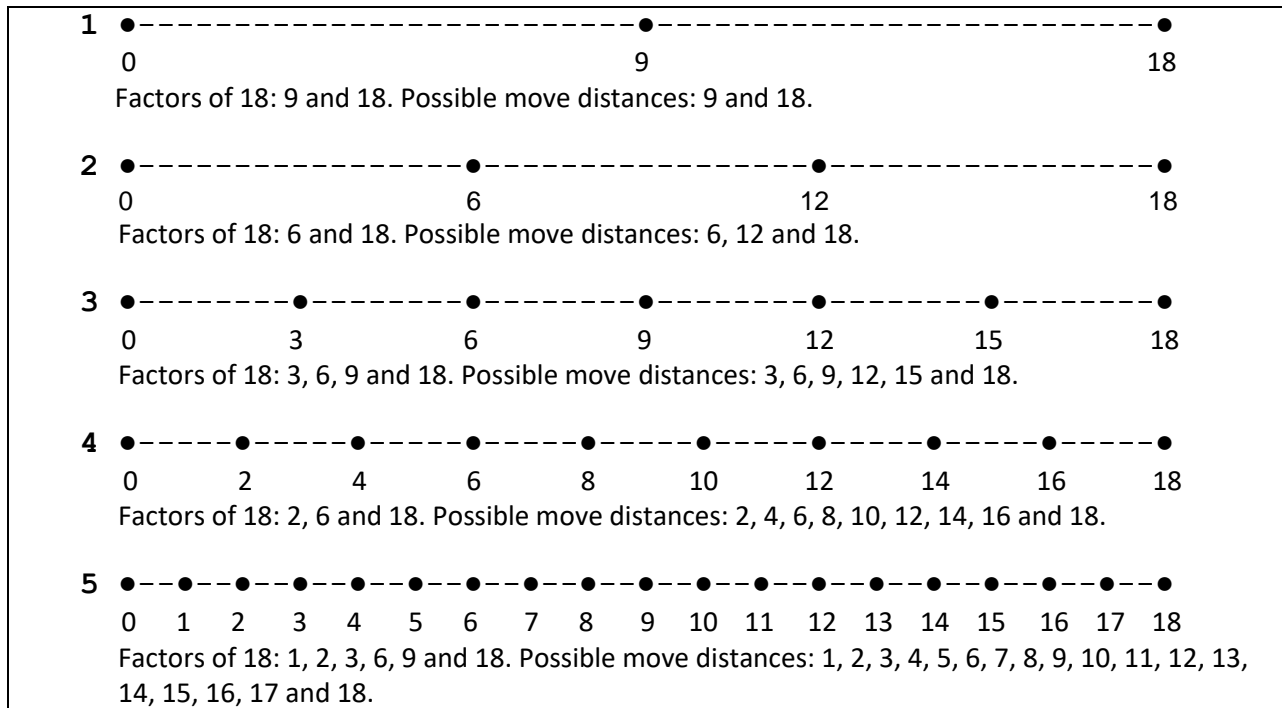
1. Use the two numbers on the two dice to move two racers on two different racetracks.
2. Add the two numbers on the two dice and use the sum as the distance to move one racer on one racetrack.
3. Subtract the two numbers on two unequal dice, greater – lesser, and use the difference as the distance to move one racer on one racetrack.
4. Multiply the two dice numbers. If the product is a possible move distance (≤ 18), use it to move one racer on one racetrack.

In each round of a multi-player game, every player gets a turn. The winner is the player who gets all of her or his racers to 0 at the end of a round. Ties are possible.

←←← Racers race from 18 at the right end of a racetrack to 0 at the left end. ←←←



Number Race 18 to 0 Dice Game Play Notes | [TOC](#)

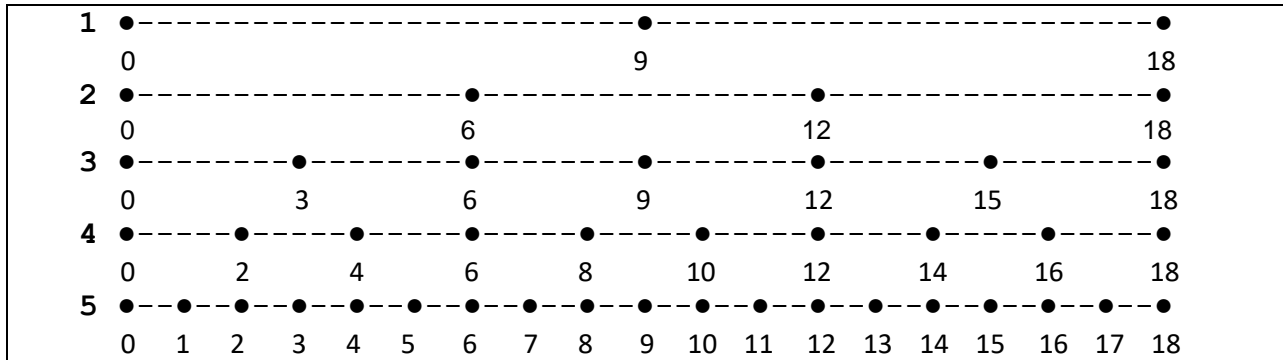


In each racetrack, the minimum distance between numbered dots (●) is a proper factor of 18: 9, 6, 3, 2 or 1. A move on any racetrack is a multiple of the minimum distance on that racetrack. To begin a game, put a racer at numbered dot 18 on each racetrack. We use base-10 cubes or game pawns or small golf tees to represent racers. To move a racer, roll 2DD (two 10-faced dice, each numbered 0 to 9).

- Use the two outcomes of the two dice to move two racers on two different racetracks. Possible moves: 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9.
- Add the two dice outcomes and use the sum to move one racer on one racetrack. Possible moves: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18.
- Subtract the two dice outcomes, greater – lesser, and use the difference to move one racer on one racetrack. Possible moves: 1, 2, 3, 4, 5, 6, 7, 8 and 9.
- Multiply the two dice outcomes. If a product is not 0 and is a possible move distance less than or equal to 18, use it to move one racer on one racetrack. Possible moves: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16 and 18.
- Track 1 numbered dots: 0, 9 and 18. Possible moves: 9 or 18.
- Track 2 numbered dots: 0, 6, 12 and 18. Possible moves: 6, 12 or 18.
- Track 3 numbered dots: 0, 3, 6, 9, 12, 15 and 18. Possible moves: 3, 6, 9, 12, 15 or 18.
- Track 4 numbered dots: 0, 2, 4, 6, 8, 10, 12, 14, 16 and 18. Possible move: 2, 4, 6, 8, 10, 12, 14, 16 or 18.
- Track 5 numbered dots: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18. Possible moves: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 or 18.

Number Race 18 to 0 Dice Game Example Games | [TOC](#)

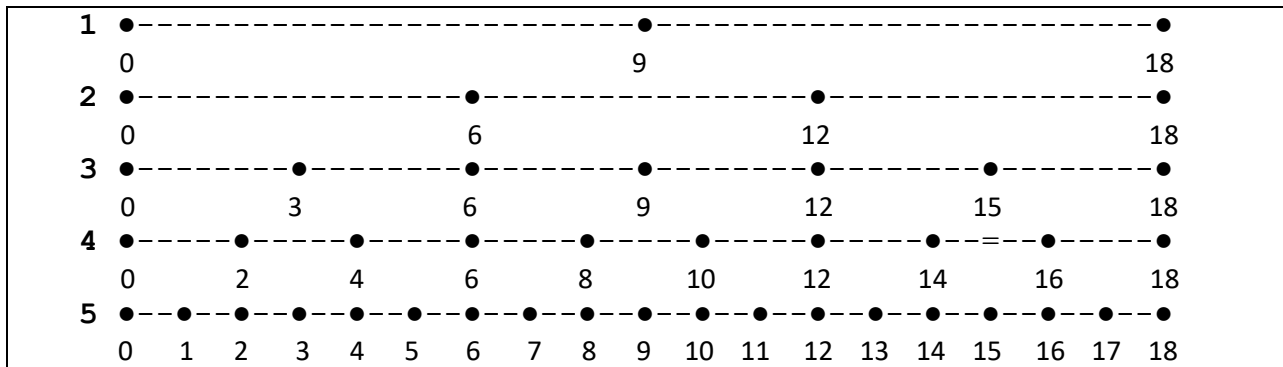
Example game 1



Number Race 18 to 0 Dice Game – example game 1			Racer locations				
2DD	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	18	18	18	18	18
3 7	T3: $18 - 3 = 15$	T5: $18 - 7 = 11$			15		11
8 8	① $8 + 8 = 16$ ② T4: $18 - 16 = 2$					2	
2 6	① $2 \times 6 = 12$ ② T2: $18 - 12 = 6$			6			
5 8	T5: $11 - 8 = 3$	5 no play					3
3 5	① $3 \times 5 = 15$ ② T3: $15 - 15 = 0$				0		
4 6	T2: $6 - 6 = 0$	4 no play		0			
2 8	T4: $2 - 2 = 0$	8 no play				0	
0 6	no play	no play					
9 9	① $9 + 9 = 18$ ② T1: $18 - 18 = 0$		0				
5 5	no play	no play					
5 9	no play	no play					
4 7	① $7 - 4 = 3$ ② T5: $3 - 3 = 0$						0

Meander on down ↓ for more example games.

