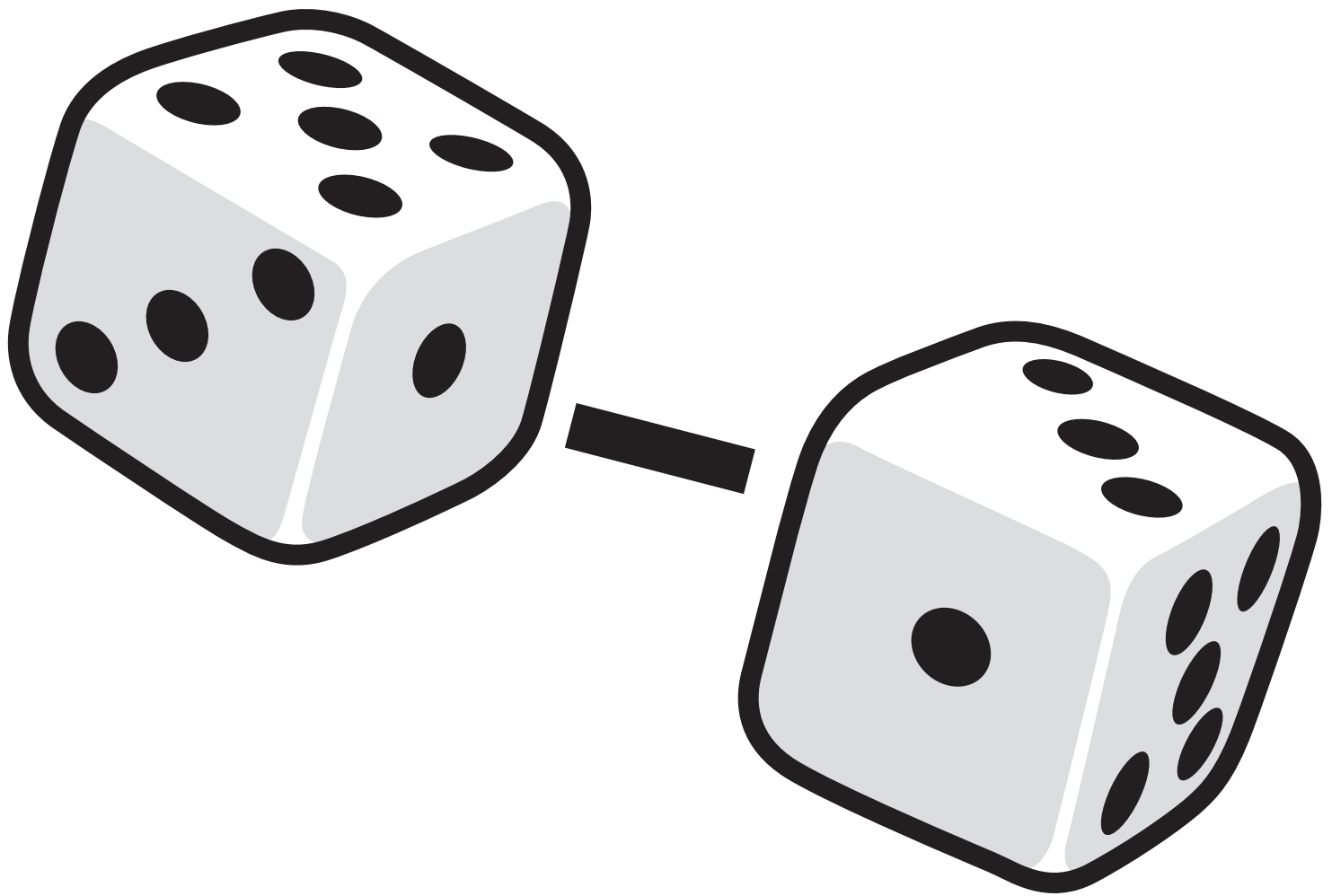# Dice Activities for Subtraction

Engage • Challenge • Empower

Mary Saltus, Diane Neison, Chet Delani, Marcia Fitzgerald, Karen Moore

Directions for Rounds Activities

Objectives

- Develop a sense of number and number patterns when subtracting numbers 1 through 85.
- Practice subtracting numbers 1 through 6 from numbers ranging from 7 to 61.
- Recognize number patterns when subtracting a multiple of 5 or 10 from a two-digit number ending in 5.

