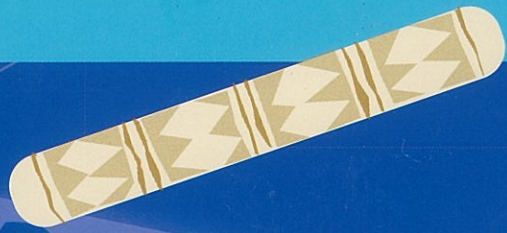
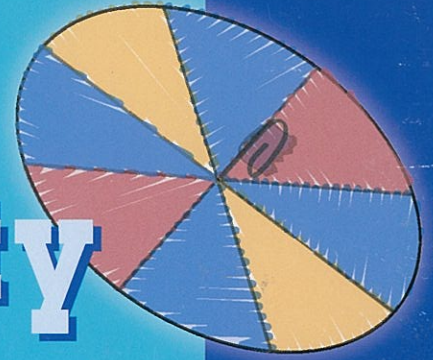




In All Probability

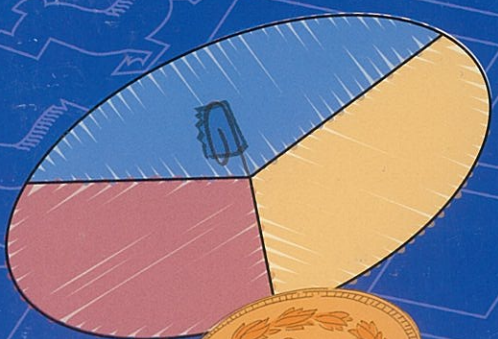
*Investigations in
Probability and Data Analysis*

GEMS Teacher's Guide® for Grades 3-5



Double Dice Derby

GAME BOARD



Activity 1

Session 1: Introducing Data

■ What You Need

- chart paper, plain (approximately 26 x 38 inches)
- chart paper, square grids (approximately 26 x 38 inches)
- markers
- pennies

For each student

- 1 penny
- math journal

Optional:

- hand lens for each student or pair

Session 2: Penny Flip

■ What You Need

- graph of pennies organized by year minted (made in Session 1)
- sticky notes (2 distinct colors, 2.5 by 2.5 inches square)
- 11 Index cards, 3 x 5 inches
- small clear container
- extra pennies

For each student:

- 1 penny
- math journal

Session 3: Making "Cents" (Sense) of the Penny Data

■ What You Need

- graph of the results of the Penny Flip
- centimeter (cm) grid paper (8.5 x 11 inches)
- overhead transparencies and pens

For each student:

- cm grid paper
- math journal

Session 4: Graphing Heads and Tails

■ What You Need

- blank overhead transparencies and pens
- centimeter (cm) grid transparencies (from Session 3)
- (optional) cm grid paper

Session 5: Introducing Theoretical Probability

■ What You Need

- chart paper, plain (26 x 38 inches)
- pens

Optional

- book, *Cloudy with a Chance of Meatballs*
- string (non-stretchable)

For each student

- math journals

Activity 2

Session 1: Ready, Set, Spin!

■ What You Need

- cardstock, white
- overhead transparencies
- chart paper with grids
- paper clips
- tape
- crayons or pens—1 each red, yellow, blue

For each pair of students:

- Track Meet board
- 3 markers for track meet—1 each red, yellow, blue
- 2 Track Meet data sheets
- 2 spinners
- crayons—1 each red, yellow, blue

For each student:

- homework sheet, page 59

Session 2: What's the Real Spin on the Spinners?

■ What You Need

- grid chart paper with 1-inch squares
- scissors
- tape
- string

For each student:

- scissors

Session 3: Spinner Investigation: Fair or Not Fair?

■ What You Need

- cardstock, white
- overhead transparencies
- chart paper with 1-inch grid
- paper clips
- tape
- crayons and pens
- 1 copy of Spinner C

For each pair of students:

- Track Meet Rematch board
- markers—1 each yellow, blue, red, green
- crayons—1 each yellow, blue, red, green
- Track Meet Rematch data sheet
- 2 copies of Spinner C (one for each student)
- 2 copies of *Fair or Not Fair* Assessment (one for each student)

Activity 3

Session 1: Roll of a Die

■ What You Need

Materials:

- cardstock
- overhead transparencies
- overhead pens
- 1 die
- 6 markers (beans, cm cubes, plastic circles)
- chart paper with 1-inch grids
- pens, 2 different dark colors

For each pair of students:

- 1 die
- 1 Horse Race board
- 6 markers (beans, cm cubes, plastic circles)

For each student:

- math journal

Optional:

- 1 giant-sized pair of standard dice

Session 2: Off to the Races!

■ What You Need

Materials:

- cardstock
- paper
- overhead transparencies
- overhead pens
- 12 markers (beans, cm cubes, plastic circles)
- 2 dice
- chart paper with 1-inch grids
- pens, 2 different dark colors

For each pair of students:

- 2 dice
- 1 Double Dice Derby board
- 12 markers (beans, cm cubes, plastic circles)

For each student:

- math journal

Optional:

- 1 giant-sized pair of standard dice

Session 3: Keeping Track

■ What You Need

Materials:

- overhead transparencies
- overhead pens
- pens, 2 different dark colors
- chart paper or sentence strips

For each student:

- 1 copy of Keeping Track data sheet
- math journal

Activity 4

■ What You Need

For the class:

- 8 tongue depressors or craft sticks $\frac{3}{4}$ -inch wide by 6 inches long
- 10 counters
- colored markers
- chart paper

For the each student:

- 4 tongue depressors or craft sticks $\frac{3}{4}$ -inch wide by 6 inches long
- 10 counters, plus some for homework
- math journal