Example Games 2 and 3



Number Race 18 to 0 Dice Game – example game 2			Racer locations				
2DD	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	18	18	18	18	18
1 8	① 1 + 8 = 9 ② T1: 18 - 9 = 9		9				
0 5	T5: 18 - 5 = 13	0 no play					13
5 5	① 5 + 5 = 10 ② T5: 13 - 10 = 3						3
3 6	① 3 × 6 = 18 ② T2: 18 - 18 = 0			0			
0 9	T1: 9 - 9 = 0	0 no play	0				
2 8	① 2 × 8 = 16 ② T4: 18 - 16 = 2					2	
6 8	T3: 18 - 6 = 12	8 no play			12		
3 6	T3: 12 - 6 = 6	T5: 3 - 3 = 0			6		0
1 1	① 1 + 1 = 2 ② T4: 2 - 2 = 0					0	
4 5	no play	no play					
6 8	T3: 6 - 6 = 0	8 no play			0		

Number Race 18 to 0 Dice Game – example game 3			Racer locations				
2DD	Move 2 racers on 2 racetracks or 1 racer on 1 racetrack		T1	T2	T3	T4	T5
Lo Hi	Racer #1	Racer #2	18	18	18	18	18
2 7	① 2 × 7 = 14 ② T4: 18 - 14 = 4					4	
6 7	T2: 18 - 6 = 12	T5: 18 - 7 = 11		12			11
0 1	T5: 11 - 1 = 10	0 no play					10
4 9	T1: 18 - 9 = 9	T4: 4 - 4 = 0	9			0	
2 3	① 2 × 3 = 6 ② T2: 12 - 6 = 6			6			
4 6	T2: 6 - 6 = 0	T5: 10 - 4 = 6		0			6
4 9	T1: 9 - 9 = 0	T5: 6 - 4 = 2	0				2
3 5	① 3 × 5 = 15 ② T3: 18 - 15 = 3				3		
2 8	T5: 2 - 2 = 0	8 no play					0
1 8	no play	no play					
4 4	no play	no play					
2 5	① 5 - 2 = 3 ② T3: 3 - 3 = 0				0		

Fraction Race 0 to 1 Dice Game | [TOC](#)

Roll 4D6 (four 6-faced dice with faces numbered 1 to 6) and use the dice outcomes to make two fractions that can be used to move racers from 0 to 1 on five Fraction Tracks.

- ☞ The denominator of the fraction can be 2, 3, 4, 5, or 6.
- ☞ The numerator of the fraction is less than the denominator.













Possible fractions:

- 1/2
- 1/3, 2/3
- 1/4, 2/4, 3/4
- 1/5, 2/5, 3/5, 4/5
- 1/6, 2/6, 3/6, 4/6, 5/6



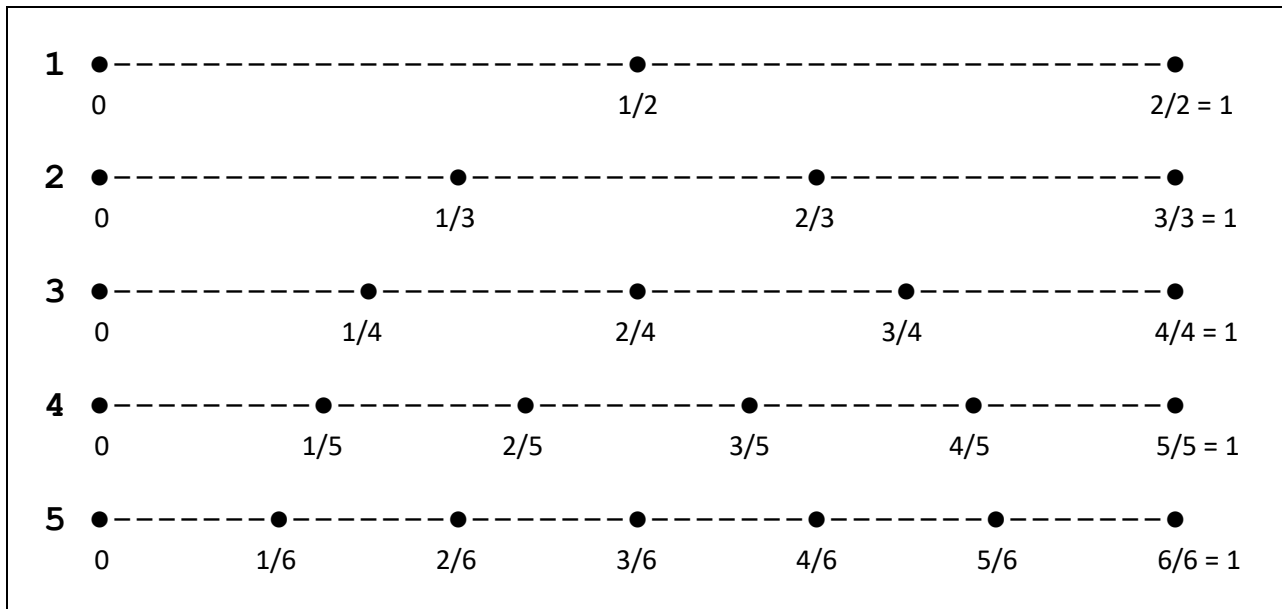
4D6

The 4D6 picture over yonder → is from Nasco Education.
Go to <https://www.enasco.com/> and search for dice.

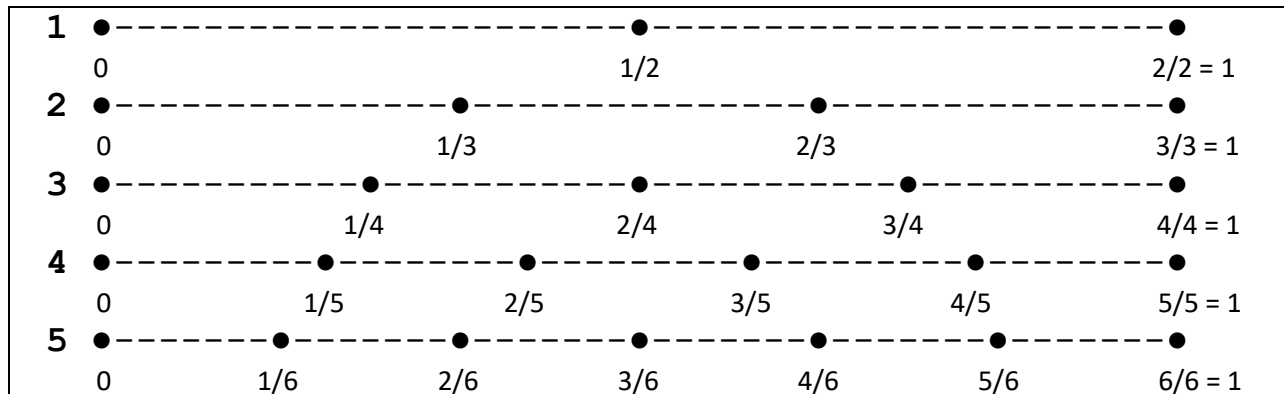
2D6 Fractions: Denominator = 2, 3, 4, 5 or 6. Numerator < denominator						
						
		1/2	1/3	1/4	1/5	1/6
	1/2		2/3	2/4	2/5	2/6
	1/3	2/3		3/4	3/5	3/6
	1/4	2/4	3/4		4/5	4/6
	1/5	2/5	3/5	4/5		5/6
	1/6	2/6	3/6	4/6	5/6	

Roll 4D6 (four 6-faced dice with faces numbered 1 to 6) and make two fractions. Use the two fractions to move two racers on two different fraction tracks or one racer on one fraction track from one numbered dot (●) to another numbered dot (●). Players can do this in three ways:

1. Use the two fractions to move two racers on two different fraction racks.
2. Add the two fractions and use the sum as the distance to move one racer on one fraction track.
3. Subtract two unequal fractions, greater – lesser, and use the difference as the distance to move one racer on one fraction track.



Fraction Race 0 to 1 Dice Game Play Notes | [TOC](#)



In each fraction track, the minimum distance between numbered dots (●) is a fraction less than 1. A move on any track is a multiple of the minimum distance on that track. To begin a game, put a racer at numbered dot 0 on each track. We use base-10 cubes or game pawns or small golf tees to represent racers.

To move a racer, roll 4D6 (four 6-faced dice, each numbered 1 to 6). Use the four dice outcomes to make two fractions. The denominator of a fraction can be 2, 3, 4, 5 or 6. The numerator must be less than the denominator. There are 15 possible fractions, each less than 1.

- Possible fractions: $1/2, 1/3, 2/3, 1/4, 2/4, 3/4, 1/5, 2/5, 3/5, 4/5, 1/6, 2/6, 3/6, 4/6, 5/6$.

Equivalent fractions are aligned vertically on the fraction tracks: $\updownarrow 1/3 = 2/6$ $\updownarrow 1/2 = 2/4 = 3/6$ $\updownarrow 2/3 = 4/6$

Use two fractions to move two racers on two different fraction tracks. Example: Roll 1, 2, 3 and 5. Make fractions $1/2$ and $3/5$.

- Use $1/2$ to move one racer a distance $1/2$ on Track 1, $2/4$ on Track 3 or $3/6$ on Track 5.
- Use $3/5$ to move one racer a distance $3/5$ on Track 4.

Add the fractions and use the the sum to move one racer on one fraction track. Example: Roll 2, 3, 4, 6. Make fractions $2/4$ and $3/6$. Add the fractions: $2/4 + 3/6 = 1/2 + 1/2 = 2/2 = 1$.

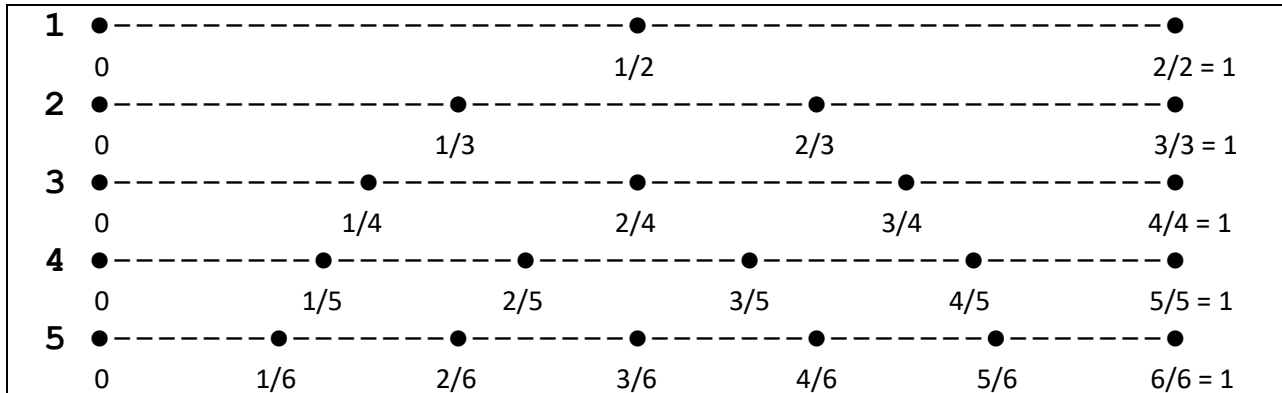
- Use 1 to move a racer from 0 to 1 on any track.

Subtract two unequal fractions, greater – lessor, and use the difference to move one racer on on fraction track. Example: A game is almost over. Racers are at 1 on Tracks 1, 2, 3 and 4. The racer on Track 5 is at $5/6$. Roll 1, 1, 2, 3. Make fractions $1/2$ and $1/3$. Subtract the fractions: $1/2 - 1/3 = 1/6$.

