

Lesson Plans
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PROBABILITY STANDARD (NCTM- Grade 3)

Day 1

1. Discuss the language used when speaking of “chance” events. (“impossible”, “unlikely”, “equal”, “likely”, and “certain”)
2. Have students work in groups to come up with events that would match each category.

Day 2

1. Use activity “Which Bag is Which?” from NCTM PRE K-2 pages 70-72. From samples of colored cubes drawn from bags, students will predict the most likely color(s) of cubes in the bags.
2. In three paper bags, place 10 colored cubes as follows:
 1. BAG 1: 8 yellow cubes and 2 blue cubes
 2. BAG 2: 5 yellow cubes and 5 blue cubes
 3. BAG 3: 2 yellow cubes and 8 blue cubes
3. Students will make predictions from samples, compare events to tell which is most likely, and relate past events to future events using the activities noted from the text.

Day 3

1. Introduce spinners using teacher’s math text (Helpful source: Harcourt Math 2002, pages 270-278). Stress that spinners that contain the most of one color are more likely to be landed on.
2. As a whole class, do activity “Spin It” (NCTM PreK-2) on p. 67-69, and p. 93. Students will choose a portion of the spinner, red or blue, and play against the teacher.
3. Students will divide into pairs to play this game against one another.
4. Using Spinner 2, play the same game with a partner.
5. Bring the children together to compare results of each game.

Day 4

1. Begin with activity “Spinning to Win” in Everyday Math (Use Master Worksheet on p. 182/ Lesson 11.5). Students will work in groups of four and will need the following materials: 40 counters, a pencil, a paper clip, and worksheet.
2. The first time the game is played, keep track of only where the spinner lands, and not the value the worksheet states. After 12 spins, determine where the spinner is most likely to land.
3. Now play the game as noted on the worksheet with values for each section of the spinner.
4. Discuss fair/unfair possibilities.
5. As part of a “learning opportunity” for this day, students will work with a partner to design 2 spinners, one of which is fair and the other unfair.

Day 5

1. Play Activity “A Fair Game?” found in Everyday Math, Gr. 3, Master worksheet p. 357.
2. Students will keep a tally of wins and losses.
3. Play the game “Paper, Rock, and Scissors” with a little variation using 3 players. This is found in Investigation 2: Fair and Unfair Games, pp. 48-49).

Day 6

1. Do activity “Dressing for the Party” (Everyday Math p. 606, Everyday Math Student Journal pages 188-189, and Everyday Math Masters p. 129). Students will use the pants/socks worksheet and color it according to directions.
2. Students will try to make all possible combinations of pants and socks.
3. Discuss with students the probability of certain combinations of pants and socks.
4. List all possible outcomes in the form of a list.

Day 7

Do “Roll a Die” activity taken from In All Probability, LHS Gems, Gr. 3-6, pages 37-40.

Day 8

Do “Horse Race” Activity found in In All Probability, LHS Gems, Gr. 3-6, pages 45-53.

Day 9

Play Roller Derby Game. (Investigation 5, using pages 42-48C and worksheet p. 94, Blackline Masters, “How Likely Is It?”, Dale Seymour Publications)

Day 10

Penny Flip Assessment (See “product” and “task description” areas on page 3.)

PERFORMANCE PACKAGE TASK 1

(Title of Package)

Content Standard: Probability (NCTM Grade 3)

Level:Partial

Specific Statement(s) from the Standard:

Understand and apply basic concepts of probability.

- Describe events as likely or unlikely and discuss the degree of likelihood using such words as *certain, equally likely, and impossible*.
- Predict the probability of outcomes of simple experiments and test the predictions.

Product(s):

Students will create a paper showing the results of a coin toss using the “Penny Flip” activity (Source: In All Probability, LHS Gems, Gr. 3-6, pages 7-16). A sample space including all possible outcomes will be listed, as well as the probability of heads or tails occurring from their experiment.

Task Description:

1. You will make predictions as to how many heads or tails you will get from 20 tosses of one penny.
2. You will list all possible outcomes.
3. You will flip your penny 20 times and tally your results on worksheet 16.
4. You will give two true statements from your data using notebook paper.
5. You will compare your actual results to your predictions in a written report using notebook paper.
6. You will figure out the probability of getting heads or tails out of 20 penny flips.

Special Notes:

Materials needed for assessment:

1. Record predictions and results on worksheet p. 16 , Activity 1, “Penny Flip”, In All Probability, LHS Gems, Gr. 3-6
2. Penny needed for each student.
3. Students should be spread out in the classroom, if possible, and flip on a carpeted surface.

PERFORMANCE PACKAGE TASK 1

(Title of Package)

FEEDBACK CHECKLIST FOR TASK 1

The purpose of the checklist is to provide feedback to the student about his/her work relative to the content standard. Have the standard available for reference.

Y=Yes
N=Needs Improvement

<u>Student</u>		<u>Teacher</u>
_____	You made your prediction as to how many heads or tails appeared out of 20 flips.	_____
_____	You listed all possible outcomes.	_____
_____	You flipped your penny 20 times and recorded your results. _____	
_____	You have written two true statements from your data. _____	
_____	You have compared your actual results to your predictions _____ in a written report.	
_____	You understand what an equally likely probability is.	_____

Overall Comments (information about student progress, quality of the work, next steps for teacher and student, needed adjustments in the teaching and learning processes, and problems to be addressed):