The **Rounds** activities help students to develop an awareness of number patterns. Introduce the **Rounds** activity by demonstrating on an overhead. Two teams with two students on a team are suggested.

Materials

- Chart
- Dice
- Tokens (tiles, chips, cubes)

How to Play

Round 1

- Taking turns, teams toss 1 or 2 dice, depending on the activity.
- The team performs the required computation and places a token on the answer in the first row of their chart.
- If the number has a token on it, the team loses that turn.
- The first team to place tokens on all six numbers in the row wins that round, and play moves to the next round.

Rounds 2 and 3

- Directions are the same as for Round 1.
- The team winning two out of three rounds wins the game.

Suggestions

- Encourage students to think their way through subtraction as a mental activity. For example, if they are subtracting 15 – 4, ask them to first consider 15 – 5, which is an easier equation to solve. Explore what they would have to do to use the answer from 15 – 5 to solve 15 – 4.
- If students are struggling with subtraction facts, suggest they use the Hundred Chart (page vi) to help them with their calculations.

Variation

- The team with the most tokens on their chart after three rounds wins the game.
- A team only moves on to the next round when each number in the row has a token on it. The first team to fill their chart wins.

Discussion

- Is this a game of luck or skill?
- How might it be possible for a team to have the most tokens on their chart yet not win two out of threes rounds?
- How does this activity help you learn subtraction patterns?

6, 7, 8 Minus a Die Rounds

- Each team tosses a die.
- Higher number goes first.
- Each team gets a chart.

How to Play

Round 1
- Toss a die. Subtract the number on the die from **6.** Place a token on the difference.
- If the difference has a token on it, lose a turn. First team to place tokens on all six differences wins Round 1.

Round 2
- Toss a die. Subtract the number on the die from **7.** Place a token on the difference. First team to place tokens on all six differences wins Round 2.

Round 3
- Toss a die. Subtract the number on the die from **8.** Place a token on the difference. First team to place tokens on all six differences wins Round 3.
- Team winning 2 out of 3 rounds is the winner.

Round 1	6	0	1	2	3	4	5

Round 2	7	1	2	3	4	5	6

Round 3	8	2	3	4	5	6	7

9, 10, 11 Minus a Die Rounds

- *Each team tosses a die.*
- *Higher number goes first.*
- *Each team gets a chart.*

How to Play

Round 1
- *Toss a die. Subtract the number on the die from 9. Place a token on the difference.*
- *If the difference has a token on it, lose a turn. First team to place tokens on all six differences wins Round 1.*

Round 2
- *Toss a die. Subtract the number on the die from 10. Place a token on the difference. First team to place tokens on all six differences wins Round 2.*

Round 3
- *Toss a die. Subtract the number on the die from 11. Place a token on the difference. First team to place tokens on all six differences wins Round 3.*
- *Team winning 2 out of 3 rounds is the winner.*

Round 1	9	3	4	5	6	7	8
Round 2	10	4	5	6	7	8	9
Round 3	11	5	6	7	8	9	10

12, 13, 14 Minus a Die Rounds

- *Each team tosses a die.*
- *Higher number goes first.*
- *Each team gets a chart.*

How to Play
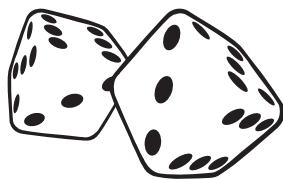
Round 1
- *Toss a die. Subtract the number on the die from 12. Place a token on the difference.*
- *If the difference has a token on it, lose a turn. First team to place tokens on all six differences wins Round 1.*