- Use $1/6$ to move the racer on Track 5 from $5/6$ to $6/6$. [$5/6 + 1/6 = 6/6 = 1$]

Fraction Race 0 to 1 Dice Game Example Games | [TOC](#)

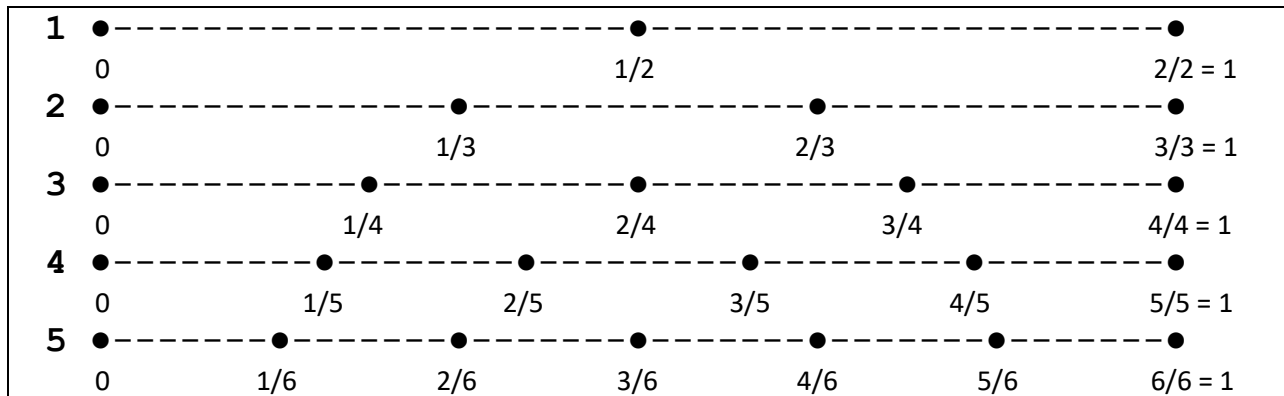
Example games 1 and 2



Fraction Race 0 to 1 Dice Game – example game 1				Racer locations				
4D6	Move 2 racers on 2 tracks or 1 racer on 1 track			T1	T2	T3	T4	T5
lo to hi	Fractns	Racer #1	Racer #2	0	0	0	0	0
2 3 5 6	2/3 5/6	T2: $0 + 2/3 = 2/3$	T5: $0 + 5/6 = 5/6$		2/3			5/6
1 2 5 6	2/6 1/5	$2/6 = 1/3$ (equivalent fractions) T2: $2/3 + 2/6 = 2/3 + 1/3 = 3/3 = 1$	T4: $0 + 1/5 = 1/5$		1		1/5	
1 2 3 6	1/2 3/6	$3/6 = 1/2$ (equivalent fractions) T1: $1/2 + 3/6 = 1/2 + 1/2 = 2/2 = 1$		1				
1 4 5 5	4/5	T4: $1/5 + 4/5 = 5/5 = 1$	1 5 no play				1	
1 2 3 4	2/4	T3: $0 + 2/4 = 2/4$	1 3 no play			2/4		
1 1 2 3	1/2 1/3	$1/2 - 1/3 = 3/6 - 2/6 = 1/6$ T5: $5/6 + 1/6 = 6/6 = 1$						1
2 3 4 6	2/4	T3: $2/4 + 2/4 = 4/4 = 1$	3 6 no play			1		

Fraction Race 0 to 1 Dice Game – example game 2				Racer locations				
4D6	Move 2 racers on 2 tracks or 1 racer on 1 track			T1	T2	T3	T4	T5
lo to hi	Fractns	Racer #1	Racer #2	0	0	0	0	0
3 4 4 6	3/4 4/6	T3: $0 + 3/4 = 3/4$	T5: $0 + 4/6 = 4/6$			3/4		4/6
1 1 6 6	1/6 1/6	$1/6 + 1/6 = 2/6$ T5: $4/6 + 2/6 = 6/6 = 1$						1
1 4 6 6	4/6	$4/6 = 2/3$ (equivalent fractions) T2: $0 + 4/6 = 0 + 2/3 = 2/3$	1 6 no play		2/3			
2 2 3 5	3/5	T4: $0 + 3/5 = 3/5$	2 2 no play				3/5	
1 2 4 5	1/4 2/5	T3: $3/4 + 1/4 = 4/4 = 1$	T4: $3/5 + 2/5 = 5/5 = 1$			1	1	
1 2 4 5	2/4	$2/4 = 1/2$ (equivalent fractions) T1: $0 + 2/4 = 0 + 1/2 = 1/2$	1 5 no play	1/2				
1 3 3 6	3/6 1/3	$3/6 = 1/2$ (equivalent fractions) T1: $1/2 + 3/6 = 1/2 + 1/2 = 2/2 = 1$	T2: $2/3 + 1/3 = 3/3 = 1$	1	1			

Example games 3 and 4



Fraction Race 0 to 1 Dice Game – example game 3				Racer locations				
4D6	Move 2 racers on 2 tracks or 1 racer on 1 track			T1	T2	T3	T4	T5
lo to hi	Fractns	Racer #1	Racer #2	0	0	0	0	0
2 3 4 5	2/3 4/5	T2: $0 + 2/3 = 2/3$	T4: $0 + 4/5 = 4/5$		2/3		4/5	
3 5 6 6	3/6 5/6	$3/6 = 1/2$ (equivalent fractions) T1: $0 + 3/6 = 0 + 1/2 = 1/2$	T5: $0 + 5/6 = 5/6$	1/2				5/6
1 3 3 4	1/3 3/4	T2: $2/3 + 1/3 = 3/3 = 1$	T3: $0 + 3/4 = 3/4$		1	3/4		
2 4 5 6	2/4	$2/4 = 1/2$ (equivalent fractions) T1: $1/2 + 2/4 = 1/2 + 1/2 = 2/2 = 1$	5 6 no play	1				
1 2 2 6	1/2 2/6	$1/2 = 3/6$ (equivalent fractions) $1/2 - 2/6 = 3/6 - 2/6 = 1/6$ T5: $5/6 + 1/6 = 6/6 = 1$						1
2 3 5 5	3/5 2/5	$3/5 - 2/5 = 1/5$ T4: $4/5 + 1/5 = 5/5 = 1$					1	
1 3 4 5	1/4	T3: $3/4 + 1/4 = 4/4 = 1$	3 5 no play			1		

Fraction Race 0 to 1 Dice Game – example game 4				Racer locations				
4D6	Move 2 racers on 2 tracks or 1 racer on 1 track			T1	T2	T3	T4	T5
lo to hi	Fractns	Racer #1	Racer #2	0	0	0	0	0
2 2 6 6	2/6 2/6	$2/6 + 2/6 = 4/6$ T5: $0 + 4/6 = 4/6$						4/6
1 1 4 6	1/4 1/6	T3: $0 + 1/4 = 1/4$	T5: $4/6 + 1/6 = 5/6$			1/4		5/6
1 2 3 6	1/2 3/6	$3/6 = 1/2$ (equivalent fractions) $1/2 + 3/6 = 1/2 + 1/2 = 2/2 = 1$ T1: $0 + 1 = 1$		1				
2 2 3 5	2/3 2/5	T2: $0 + 2/3 = 2/3$	T4: $0 + 2/5 = 2/5$		2/3		2/5	
1 1 4 6	1/4 1/6	T3: $1/4 + 1/4 = 2/4$	T5: $5/6 + 1/6 = 6/6 = 1$			2/4		1
1 2 4 5	1/4 2/5	T3: $2/4 + 1/4 = 3/4$	T4: $2/5 + 2/5 = 4/5$			3/4	4/5	
1 1 2 6	2/6	$2/6 = 1/3$ (equivalent fractions) T2: $2/3 + 2/6 = 2/3 + 1/3 = 3/3 = 1$	1 1 no play		1			
1 4 6 6	1/4	T3: $3/4 + 1/4 = 4/4 = 1$	6 6 no play			1		
1 1 4 5	1/5	T4: $4/5 + 1/5 = 5/5 = 1$	1 4 no play				1	

Fraction Race 1 to 0 Dice Game | [TOC](#)

Roll 4D6 (four 6-faced dice with faces numbered 1 to 6) and use the dice outcomes to make two fractions that can be used to move racers from 1 to 0 on five Fraction Tracks.

- ☞ The denominator of the fraction can be 2, 3, 4, 5, or 6.
- ☞ The numerator of the fraction is less than the denominator.













Possible fractions:

- 1/2
- 1/3, 2/3
- 1/4, 2/4, 3/4
- 1/5, 2/5, 3/5, 4/5
- 1/6, 2/6, 3/6, 4/6, 5/6



4D6

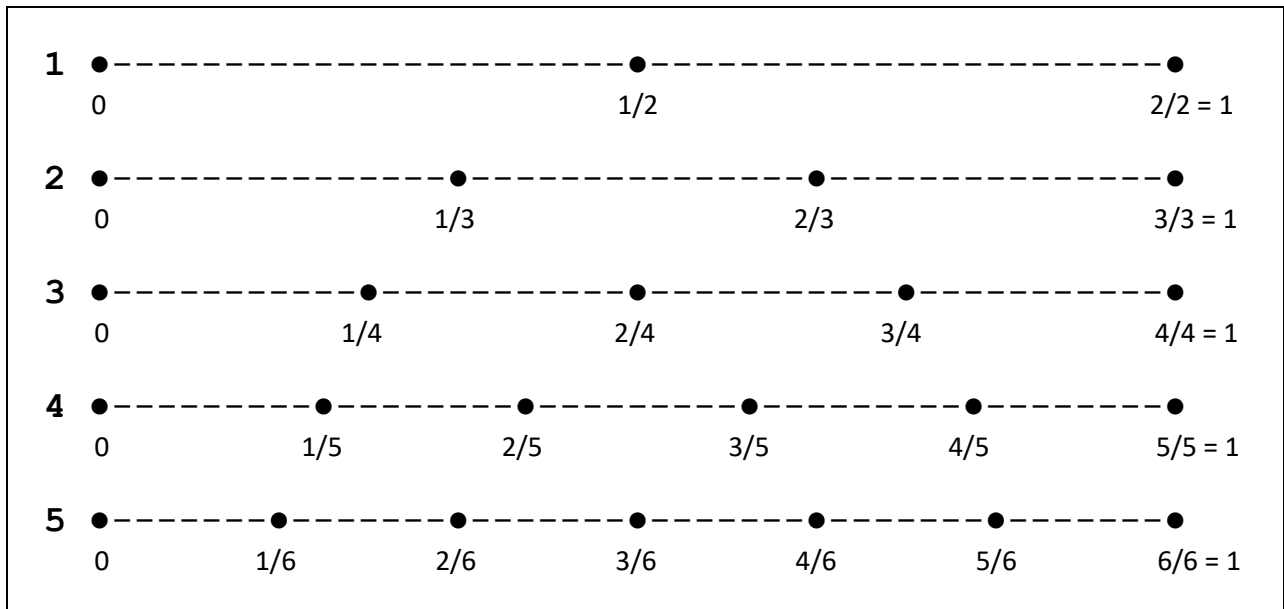
The 4D6 picture over yonder → is from Nasco Education.
Go to <https://www.enasco.com/> and search for dice.

