



# Daring Darts

## The Big Idea

Learn how to play and score a game of darts on a giant dartboard!

## You Will Need:

### To play the game:

- ★ Pencils: 1 per player
- ★ Small bag, bucket or baseball cap
- ★ Scrap paper for each player to keep score
- ★ Hacky sacks or hand-held bean bags: You'll need at least 1  
*See instructions on following pages to make your own, if needed*
- ★ Print 1 copy of the Easy or Challenge Random Round Cards on pages 4 & 5.  
Cut cards and place in the small bag, bucket or cap.

### To make a bean bag, if you don't have one:

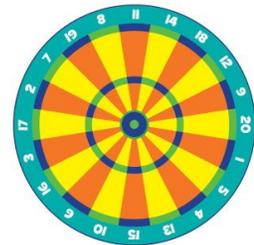
- ★ Old sock or deflated balloon
- ★  $\frac{1}{2}$  cup of small weighted items, like uncooked popcorn, rice, dry beans/lentils or new aquarium rocks.

### To make the dartboard\*:

- ★ Old tablecloth, bed sheet or large piece of cardboard
- ★ Long piece of string or ribbon
- ★ Marker
- ★ Measuring Tape or Ruler
- ★ Scissors

\*You can purchase a Bedtime Math dartboard here:

<http://bedtimemath.org/make-a-purchase/>. We charge only the wholesale cost of the dartboard plus shipping.



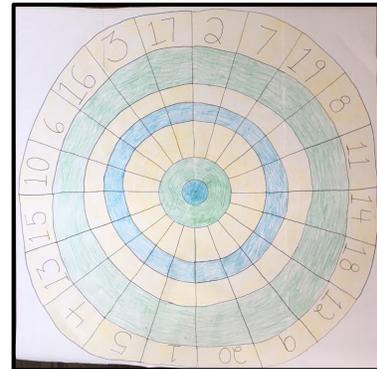
## Math Behind the Scenes:

- ★ Number recognition
- ★ Number value comparison
- ★ Addition
- ★ Multiplication

# Make Your Own Dartboard & Bean Bag

## Dartboard:

1. Find any large piece of plain fabric, tablecloth, bedsheet or cardboard – at least 4' x 4' works best.
2. To create a circle, tape one end of a piece of string to the center of the square and cut it 1" from the edge of the sheet. Pull the string around the sheet and use your marker to make a tick mark every 5 inches or so. Connect the marks to create your circle. If you don't have string, simply freehand it.
3. Divide the circle into 4 equal parts. Divide each quarter into 5 smaller pie slices to make 20 total wedges.
4. Use your marker to number the top of each wedge as follows: 20, 1, 5, 4, 13, 15, 10, 6, 16, 3, 17, 2, 7, 19, 8, 11, 14, 18, 12, 9.
5. Create a 2-tier bull's-eye by drawing a 4-inch circle in the center of your dart board surrounded by an 8-inch circle. You can adjust the sizes based on your dartboard.
6. For older kids, draw sections within each wedge for double and triple score. Make the game your own – be creative!



**Bean Bag:** Fill an old sock or balloon with 1/2 cup of small weighted items, like uncooked kernels of popcorn, rice, dry beans/lentils or new aquarium rocks.

## Math Behind the Dartboard

Because we love working with numbers, here's how we made our dartboard:

- ★ We found the distance around our circle (circumference) by measuring the distance across the circle (diameter) and multiplying by 3.14 (pi). The diameter of our circle was 69 inches, giving us a circumference of 216.66".
- ★ Since we needed to make 20 pie wedges, we divided 216.66 by 20 to get 10.8 inches per wedge. Let's call this number the *wedge mark*.
- ★ We drew lines to divide the circle into quarters. Starting from one of those lines, we measured roughly 10.8" (you should use *your* wedge mark) and made a tick mark. From that tick mark, we measured another 10.8 inches and continued until we made 5 wedges per section.
- ★ We drew lines from the center of the circle to each tick mark.
- ★ Our final product (above) is definitely homemade. Don't worry about perfection – have fun!

