Dice Mean Machine

Objectives:

Students will calculate measures of central tendency (mean, median, mode, range).

Materials:

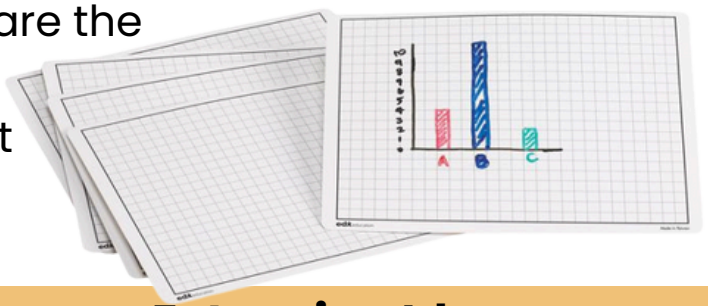
- 5 dice per student or group, 6 or 10-sided
- Paper and pencil

Directions:

1. Roll 5 dice and record the numbers.
2. Find the mean, median, mode, and range of the numbers.
3. Repeat 3 rounds and compare the data sets.
4. Discuss which measure best represents each data set.

Helpful Addition!

Write-On/Wipe-Off Graphing Mats



Support Suggestions:

- Provide step-by-step examples to find each one.
- Use calculators for mean.

Extension Ideas:

- Create a graph of results.
- Change the number of dice or use different-sided dice.
- Introduce outliers and discuss their impact on the mean.

Order of Operations Showdown

Objectives:

Students will practice the order of operations (PEMDAS) using random numbers.

Materials:

- 4 dice per student or pair
- Whiteboard or paper

Directions:

1. Roll 4 dice and write the numbers in order.
2. Create a math expression using all four numbers and at least two operations.
3. Solve the expression using proper order of operations.
4. Share with a partner and check each other's work.

Support Suggestions:

- Color code the operations when solving.
- Use parentheses to group operations clearly.
- Review PEMDAS steps together first.
- Provide an Order of operations anchor chart.

Extension Ideas:

- Add exponents (roll twice to determine base and exponent).
- Create expressions with target numbers (e.g., make 24).
- Turn it into a team challenge with points.

Probability Roll & Record

Objectives:

Students will explore theoretical and experimental probability.

Materials:

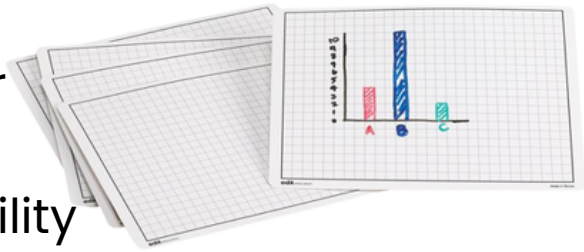
- 1 six-sided die per student
- Probability recording sheet

Directions:

1. Predict the probability of rolling each number (1–6).
2. Roll the die 30 times, recording the outcome each time.
3. Create a frequency table or bar graph.
4. Compare experimental probability with theoretical probability.

Helpful Addition!

Write-On/Wipe-Off Graphing Mats



Support Suggestions:

- Use tally charts for tracking rolls.
- Review basic probability concepts beforehand.
- Provide example graphs or templates.

Extension Ideas:

- Use two dice and explore all sums' probabilities.
- Predict which outcome will appear most often. Compare to actual results.
- Explore compound probability using two different colored dice.

Integer War

Objectives:

Students will explore adding and subtracting integers.

Materials:

- 16 or 10-sided die per pair
- 2 Two-Color Counters
- Handmade Spinner with + and - (circle drawn on paper, pencil, paper clip)
- Number Line –10 to 10

Directions:

1. Players begin with their counters at zero (one of each color).
2. Take turns rolling the die and spinning the spinner.
3. Move your piece the number of spaces on the die in the direction of the spinner (positive negative).
4. Record the equation.
5. The first player to reach 10 wins.

Helpful Addition!

Integer Beaded Number Line Set

Support Suggestions:

- Use integer beaded number lines.

Extension Ideas:

- Without a number line, equations only, roll two dice and use the sum or make a 2-digit number.

Dicey Slope

Objectives:

Students practice slope in a fun and interactive way using dice.

Materials:

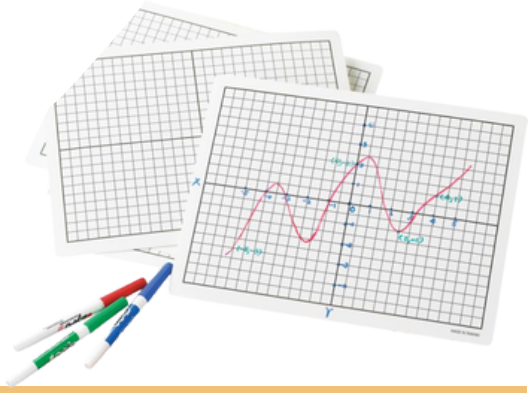
- 4 die per student or pair
- Graph paper or coordinate grid

Directions:

1. Players roll dice to generate numbers.
2. Use the rolled numbers to create two ordered pairs (x, y).
3. Players can choose to make the numbers positive or negative (e.g., using a coin flip or +/- spinner for sign determination).
4. Use the two coordinate pairs to calculate the slope of the line using the slope formula: $m = (y_2 - y_1) / (x_2 - x_1)$.
5. Graph the line on a coordinate plane to visualize the slope.

Helpful Addition!

Write-On/Wipe-Off Coordinate Mats



Extension Ideas:

- Players can roll dice to determine a point (x_1, y_1) and the slope (m) and then plug these values into the point-slope form of a linear equation: $y - y_1 = m (x - x_1)$. After finding the slope and a point, students can convert the equation to slope-intercept form ($y = mx + b$) to identify the y-intercept.

Didax

Probability Recording Sheet

Roll	Tally
1	
2	
3	
4	
5	
6