2D6 Fractions: Denominator = 2, 3, 4, 5 or 6. Numerator < denominator						
						
		1/2	1/3	1/4	1/5	1/6
	1/2		2/3	2/4	2/5	2/6
	1/3	2/3		3/4	3/5	3/6
	1/4	2/4	3/4		4/5	4/6
	1/5	2/5	3/5	4/5		5/6
	1/6	2/6	3/6	4/6	5/6	

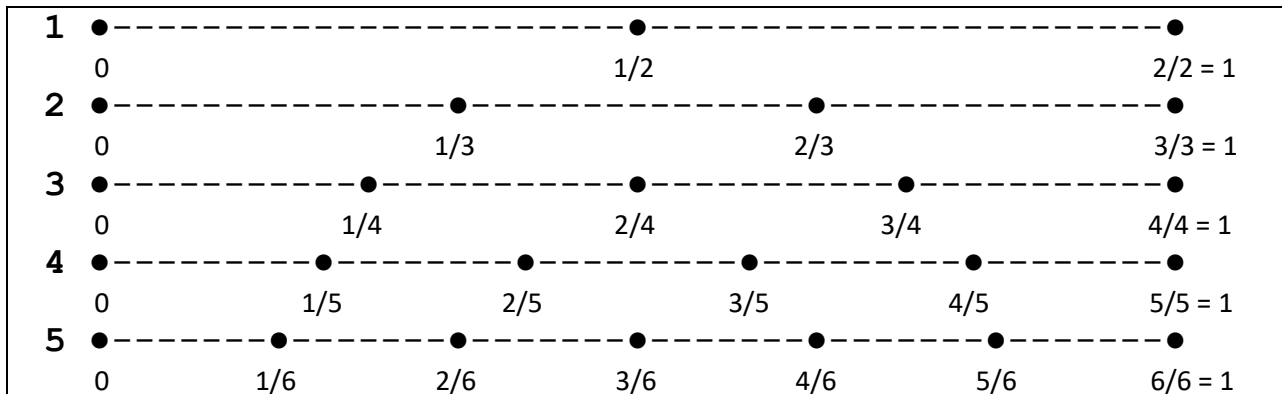
Roll 4D6 (four 6-faced dice with faces numbered 1 to 6) and make two fractions. Use the two fractions to move two racers on two different fraction tracks or one racer on one fraction track from one numbered dot (●) to another numbered dot (●). Players can do this in three ways:

1. Use the two fractions to move two racers on two different fraction racks.
2. Add the two fractions and use the sum as the distance to move one racer on one fraction track.
3. Subtract two unequal fractions, greater – lesser, and use the difference as the distance to move one racer on one fraction track.

←←← Racers race from 1 on the right end of a fraction track to 0 on the left end. ←←←



Fraction Race 1 to 0 Dice Game Play Notes | [TOC](#)



In each fraction track, the minimum distance between numbered dots (●) is a fraction less than 1. A move on any track is a multiple of the minimum distance on that track. To begin a game, put a racer at numbered dot 1 on each track. Racers race from 1 on the right end of a fraction track to 0 on the left end of the track. We use base-10 cubes or game pawns or small golf tees to represent racers.

To move a racer, roll 4D6 (four 6-faced dice, each numbered 1 to 6). Use the four dice outcomes to make two fractions. The denominator of a fraction can be 2, 3, 4, 5 or 6. The numerator must be less than the denominator. There are 15 possible fractions, each less than 1.

- Possible fractions: $1/2, 1/3, 2/3, 1/4, 2/4, 3/4, 1/5, 2/5, 3/5, 4/5, 1/6, 2/6, 3/6, 4/6, 5/6$.

Equivalent fractions are aligned vertically on the fraction tracks: $\updownarrow 1/3 = 2/6$ $\updownarrow 1/2 = 2/4 = 3/6$ $\updownarrow 2/3 = 4/6$

Use two fractions to move two racers on two different fraction tracks. Example: Roll 1, 2, 3 and 5. Make fractions $1/2$ and $3/5$.

- Use $1/2$ to move one racer a distance $1/2$ on Track 1, $2/4$ on Track 3 or $3/6$ on Track 5.
- Use $3/5$ to move one racer a distance $3/5$ on Track 4.

Add the two fractions and use the the sum to move one racer on one fraction track. Example: Roll 2, 3, 4, 6. Make fractions $2/4$ and $3/6$. Add the fractions: $2/4 + 3/6 = 1/2 + 1/2 = 2/2 = 1$.

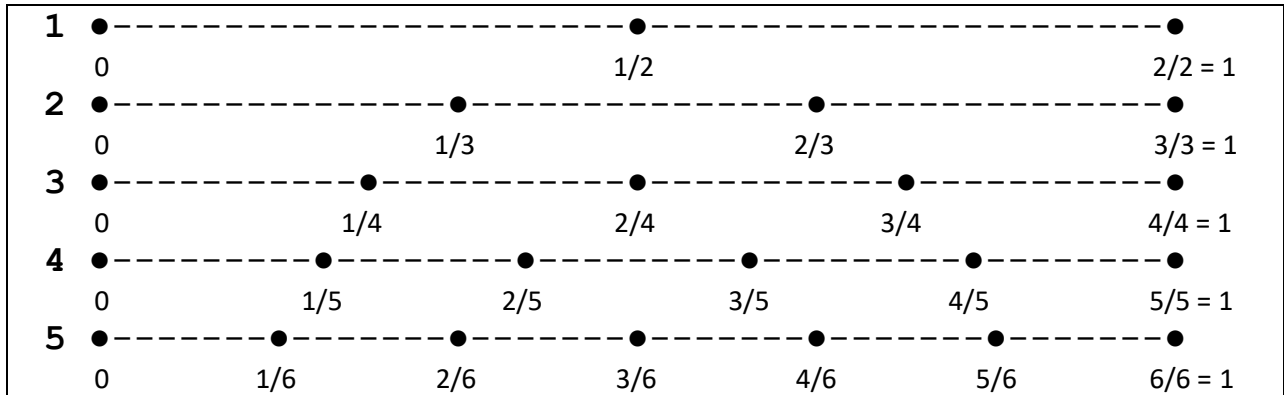
- Use 1 to move a racer from 1 to 0 on any track

Subtract two unequal fractions, greater- lessor, and use the difference to move one racer on one fraction track. Example: A game is almost over. Racers are at 0 on Tracks 1, 2, 3 and 4. The racer on Track 5 is at $1/6$. Roll 1, 1, 2, 3. Make fractions $1/2$ and $1/3$. Subtract the fractions: $1/2 - 1/3 = 3/6 - 2/6 = 1/6$.

- Use $1/6$ to move the racer on Track 5 from $1/6$ to 0. [$1/6 - 1/6 = 0$]

Fraction Race 1 to 0 Dice Game Example Games | [TOC](#)

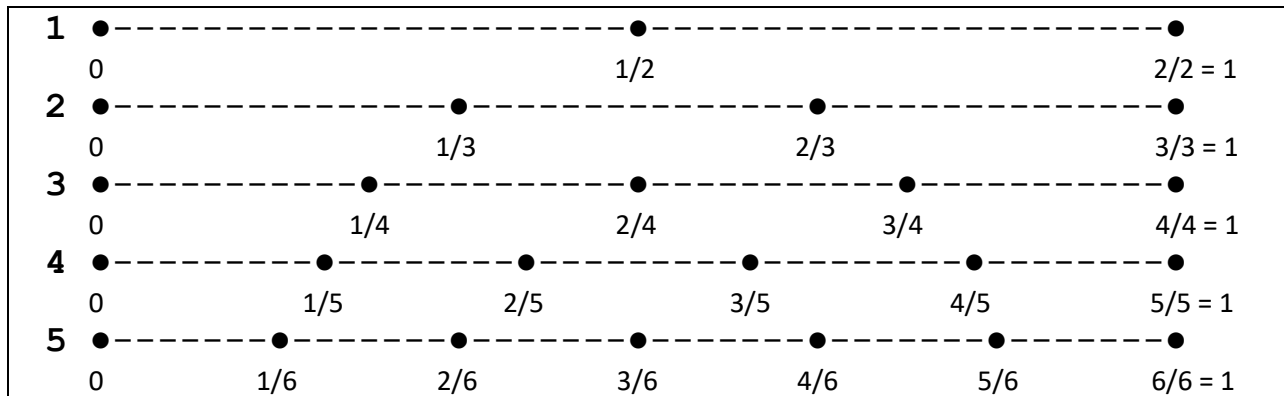
Example game 1



Fraction Race 1 to 0 Dice Game – example game 1				Racer locations				
4D6	Move 2 racers on 2 tracks or 1 racer on 1 track			T1	T2	T3	T4	T5
lo to hi	Fractns	Racer #1	Racer #2	1	1	1	1	1
1 3 4 5	1/3 4/5	T2: $1 - 1/3 = 2/3$	T4: $1 - 4/5 = 1/5$		2/3		1/5	
1 1 5 6	1/5 1/6	T4: $1/5 - 1/5 = 0$	T5: $1 - 1/6 = 5/6$				0	5/6
1 2 5 6	1/2 5/6	T1: $1 - 1/2 = 1/2$	T5: $5/6 - 5/6 = 0$	1/2				0
3 3 3 6	3/6	$3/6 = 1/2$ (equivalent fractions) T1: $1/2 - 1/2 = 0$	3 3 no play	0				
2 4 4 5	2/4	T3: $1 - 2/4 = 2/4$	4 5 no play			2/4		
2 3 6 6	2/6 3/6	$2/6 = 1/3$ (equivalent fractions) T2: $2/3 - 2/6 = 2/3 - 1/3 = 1/3$	$3/6 = 2/4$ (eq fract) T3: $2/4 - 3/6 = 2/4 - 2/4 = 0$		1/3	0		
1 2 4 4	no play	no play	no play					
1 5 6 6	no play	no play	no play					
1 2 4 6	2/6	$2/6 = 1/3$ (equivalent fractions) T2: $1/3 - 2/6 = 1/3 - 1/3 = 0$	1 4 no play		0			

Mosey on down ↓ for more example games.