Round 2
- *Toss a die. Subtract the number on the die from 13. Place a token on the difference. First team to place tokens on all six differences wins Round 2.*

Round 3
- *Toss a die. Subtract the number on the die from 14. Place a token on the difference. First team to place tokens on all six differences wins Round 3.*
- *Team winning 2 out of 3 rounds is the winner.*

Round 1	12	6	7	8	9	10	11
Round 2	13	7	8	9	10	11	12
Round 3	14	8	9	10	11	12	13

Directions for Subtraction Bingo Activities

- Practice computing the differences of number combinations 1–18.
- Practice computing the difference between 65 and a number ending in 0 or 5.
- Reinforce the directionality concepts of diagonal, horizontal, and vertical.
- Develop cooperative skills by taking turns being the Bingo caller.

Subtraction Bingo is a cooperative way to familiarize students with subtraction concepts. The simplicity of the activity makes it a tool for diversifying learning. Some students may find it beneficial to stay with this activity, switching cards after each round, to develop recognition and fluency.

Subtraction Bingo may be played with 2–5 teams or players. Two teams with 2 students on a team are suggested. Playing on teams gives students an opportunity to discuss moves and strategies and provides a check on correct computation.

Materials

- Dice
- Bingo cards (set of 5)
- Tokens (tiles, cubes, chips)

How to Play

- Each team receives a Bingo card.
- Each team tosses a die. The team with the highest number designates a Bingo caller on that team. Players on the team take turns being the Bingo caller.
- The caller tosses a die or dice and calls out the number. All players agree on the solution to the subtraction problem.
- Teams place a token on one of the solutions on their card. If no play is possible, the team loses a turn.
- The first team to get Bingo (5 tokens in a row horizontally, vertically, or diagonally) is the winner.

Suggestions

- Encourage students to think their way through subtraction as a mental activity. If they are subtracting 18 – 12, for example, have them first consider 18 – 10, which is an easier equation to solve. Explore what they would have to do to use the answer from 18 – 10 to solve 18 – 12.
- If students are struggling with subtraction facts, suggest that they use the Hundred Chart (page vi) to help them with their computation.

Variations

- Teams place a token on all boxes containing the solution.
- The winning card must have Bingo diagonally and horizontally.
- The winning card must have Bingo diagonally and vertically.
- The winning card must have Bingo horizontally and vertically.

Discussion

- Is this a game of luck or skill?
- How does playing Bingo help you learn subtraction facts?

10 Minus a Die Subtraction Bingo

- *Each team tosses a die.*
- *Team with the highest number designates a Bingo caller on that team.*
- *Players on that team take turns as the Bingo caller.*

- *Caller tosses a die and calls out the number.*
- *All players agree on 10 minus the value of the die. Teams look for this number on their Bingo card and place a token on it.*
- *If no play is possible, lose a turn.*
- *First team to get Bingo (5 in a row horizontally, vertically, or diagonally) is the winner.*

Card A

SUBTRACTION BINGO

9	5	7	6	8
6	4	8	4	7
5	9	Free	4	5
8	7	9	6	8
7	4	6	9	5

- *Each team tosses a die.*
- *Team with the highest number designates a Bingo caller on that team.*
- *Players on that team take turns as the Bingo caller.*

How to Play

- *Caller tosses a die and calls out the number.*
- *All players agree on 10 minus the value of the die. Teams look for this number on their Bingo card and place a token on it.*
- *If no play is possible, lose a turn.*
- *First team to get Bingo (5 in a row horizontally, vertically, or diagonally) is the winner.*

Card B

SUBTRACTION BINGO

9	7	8	6	4
6	4	9	7	5
7	8	Free	5	4
9	5	6	4	8
8	6	7	9	5

10 Minus a Die Subtraction Bingo

- *Each team tosses a die.*
- *Team with the highest number designates a Bingo caller on that team.*
- *Players on that team take turns as the Bingo caller.*

