



## Bridging for Math Strength Resources

### [Standards of Learning Curriculum Framework \(SOL\)](#)

#### [Bridging Standards of Learning \(SOL\) for Grade 8](#)

**Bridging Standard of Learning (SOL) 8.11a** Compare and contrast the probability of independent and dependent event.



Student Strengths	Bridging Concepts	Standard of Learning
Students can determine the theoretical and experimental probabilities of an event.	<p>Students can describe changes in the experimental probability as the number of trials increases.</p> <p>Students can investigate and describe the difference between the probability of an event found through experiment or simulation versus the theoretical probability of that same event.</p>	Students can determine whether two events are independent or dependent. Students can compare and contrast the probability of independent and dependent events.

### Understanding the Learning Trajectory

#### **Big Ideas:**

- Probability can provide a basis for making predictions. (Charles, 2005)
- Some probabilities can be determined through experimental trials. (Charles, 2005)
- The chance of an event occurring can be described numerically by a number between 0 and 1 inclusive and used to make predictions about other events. (Charles, 2005))
- Two events are either dependent or independent. If the outcome of one event has an impact on the outcome of the other event, the events are called dependent. If events are dependent then the second event is considered only if the first event has already occurred. (VDOE Curriculum Framework)

#### **Formative Assessment:**

- [Just in Time Mathematics Quick Check 8.11a Word](#)

- [Just in Time Mathematics Quick Check 8.11a PDF](#)
- [Just in Time Mathematics Quick Check 8.11a Desmos](#)

**Important Assessment Look Fors:**

- The student can determine if two events are independent or dependent and explain their reasoning.
- The student can explain how the experimental probability changes in different scenarios (ie. if an item is replaced vs. if an item is not replaced).
- The student can compare probabilities in the form of rational numbers in order to identify which event has a higher or lower probability.

**Purposeful Questions:**

- What is the difference between an independent and dependent event?
- Why are these two events independent? Dependent? Explain your reasoning.
- How does the act of replacing or not replacing an object affect probability?

Bridging Activity to Support Standard	Instructional Tips
<p><b>Routine</b>  <a href="#">Probability Drag and Drop</a>   <a href="#">Would You Rather: Rolling Dice</a></p>	<p>The first slide of the Probability Drag and Drop could be used for a routine to practice identifying independent and dependent events. Print out the cards for students and a table like the one on the slide. Have students try to put the cards in the right column independently. Then have a whole class discussion on which cards go under which category.</p> <p>The second routine, Would You Rather, could be used the next day to create discussion around the probability piece of this standard. Project the slide and have students form their own opinions before discussing it as a class.</p>
<p><b>Rich Tasks</b>  <a href="#">Spin, Spin, Spin</a> VDOE</p>	<p><a href="#">Spin, Spin, Spin Task Template</a> - utilize the detailed implementation instructions in the template.</p>
<p><b>Games/Tech</b>  <a href="#">EVEN AND ODD GAME: Multiplication &amp; Probability</a>   <a href="#">Desmos 8.11a Independent vs. Dependent Events</a></p>	<p><a href="#">Directions</a></p> <p>In this card sort activity, students will sort probability situations as Independent or Dependent events. There are two pages to sort. At the end, students will create their own Independent and Dependent event situations.</p>
<p><b>Other Resources:</b></p> <ul style="list-style-type: none"> <li>● VDOE Mathematics Instructional Plans (MIPS) <ul style="list-style-type: none"> <li>○ <a href="#">8.11 - Probability</a> (Word) / <a href="#">PDF Version</a></li> </ul> </li> <li>● VDOE Word Wall Cards: Grade 8 (<a href="#">Word</a>)   (<a href="#">PDF</a>) <ul style="list-style-type: none"> <li>○ Probability of Independent Events</li> <li>○ Probability of Dependent Events</li> </ul> </li> <li>● VDOE Rich Mathematical Tasks: It's Your Lucky Day <ul style="list-style-type: none"> <li>○ <a href="#">8.11 It's Your Lucky Day Task Template</a> (Word) / <a href="#">PDF Version</a></li> </ul> </li> <li>● Desmos Activity <ul style="list-style-type: none"> <li>○ <a href="#">Independent vs. Dependent Probability</a></li> </ul> </li> </ul>	

**Learning Trajectory Resources:**

Charles, R. (2005). Big ideas and understandings as the foundation for elementary and middle school mathematics. *Journal of Mathematics Education Leadership*, 7(3), NCSM.

Common Core Standards Writing Team. (2019). [Progressions for the Common Core State Standards for Mathematics.](#) Tucson, AZ: Institute for Mathematics and Education, University of Arizona.

Van De Walle, J., Karp, K. S., & Bay-Williams, J. M. (2018). *Elementary and Middle School Mathematics: Teaching Developmentally.* (10th edition) New York: Pearson (2019:9780134802084)

VDOE Curriculum Framework for All Grades - [Standard of Learning Curriculum Framework \(SOL\)](#)