Example Games 2 and 3

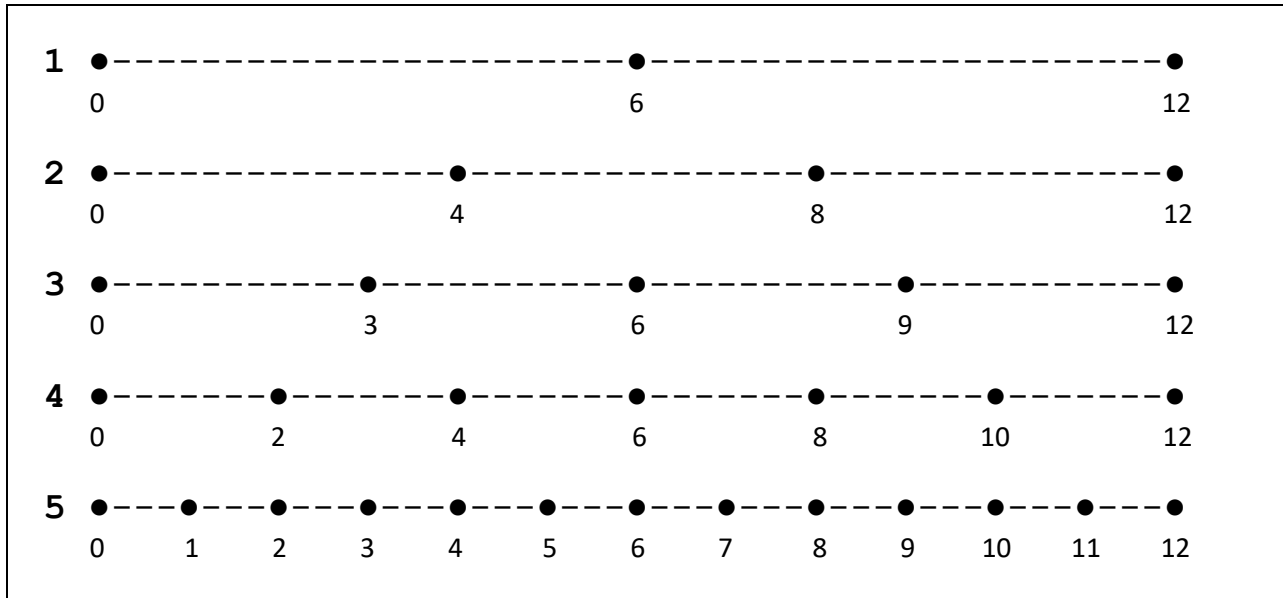


Fraction Race 1 to 0 Dice Game – example game 2				Racer locations				
4D6	Move 2 racers on 2 tracks or 1 racer on 1 track			T1	T2	T3	T4	T5
lo to hi	Fractns	Racer #1	Racer #2	1	1	1	1	1
2 3 3 5	2/3 3/5	T2: $1 - 2/3 = 1/3$	T4: $1 - 3/5 = 2/5$		1/3		2/5	
3 4 4 6	3/4 4/6	T3: $1 - 3/4 = 1/4$	T5: $1 - 4/6 = 2/6$			1/4		2/6
2 5 6 6	2/5	T4: $2/5 - 2/5 = 0$	6 6 no play				0	
1 1 2 5	1/2	T1: $1 - 1/2 = 1/2$	1 5 no play	1/2				
3 4 4 4	no play	no play	no play					
1 3 4 6	1/4 3/6	$3/6 = 1/2$ (equivalent fractions) T1: $1/2 - 3/6 = 1/2 - 1/2 = 0$	T3: $1/4 - 1/4 = 0$	0		0		
3 4 5 6	no play	no play	no play					
1 1 1 6	1/6	T5: $2/6 - 1/6 = 1/6$	1 1 no play					1/6
2 3 6 6	2/6 3/6	$3/6 - 2/6 = 1/6$ T5: $1/6 - 1/6 = 0$						0
2 4 4 6	2/6	$2/6 = 1/3$ (equivalent fractions) T2: $1/3 - 2/6 = 1/3 - 1/3 = 0$	4 4 no play		0			

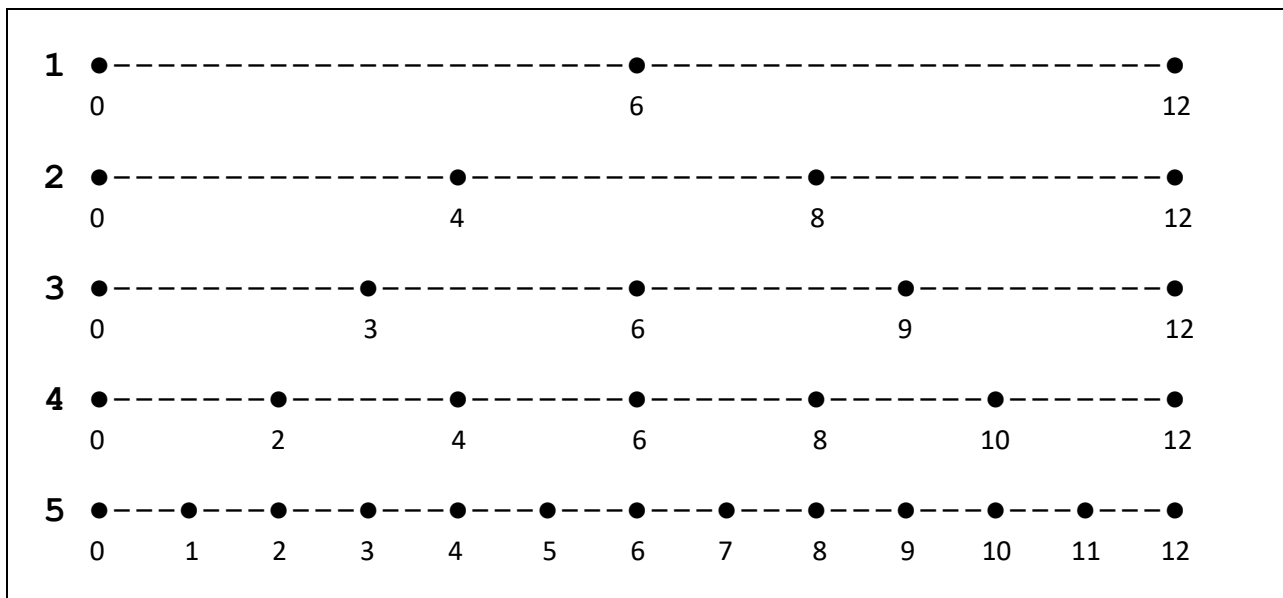
Fraction Race 1 to 0 Dice Game – example game 3				Racer locations				
4D6	Move 2 racers on 2 tracks or 1 racer on 1 track			T1	T2	T3	T4	T5
lo to hi	Fractns	Racer #1	Racer #2	1	1	1	1	1
2 4 6 6	2/6 4/6	$2/6 + 4/6 = 6/6 = 1$ T5: $1 - 1 = 0$						0
1 4 4 5	1/4 4/5	T3: $1 - 1/4 = 3/4$	T4: $1 - 4/5 = 1/5$			3/4	1/5	
2 3 4 6	2/4 3/6	$2/4 = 1/2$ (equivalent fractions) $3/6 = 1/2$ (equivalent fractions) $2/4 + 3/6 = 1/2 + 1/2 = 1$ T1: $1 - 1 = 0$		0				
3 3 4 6	3/4	T3: $3/4 - 3/4 = 0$	3 6 no play			0		
1 3 3 6	1/3	T2: $1 - 1/3 = 2/3$	3 6 no play		2/3			
2 2 3 4	2/3	T2: $2/3 - 2/3 = 0$	2 4 no play		0			
1 3 4 5	1/5	T4: $1/5 - 1/5 = 0$	3 4 no play				0	

Appendix 01 Number Race Dice Game Racetracks | [TOC](#)

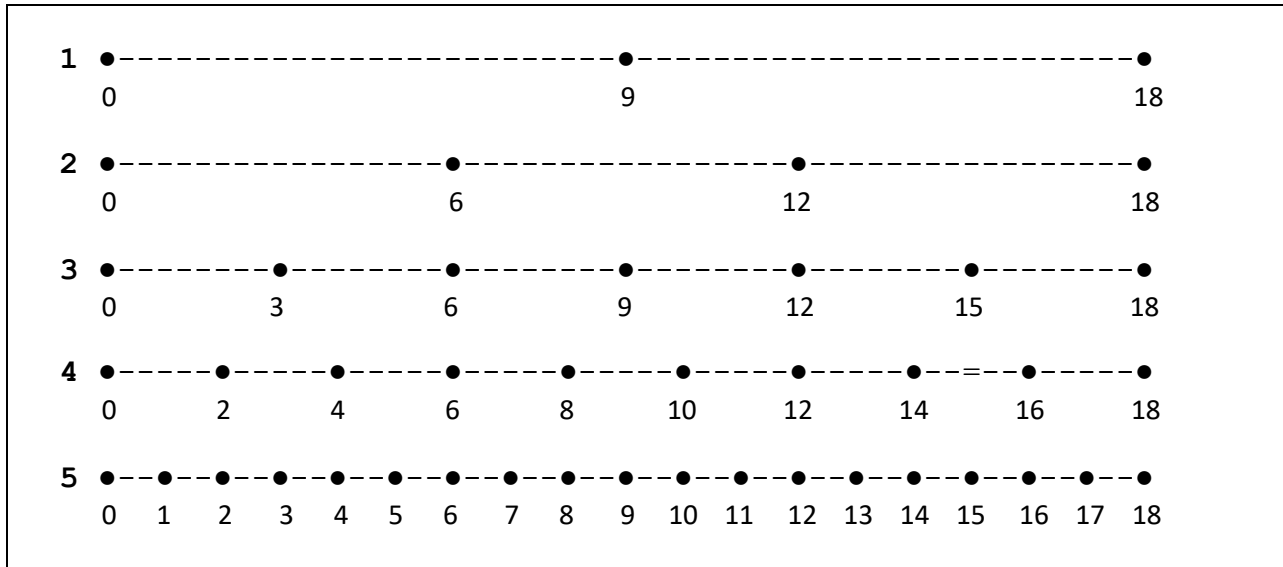
Number Race 0 to 12 or 12 to 0 racetracks