How to Play

- *Caller tosses a die and calls out the number.*
- *All players agree on 10 minus the value of the die. Teams look for this number on their Bingo card and place a token on it.*
- *If no play is possible, lose a turn.*
- *First team to get Bingo (5 in a row horizontally, vertically, or diagonally) is the winner.*

Card C		SUBTRACTION BINGO		
9	4	7	5	8
9	5	8	6	5
7	4	Free	7	9
8	5	6	8	4
9	4	7	9	6

10 Minus a Die Subtraction Bingo

- *Each team tosses a die.*
- *Team with the highest number designates a Bingo caller on that team.*
- *Players on that team take turns as the Bingo caller.*

How to Play

- *Caller tosses a die and calls out the number.*
- *All players agree on 10 minus the value of the die. Teams look for this number on their Bingo card and place a token on it.*
- *If no play is possible, lose a turn.*
- *First team to get Bingo (5 in a row horizontally, vertically, or diagonally) is the winner.*

Card D

SUBTRACTION BINGO

9	4	8	5	7
5	6	4	6	4
7	9	Free	7	4
8	5	6	8	9
7	9	8	5	6

10 Minus a Die Subtraction Bingo

- *Each team tosses a die.*
- *Team with the highest number designates a Bingo caller on that team.*
- *Players on that team take turns as the Bingo caller.*

How to Play

- *Caller tosses a die and calls out the number.*
- *All players agree on 10 minus the value of the die. Teams look for this number on their Bingo card and place a token on it.*
- *If no play is possible, lose a turn.*
- *First team to get Bingo (5 in a row horizontally, vertically, or diagonally) is the winner.*

Card E

SUBTRACTION BINGO

| 9	6	4	9	8
6	5	7	6	5
7	4	Free	7	8
5	8	4	5	9
8	4	7	9	6

Directions for Hidden Number Activities

- Develop short-term memory and visual discrimination.
- Develop a sense of number and number patterns when subtracting numbers 1 through 20.
- Recognize number patterns when subtracting from a two-digit number ending in 0.
- Recognize number patterns when subtracting 10 from a two-digit number ending in 0 or 5.
- Encourage students to trust their memory as a strategy.

Introduce **Hidden Number** activities by demonstrating on an overhead or gathering the students together on a rug and playing against the class.

Two teams with two students on a team are suggested. Playing as teams gives students an opportunity to discuss moves and strategies and provides a check on correct computation.

Materials

- Dice
- Hidden number chart
- Tiles, chips, or Unifix cubes (big enough to completely cover the numerals on the chart)
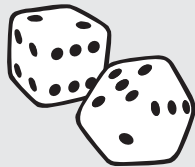
How to Play

- Cover each number on the chart with a tile.
- Each team tosses a die. The higher number goes first.
- On each turn, one team tosses a die or two dice and performs the required computation.

3 × 4 Charts Using a Die or Two Dice
5 × 5 Charts Using a Die

- The team removes a tile to see if the number on the chart is the same as the solution. If there is a match, the team removes the tile and tosses again. If the number is not a match, the team replaces the tile and the turn ends.
- When all tiles have been removed from the chart, the team with the most tiles wins.

5 × 5 Charts Using Two Dice

- *In this version, the teams remove two tiles with each toss.* If the first number uncovered is a match, the team removes the tile and takes another turn.
- If the first number uncovered is not a match, the team replaces the tile and removes another.
- If the second number uncovered is a match, the team takes another turn.
- If second number is not a match, the team replaces the tile and the turn ends.
- When all tiles have been removed from the chart, the team with the most tiles wins.

Variations

- If the game is not progressing, suggest that teams each make 5 more tosses. If after 5 tosses, tiles still remain on the chart, end the game. The team with the most tiles wins.

Discussion

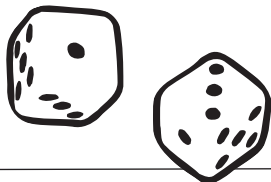- What techniques do you use to help you remember the hidden numbers?

