

STEM Collaborative Cataloging Project  
**Probability Lesson Plan**

**Context** (InTASC 1,2,3)

**Lesson Plan Created By:** Mrs. Jaimee Eken

**Created:**

**Lesson Topic:** Probability

**Grade Level:** Third

**Duration:** 40 minutes

**Kit Contents:** [http://odin-primo.hosted.exlibrisgroup.com/nmy:nmy\\_all:ODIN\\_ALEPH007373238](http://odin-primo.hosted.exlibrisgroup.com/nmy:nmy_all:ODIN_ALEPH007373238)

**Desired Results** (InTASC 4)

**Purpose:** Practice statistics and probability in small group, hands-on centers. Students will need to learn these skills in order to make good decisions with life skills.

**North Dakota Mathematics Content Standards:**

- Operations and Algebraic Thinking: Represent and solve problems involving multiplication and division.
  - QA.3 (Grade 3) Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

**North Dakota English Language Arts & Literacy Content Standards:**

- Reading Standards for Informational Text Standards: Key Ideas and Details
  - RI.1 (Grade 3) Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

**Objectives:**

- TSWBAT define probability.
- TSWBAT understand the difference between impossible, unlikely, even chance, likely, and certain.
- TSWBAT collect data along with organizing, representing and interpreting it.
- TSWBAT construct a tree diagram.

**Assessment Evidence** (InTASC 6)

**Evidence of meeting desired results:** Evaluate students' recording sheet.

**Learning Plan** (InTASC 4,5,7,8)

**Instructional Strategy: (Check all that apply)**

Direct  Indirect  Independent  Experiential  Interactive

**Technology Use(s): (Check all that apply)**

Student Interaction  Align Goals  Differentiate Instruction  Enhance Lesson

Collect Data  N/A

**Hook and Hold:**

- As a class read the book *That's A Possibility!* By Bruce Goldstone. This is a longer book filled with a lot of information. The teacher may want to pick out sections that pertain to the objectives (pages 2-17). Ask probing questions to check for students' understanding of probability.
- If the teacher doesn't have access to the book use this Probability song on YouTube at the following safe YouTube link: <http://safeYouTube.net/w/YQ2>
- Make a list of things that are impossible, unlikely, even chance, likely, and certain. Attached is a probability scale that can help guide students when talking about vocabulary words. Discuss the fraction, decimal and percentage on the scale.

**Materials:**

- Probability Kit
- Shape Cube
- Color Cube
- Recording Sheet (Provided)
- Math in a Nutshell Student Activity Guide pages 6-9
- Math in a Nutshell Teacher's Guide pages 4 and 5

**Procedures:**

1. Pair up students.
2. Students will find out all the different outcomes using the shape cube and color cube. The first one on the recording sheet is done. The rest need to be finished by students.
3. To find out who goes first students will roll the shape cube. The first person to roll a square starts the game.
4. Object of the game is to try and roll different pairs and stop before you get a repeat.
  - a. Roll the 2 cubes and record the color and shape of the pair you roll.
  - b. Say whether you will roll again or end your turn. If you roll again, record the pair you get. If you roll a pair that you have already rolled during this turn, your turn ends and you get zero points for the turn. You do not lose points that you earned during earlier turns. If you choose to end your turn, count the number of different pairs you rolled during this turn. Record this as your score on the score sheet.
  - c. When your turn ends, the player to your left takes a turn.
  - d. Keep taking turns until 1 player earns at least 10 points and wins the round.
  - e. Any players who had fewer turns than the winner make take one last turn. If they also reach 10 or more, they tie the round with the winner.
  - f. The player who wins 3 rounds first wins the game.
5. When you are done playing come together as a group and discuss the risk and chances they took with the game. Discuss if parts of the game were impossible, unlikely, even chance, likely, and certain.
6. Ask the students if they would play the game differently or if they took different chances or risk depending on the probability of the outcomes. This would be a great time to probe and prompt students on their knowledge of objectives. Also have them look at reflect on their recording sheet.

**Summary:** You can play a Kahoot pertaining to the objectives of probability, impossible, unlikely, even chance, likely and certain. Here is the direct link to the Kahoot: <https://goo.gl/7hpkkX>

Or a QR code:



Here is a QR code/shorten URL for students to access the Kahoo.it page for them to enter the pin:



<https://goo.gl/aaVTJL>

Students will each need an iPad or Chromebook. If your school doesn't have access to this than you can use your activeboard to project it and you can answer the questions whole group.

### **Reflection** (InTASC 9)

#### **Reflect On:**

- *Preparation*
- *Planning*
- *Teaching*
- *Student Engagement and Participation*
- *Evidence of Student Learning*

### **Standards**

Council of Chief School Officers. (2011, April) *Interstate Teacher Assessment and Support Consortium (InTASC) model core teaching standards: a resource for state dialogue*. Washington DC. Retrieved from [http://www.ccsso.org/documents/2011/intasc\\_model\\_core\\_teaching\\_standards\\_2011.pdf](http://www.ccsso.org/documents/2011/intasc_model_core_teaching_standards_2011.pdf)

North Dakota Department of Public Instruction. (2011) *North Dakota English language arts & literacy content standards*. Bismarck, ND. Retrieved from [https://www.nd.gov/dpi/uploads/87/ELA\\_JUN0811.pdf](https://www.nd.gov/dpi/uploads/87/ELA_JUN0811.pdf)

North Dakota Department of Public Instruction. (2011) *North Dakota English mathematics content standards*. Bismarck, ND. Retrieved from <https://www.nd.gov/dpi/uploads/87/math.pdf>

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