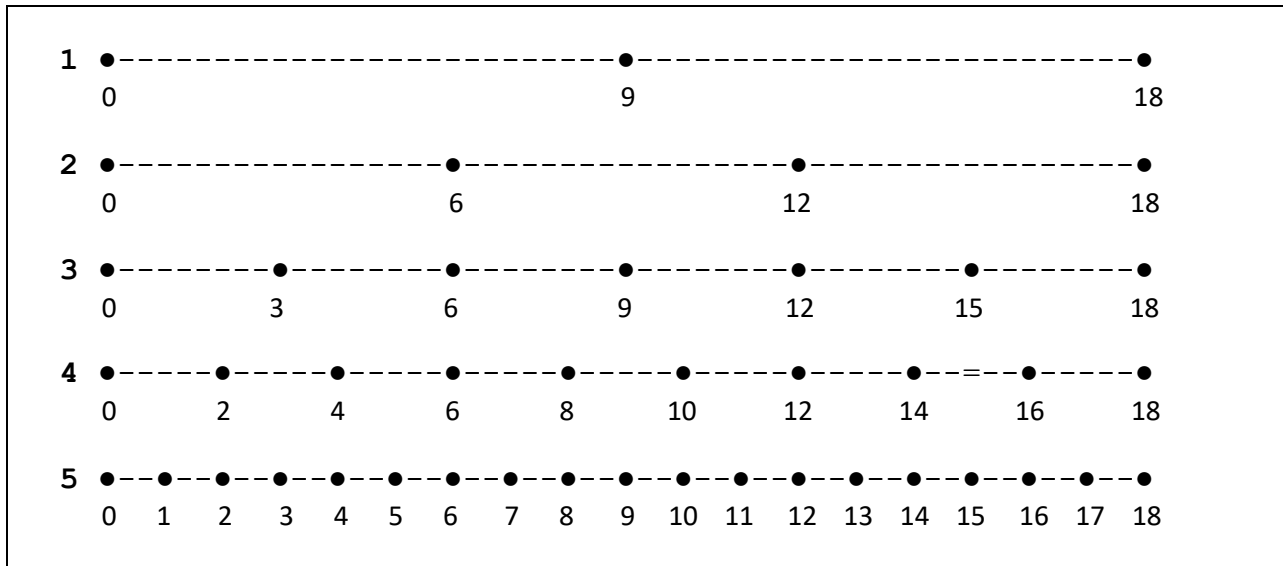
Number Race 0 to 12 or 12 to 0 racetracks



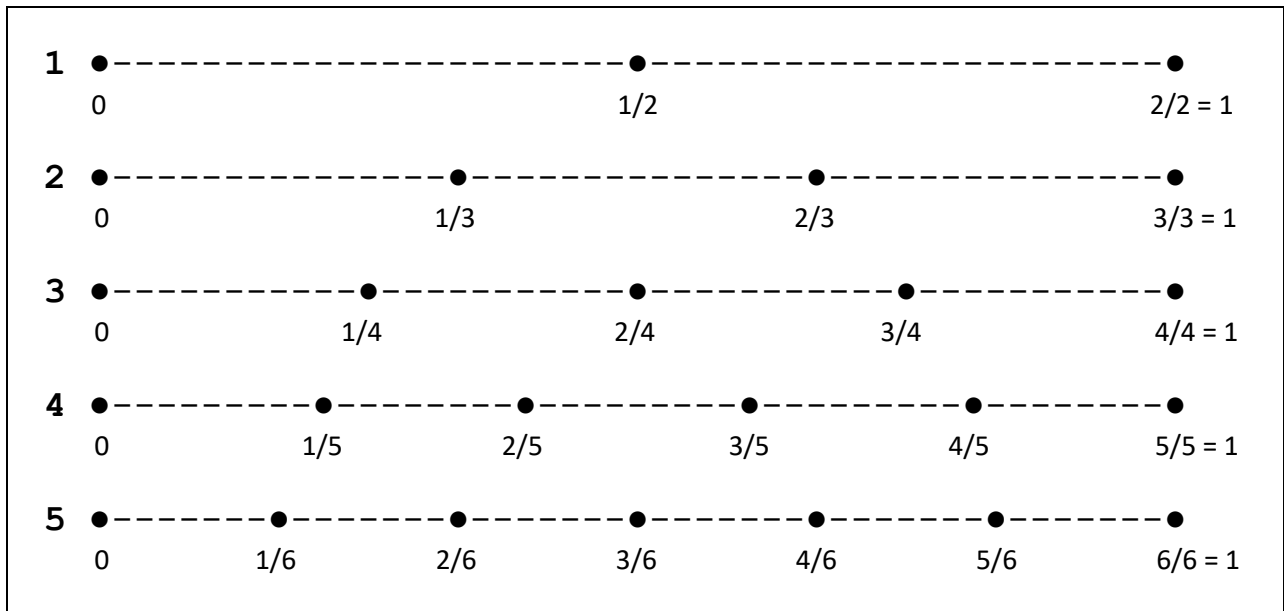
Number Race 0 to 18 or 18 to 0 racetracks



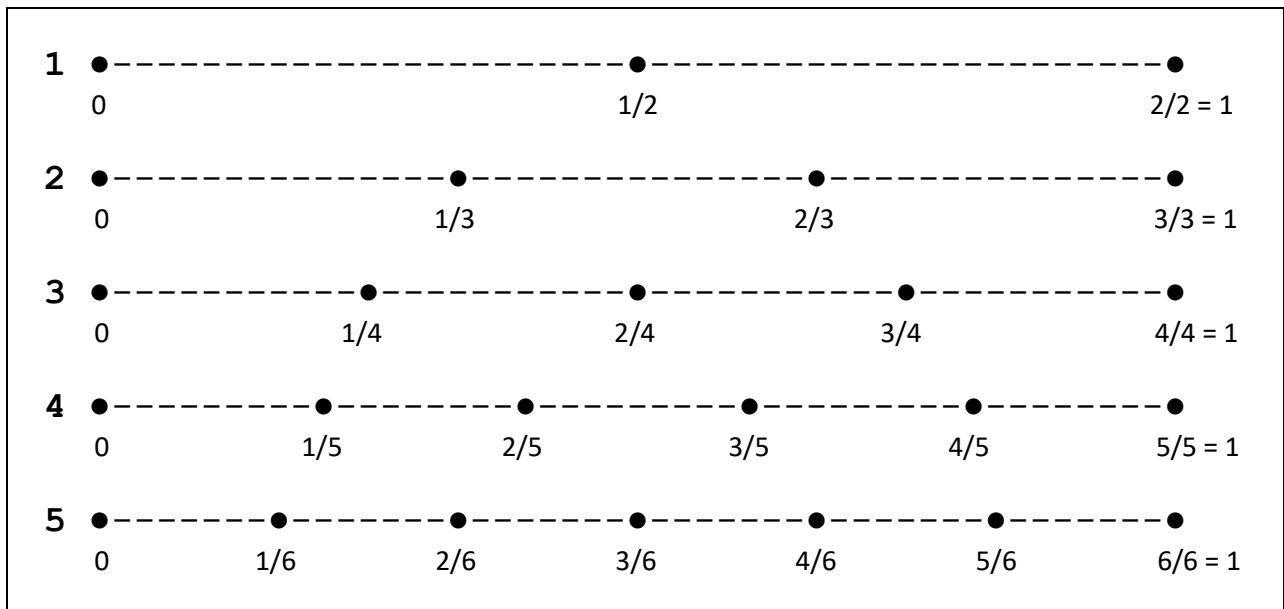
Number Race 0 to 18 or 18 to 0 racetracks



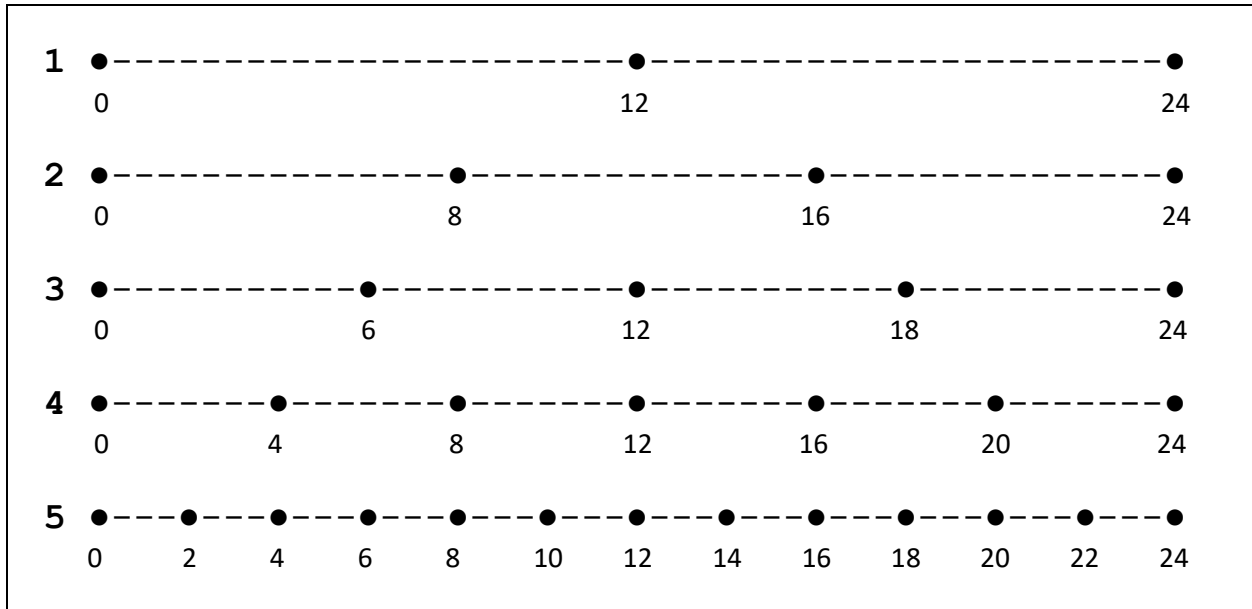
Fraction Race 0 to 1 or 1 to 0 racetracks