How to Play

- *Teacher covers the numbers on the Hidden Number Chart with color tiles, chips, or Unifix Cubes.*
- *Each team tosses a die. Higher number goes first.*

- *Toss a die and subtract the number from **10**.*
- *Remove a tile to see if the number on the chart matches the solution. If it matches, play again.*
- *If the number you uncovered does not match, replace the tile and your team's turn ends.*
- *Teams take turns until all tiles are removed. Team with the most tiles wins.*

6	**8**	**7**
9	**4**	**6**
5	**7**	**5**
8	**4**	**9**

How to Play

- Teacher covers the numbers on the Hidden Number Chart with color tiles, chips, or Unifix Cubes.
- Each team tosses a die. Higher number goes first.

- Toss 2 dice and find the sum. Subtract the sum from **15.**
- Remove one tile to see if the number on the chart matches the solution. If it matches, play again. If the number you uncovered does not match, replace the tile and your team's turn ends.
- Teams take turns until all tiles are removed. Team with the most tiles wins.

6	**8**	**11**
9	**13**	**8**
3	**7**	**5**
10	**4**	**12**

Objectives

- Practice computing the difference between number combinations 1–25.
- Recognize patterns when subtracting a multiple of 5 (5 to 30) from two-digit numbers ending in 0.
- Develop communication and cooperation skills by working in teams of two students.
- Recognize the advantage of employing a defense strategy.

Tic-Tac-Toe is a familiar game form. These Tic-Tac-Toe activities provide a challenging and playful variation to use in practicing subtraction facts.

Each ***Tic-Tac-Toe*** activity is paired with a ***Four-Grid Tic-Tac-Toe*** activity, providing a way to diversify while reinforcing specific mathematical concepts. This format presents opportunities for students to practice each of the mathematical concepts playing ***Tic-Tac-Toe*** before moving on to the more complicated ***Four-Grid Tic-Tac-Toe***.

Two teams with two students on a team are suggested. Playing as teams gives students an opportunity to discuss moves and strategies and provides a check on correct computation.

Materials

- Chart
- Dice
- Tokens (tiles, chips, cubes)

Warm-Up Activity: *Tic-Tac-Toe*

- Introduce the ***Tic-Tac-Toe*** activities by demonstrating a standard game of Tic-Tac-Toe, using Xs and Os and playing against the class.

Discussion

- Does the side that goes first have an advantage?
- Is this a game of luck or skill?
- Is it a fair game?

How to Play: *Tic-Tac-Toe*

- Each team chooses a token and tosses a die. The higher number goes first.
- Taking turns, teams toss a die or dice, depending on the activity, and perform the required subtraction.
- With each toss of the die or dice, teams attempt to place their tokens in continuous alignment, vertically, horizontally, or diagonally, to win the game.
- If the solution is not shown on the grid or the number already has a token on it, the team loses a turn.
- The first team to form a Tic-Tac-Toe wins the game.
- The team winning 2 out of 3 games is the winner.
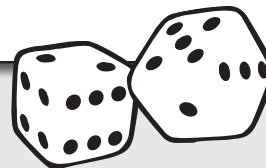
- *Each team tosses a die. Higher number goes first.*
- *Each team chooses a color token.*

How to Play

- *Toss 2 dice. Find the sum. Subtract the sum from **13**.*
- *Find the difference on the grid and place a token on it.*
- *If the number is not available, lose a turn.*
- *First team to get three tokens in a row wins.*
- *Play 3 games. Team winning 2 out of 3 games wins.*

7	**8**	**2**
5	**6**	**10**
3	**9**	**4**

- *Each team tosses a die. Higher number goes first.*
- *Each team chooses a color token.*

How to Play

- *Toss 2 dice. Find the sum. Subtract the sum from **13**.*
- *Place a token on the difference on any of the Tic-Tac-Toe grids.*
- *If the number is not available on any grid, lose a turn.*
- *Team with the most "three tokens in a row" wins.*

6	7	4		3	5	2
3	8	9		8	6	4
5	7	10		9	5	7
9	4	10		2	6	8
7	5	1		3	7	6
6	8	6		5	4	11