## Keeping Score

- ★ Each wedge is worth the number of points posted on the top edge. Older players who land on the double or triple wedges should multiply their score before recording it on their scoresheet.
- ★ For our game, the inner circle of the bull's eye is worth 40 points and its outer ring is worth 20 points.
- ★ You might notice that our dartboard isn't numbered exactly like a standard dartboard. Ours is numbered to make scoring better for all players!

## Let's Play!

1. Create a starting line by placing a length of masking tape approximately 2 feet from one side of the dartboard. You can make a starting line on each side of the dartboard if players want their own starting lines!
2. Give each player a scoresheet, a pencil and a bean bag (if you have more than 1).
3. Take turns tossing the bag. Each player scores the number of points where the bag stops, not where it first landed. If it overlaps 2 wedges, player scores the bigger of the 2 numbers.
4. Each player records the score on their sheet.
5. Once everyone has taken a turn, players add up their points to see who has the highest score! Repeat games as time and interest allows.
6. After a few rounds, you can move the starting line back 1 foot and play again! Or mix things up by picking a Random Round Card from the bag. You can pick one card and have all players perform that action before tossing the bean bag or each player can select his/her own card before each toss!

### Bonus (for older kids):

- ★ How many points do you score with 20 darts if 1 dart lands on each number? (Discuss. If they need a hint, ask them what's  $1 + 20$ ?  $2 + 19$ ?  $3 + 18$ ? And how many pairs would they then add? Answer: They'd add up to 210, or 10 pairs of 21 to get 210.)
- ★ If you land only on double or triple spots, what's the smallest score you can get with 2 darts? (Answer: 4)

## Random Round Cards - Easy

TAKE 3 STEPS BACK  
BEFORE THROWING

TAKE 3 STEPS BACK  
BEFORE THROWING

GET AN EXTRA TURN

GET AN EXTRA TURN

ADD 1  
FROM YOUR SCORE

ADD 1  
FROM YOUR SCORE

SUBTRACT 1  
FROM YOUR SCORE

SUBTRACT 1  
FROM YOUR SCORE

THROW WITH  
YOUR EYES CLOSED

THROW WITH  
YOUR EYES CLOSED

MOVE DART 1 WEDGE IN EITHER  
DIRECTION FROM WHERE IT LANDS

MOVE DART 1 WEDGE IN EITHER  
DIRECTION FROM WHERE IT LANDS

MOVE DART 5 WEDGES IN EITHER DIRECTION  
FROM WHERE IT LANDS

MOVE DART 5 WEDGES IN EITHER DIRECTION  
FROM WHERE IT LANDS

GUESS YOUR TARGET AND ADD 10  
TO YOUR SCORE IF YOU LAND ON IT

GUESS YOUR TARGET AND ADD 10  
TO YOUR SCORE IF YOU LAND ON IT

## Random Round Cards - Challenge

TAKE 3 STEPS BACK  
BEFORE THROWING

TAKE 3 STEPS BACK  
BEFORE THROWING

GET AN EXTRA TURN

GET AN EXTRA TURN

ADD 10  
TO YOUR SCORE

ADD 10  
TO YOUR SCORE

SUBTRACT 10  
FROM YOUR SCORE

SUBTRACT 10  
FROM YOUR SCORE

THROW WITH  
YOUR EYES CLOSED

THROW WITH  
YOUR EYES CLOSED

IF YOUR DART LANDS ON AN EVEN NUMBER,  
ADD 6 TO YOUR SCORE. IF IT LANDS ON AN ODD  
NUMBER, ADD 7

IF YOUR DART LANDS ON AN EVEN NUMBER,  
ADD 6 TO YOUR SCORE. IF IT LANDS ON AN ODD  
NUMBER, ADD 7

MOVE DART 5 WEDGES IN EITHER DIRECTION  
FROM WHERE IT LANDS

MOVE DART 5 WEDGES IN EITHER DIRECTION  
FROM WHERE IT LANDS