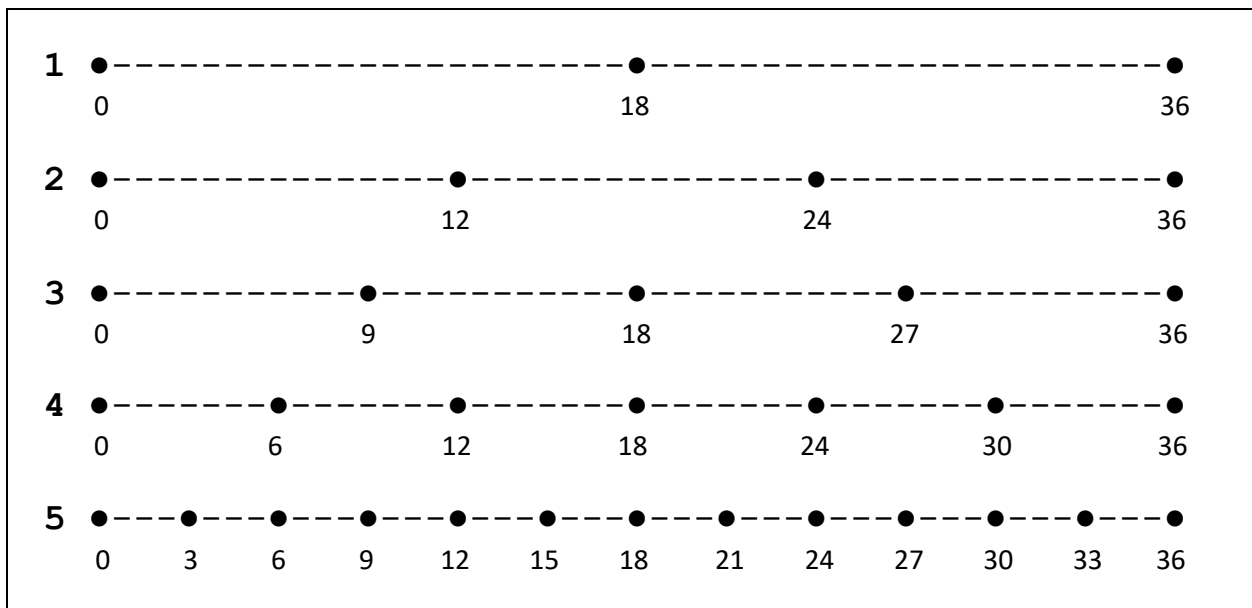
Fraction Race 0 to 1 or 1 to 0 racetracks



Number Race 0 to 24 or 24 to 0 racetracks – Your Turn: Write the rules.



Number Race 0 to 36 or 36 to 0 racetracks – Your Turn: Write the rules.



Fraction Race 0 to 1 or 1 to 0 using digit dice (DDs) – Your Turn: Write the rules

Digit Dice (DD) fraction: Numerator/Denominator

- Denominator: 2, 3, 4, 6, 8 or 9, but not 5 nor 7.
- Numerator: less than denominator.

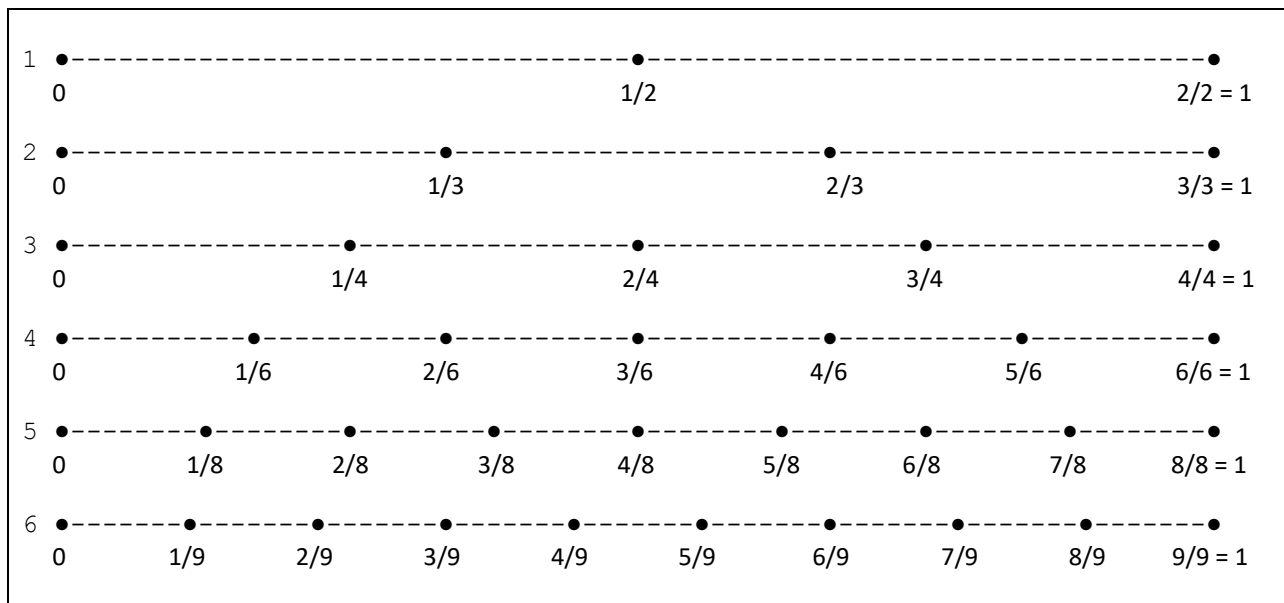
Possible fractions:

- $1/2$
- $1/3, 2/3$
- $1/4, 2/4, 3/4$
- $1/6, 2/6, 3/6, 4/6, 5/6$
- $1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8$
- $1/9, 2/9, 3/9, 4/9, 5/9, 6/9, 7/9, 8/9$

Equivalent fractions are aligned vertically in the fraction tracks:

- $1/4 = 2/8$
- $1/3 = 2/6 = 3/9$
- $1/2 = 2/4 = 3/6 = 4/8$
- $2/3 = 4/6 = 6/9$
- $3/4 = 6/8$

Fraction Tracks



Appendix 03 2D6 Addition, Subtraction and Multiplication | [TOC](#)

☺☺☺
 Dice images are from <http://etc.usf.edu/clipart/galleries/579-dice> a great resource of clip art for teachers <http://etc.usf.edu/clipart/>
☺☺☺













Table 2D6-1 2D6 addition						
+						
	2	3	4	5	6	7
	3	4	5	6	7	8
	4	5	6	7	8	9
	5	6	7	8	9	10
	6	7	8	9	10	11
	7	8	9	10	11	12














Table 2D6-2 2D6 subtract unequal dice, greater die – lesser die						
						
		1	2	3	4	5
	1		1	2	3	4
	2	1		1	2	3
	3	2	1		1	2
	4	3	2	1		1
	5	4	3	2	1	













Table 2D6-3 2D6 multiplication						
×						
	1	2	3	4	5	6
	2	4	6	8	10	12
	3	6	9	12	15	18
	4	8	12	16	20	24
	5	10	15	20	25	30
	6	12	18	24	30	36

Table 2D6-4 2D6 addition						
+	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

Table 2D6-5 2D6 subtract two unequal dice, greater – lesser						
—	1	2	3	4	5	6
1		1	2	3	4	5
2	1		1	2	3	4
3	2	1		1	2	3
4	3	2	1		1	2
5	4	3	2	1		1
6	5	4	3	2	1	

Table 2D6-6 2D6 multiplication						
×	1	2	3	4	5	6
1	1	2	3	4	5	6
2	2	4	6	8	10	12
3	3	6	9	12	15	18
4	4	8	12	16	20	24
5	5	10	15	20	25	30
6	6	12	18	24	30	36

Appendix 04 2DD Addition, Subtraction and Multiplication | [TOC](#)

Table 2DD-1 Digit dice addition										
+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

Table 2DD-2 Digit dice subtraction: subtract two unequal dice, greater – lesser										
–	0	1	2	3	4	5	6	7	8	9
0		1	2	3	4	5	6	7	8	9
1	1		1	2	3	4	5	6	7	8
2	2	1		1	2	3	4	5	6	7
3	3	2	1		1	2	3	4	5	6
4	4	3	2	1		1	2	3	4	5
5	5	4	3	2	1		1	2	3	4
6	6	5	4	3	2	1		1	2	3
7	7	6	5	4	3	2	1		1	2
8	8	7	6	5	4	3	2	1		1
9	9	8	7	6	5	4	3	2	1	

Table 2DD-3 Digit dice multiplication										
×	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

Appendix 05 Fraction Addition and Subtraction | [TOC](#)

Roll 4D6 (four 6-faced dice with faces numbered 1 to 6) and use the dice outcomes to make two fractions.

- ☞ The denominator of a fraction can be 2, 3, 4, 5, or 6.
- ☞ The numerator of a fraction is less than the denominator.

Possible fractions: $1/2$, $1/3$, $2/3$, $1/4$, $2/4$, $3/4$, $1/5$, $2/5$, $3/5$, $4/5$, $1/6$, $2/6$, $3/6$, $4/6$, $5/6$

+	1/2	1/3	2/3	1/4	2/4	3/4	1/5	2/5	3/5	4/5	1/6	2/6	3/6	4/6	5/6
1/2	$\frac{2}{2}$ 1	5/6	7/6	3/4	$\frac{4}{4}$ 1	5/4	7/10	9/10	11/10	13/10	$\frac{4}{6}$ $\frac{2}{3}$	5/6	$\frac{6}{6}$ 1	7/6	$\frac{8}{6}$ $\frac{4}{3}$
1/3	5/6	2/3	$\frac{3}{3}$ 1	7/12	$\frac{10}{12}$ $\frac{5}{6}$	13/12	8/15	11/15	14/15	17/15	$\frac{3}{6}$ $\frac{1}{2}$	$\frac{4}{6}$ $\frac{2}{3}$	5/6	$\frac{6}{6}$ 1	7/6
2/3	7/6	$\frac{3}{3}$ 1	4/3	11/12	$\frac{14}{12}$ $\frac{7}{6}$	17/12	13/15	16/15	19/15	22/15	5/6	$\frac{6}{6}$ 1	7/6	$\frac{8}{6}$ $\frac{4}{3}$	$\frac{9}{6}$ $\frac{3}{2}$
1/4	3/4	7/12	11/12	$\frac{2}{4}$ $\frac{1}{2}$	3/4	$\frac{4}{4}$ 1	9/20	13/20	17/20	21/20	5/12	7/12	$\frac{9}{12}$ $\frac{3}{4}$	11/12	13/12
2/4	$\frac{4}{4}$ 1	$\frac{10}{12}$ $\frac{5}{6}$	$\frac{14}{12}$ $\frac{7}{6}$	3/4	$\frac{4}{4}$ 1	5/4	$\frac{14}{20}$ $\frac{7}{10}$	$\frac{18}{20}$ $\frac{9}{10}$	$\frac{22}{20}$ $\frac{11}{10}$	$\frac{26}{20}$ $\frac{13}{10}$	$\frac{8}{12}$ $\frac{2}{3}$	$\frac{10}{12}$ $\frac{5}{6}$	$\frac{12}{12}$ 1	$\frac{14}{12}$ $\frac{7}{6}$	$\frac{16}{12}$ $\frac{4}{3}$
3/4	5/4	13/12	17/12	$\frac{4}{4}$ 1	5/4	$\frac{6}{4}$ $\frac{3}{2}$	19/20	23/20	27/20	31/20	11/12	13/12	$\frac{15}{12}$ $\frac{5}{4}$	17/12	19/12
1/5	7/10	8/15	13/15	9/20	$\frac{14}{20}$ $\frac{7}{10}$	19/20	2/5	3/5	4/5	$\frac{5}{5}$ 1	11/30	$\frac{16}{30}$ $\frac{8}{15}$	$\frac{21}{30}$ $\frac{7}{10}$	$\frac{26}{30}$ $\frac{13}{15}$	31/30
2/5	9/10	11/15	16/15	13/20	$\frac{18}{20}$ $\frac{9}{10}$	23/20	3/5	4/5	$\frac{5}{5}$ 1	6/5	17/30	$\frac{22}{30}$ $\frac{11}{15}$	$\frac{27}{30}$ $\frac{9}{10}$	$\frac{32}{30}$ $\frac{16}{15}$	37/30
3/5	11/10	14/15	19/15	17/20	$\frac{22}{20}$ $\frac{11}{10}$	27/20	4/5	$\frac{5}{5}$ 1	6/5	7/5	23/30	$\frac{28}{30}$ $\frac{14}{15}$	$\frac{33}{30}$ $\frac{11}{10}$	$\frac{38}{30}$ $\frac{19}{15}$	43/30
4/5	13/10	17/15	22/15	16/20	$\frac{26}{20}$ $\frac{13}{10}$	31/20	$\frac{5}{5}$ 1	6/5	7/5	8/5	29/30	$\frac{34}{30}$ $\frac{17}{15}$	$\frac{39}{30}$ $\frac{13}{10}$	$\frac{44}{30}$ $\frac{22}{15}$	49/30
1/6	$\frac{4}{6}$ $\frac{2}{3}$	$\frac{3}{6}$ $\frac{1}{2}$	5/6	5/12	$\frac{8}{12}$ $\frac{2}{3}$	11/12	11/30	17/30	23/30	29/30	$\frac{2}{6}$ $\frac{1}{3}$	$\frac{3}{6}$ $\frac{1}{2}$	$\frac{4}{6}$ $\frac{2}{3}$	5/6	$\frac{6}{6}$ 1
2/6	5/6	$\frac{4}{6}$ $\frac{2}{3}$	$\frac{6}{6}$ 1	7/12	$\frac{10}{12}$ $\frac{5}{6}$	13/12	$\frac{16}{30}$ $\frac{8}{15}$	$\frac{22}{30}$ $\frac{11}{15}$	$\frac{28}{30}$ $\frac{14}{15}$	$\frac{34}{30}$ $\frac{17}{15}$	$\frac{3}{6}$ $\frac{1}{2}$	$\frac{4}{6}$ $\frac{2}{3}$	5/6	$\frac{6}{6}$ 1	7/6
3/6	$\frac{6}{6}$ 1	5/6	7/6	$\frac{9}{12}$ $\frac{3}{4}$	$\frac{12}{12}$ 1	$\frac{15}{12}$ $\frac{5}{4}$	$\frac{21}{30}$ $\frac{7}{10}$	$\frac{27}{30}$ $\frac{9}{10}$	$\frac{33}{30}$ $\frac{11}{10}$	$\frac{39}{30}$ $\frac{13}{10}$	$\frac{4}{6}$ $\frac{2}{3}$	5/6	$\frac{6}{6}$ 1	7/6	$\frac{8}{6}$ $\frac{4}{3}$
4/6	7/6	$\frac{6}{6}$ 1	$\frac{8}{6}$ $\frac{4}{3}$	11/12	$\frac{14}{12}$ $\frac{7}{6}$	17/12	$\frac{26}{30}$ $\frac{13}{15}$	$\frac{32}{30}$ $\frac{16}{15}$	$\frac{38}{30}$ $\frac{19}{15}$	$\frac{44}{30}$ $\frac{22}{15}$	5/6	$\frac{6}{6}$ 1	7/6	$\frac{8}{6}$ $\frac{4}{3}$	$\frac{9}{6}$ $\frac{3}{2}$
5/6	$\frac{8}{6}$ $\frac{4}{3}$	7/6	$\frac{9}{6}$ $\frac{3}{2}$	13/12	$\frac{16}{12}$ $\frac{4}{3}$	19/12	31/30	37/30	43/30	49/30	$\frac{6}{6}$ 1	7/6	$\frac{8}{6}$ $\frac{4}{3}$	$\frac{9}{6}$ $\frac{3}{2}$	$\frac{10}{6}$ $\frac{5}{3}$

Roll 4D6 (four 6-faced dice with faces numbered 1 to 6) and use the dice outcomes to make two fractions.

- ☞ The denominator of a fraction can be 2, 3, 4, 5, or 6.
- ☞ The numerator of a fraction is less than the denominator.

Possible fractions: $1/2, 1/3, 2/3, 1/4, 2/4, 3/4, 1/5, 2/5, 3/5, 4/5, 1/6, 2/6, 3/6, 4/6, 5/6$

Table 05-2 Fraction subtraction, greater fraction – lesser fraction															
+	1/2	1/3	2/3	1/4	2/4	3/4	1/5	2/5	3/5	4/5	1/6	2/6	3/6	4/6	5/6
1/2		1/6	1/6	1/4		1/4	3/19	1/10	1/10	3/10	$\frac{2/6}{1/3}$	1/6		1/6	$\frac{2/6}{1/3}$
1/3	1/6		1/3	1/12	$\frac{2/12}{1/6}$	5/12	2/15	1/15	4/15	7/15	1/6		1/6	$\frac{2/6}{1/3}$	$\frac{3/6}{1/2}$
2/3	1/6	1/3		5/12	$\frac{2/12}{1/6}$	1/12	7/15	4/15	1/15	2/15	$\frac{3/6}{1/2}$	$\frac{2/6}{1/3}$	1/6		1/6
1/4	1/4	1/12	5/12		1/4	$\frac{2/4}{1/2}$	1/20	3/20	7/20	11/20	1/12	1/12	$\frac{3/12}{1/4}$	5/12	7/12
2/4		$\frac{2/12}{1/6}$	$\frac{2/12}{1/6}$	1/4		1/4	$\frac{6/20}{3/10}$	$\frac{2/20}{1/10}$	$\frac{2/20}{1/10}$	$\frac{6/20}{3/10}$	$\frac{4/12}{1/3}$	$\frac{2/12}{1/6}$		$\frac{2/12}{1/6}$	$\frac{4/12}{1/3}$
3/4	1/4	5/12	1/12	$\frac{2/4}{1/2}$	1/4		11/20	7/20	3/20	1/20	7/12	5/12	$\frac{3/12}{1/4}$	1/12	1/12
1/5	3/10	2/15	7/15	1/20	$\frac{6/20}{3/10}$	11/20		1/5	2/5	3/5	1/30	$\frac{4/30}{2/15}$	$\frac{9/30}{3/10}$	$\frac{14/30}{7/15}$	19/30
2/5	1/10	1/15	4/15	3/20	$\frac{2/20}{1/10}$	7/20	1/5		1/5	2/5	7/30	$\frac{2/30}{1/15}$	$\frac{3/30}{1/10}$	$\frac{8/30}{4/15}$	13/30
3/5	1/10	4/15	1/15	7/20	$\frac{2/20}{1/10}$	3/20	2/5	1/5		1/5	13/30	$\frac{8/30}{4/15}$	$\frac{3/30}{1/10}$	$\frac{2/30}{1/15}$	7/30
4/5	3/10	7/15	2/15	11/20	$\frac{6/20}{3/10}$	1/20	3/5	2/5	1/5		19/30	$\frac{14/30}{7/15}$	$\frac{9/30}{3/10}$	$\frac{4/30}{2/16}$	1/30
1/6	$\frac{2/6}{1/3}$	1/6	$\frac{3/6}{1/2}$	1/12	$\frac{4/12}{1/3}$	7/12	1/30	7/30	13/30	19/30		1/6	$\frac{2/6}{1/3}$	$\frac{3/6}{1/2}$	$\frac{4/6}{2/3}$
2/6	1/6		$\frac{2/6}{1/3}$	1/12	$\frac{2/12}{1/6}$	5/12	$\frac{4/30}{2/15}$	$\frac{2/30}{1/15}$	$\frac{8/30}{4/15}$	$\frac{14/30}{7/15}$	1/6		1/6	$\frac{3/6}{1/3}$	$\frac{3/6}{1/2}$
3/6		1/6	1/6	$\frac{3/12}{1/4}$		$\frac{3/12}{1/4}$	$\frac{9/30}{3/10}$	$\frac{3/30}{1/10}$	$\frac{3/30}{1/10}$	$\frac{9/30}{3/10}$	$\frac{2/6}{1/3}$	1/6		1/6	$\frac{2/6}{1/3}$
4/6	1/6	$\frac{2/6}{1/3}$		5/12	$\frac{2/12}{1/6}$	1/12	$\frac{14/30}{7/15}$	$\frac{8/30}{4/15}$	$\frac{2/30}{1/15}$	$\frac{4/30}{2/15}$	$\frac{3/6}{1/2}$	$\frac{2/6}{1/3}$	1/6		1/6
5/6	$\frac{2/6}{1/3}$	$\frac{3/6}{1/2}$	1/6	7/12	$\frac{4/12}{1/3}$	1/12	19/30	13/30	7/30	1/30	$\frac{4/6}{2/3}$	$\frac{3/6}{1/2}$	$\frac{2/6}{1/3}$	1/6	