

Easy Lesson Plan Template¹

P = Pretest (think essential questions)

O = Objectives (measurable - see Bloom's taxonomy)

C = Catch (hook, anticipatory set, etc... use different senses, not a question)

A = Activity (procedure of what the students should do)

R = Review (how will students go over what they've learned?)

A = Assessment (formative and/or summative)

P = Posttest (same as pretest for comparison purposes)

S = Standards (Wyoming, NGSS, etc...) showcasing crosscutting concepts²

Pretest Questions	<p>1.If you roll a fair die 10 times, what is the probabily of rolling two 3's?</p> <p>2. If you roll a fair die 5 times, what is the probabily of rolling two 3's?</p> <p>3. At a certain intersection, the light for eastbound traffic is red for 15 seconds, yellow for 5 seconds, and green for 30 seconds. Find the probability that out of the next eight eastbound cars that arrive randomly at the light, exactly three will be stopped by a red light.</p>
Objectives	<p>*Students will differentiate between simple and binomial probabilities by computing probabilities of each type.</p> <p>*Students will use mathematical and computational thinking to solve problems.</p>
Catch	<p>I will use an andruino with six LEDs and a digital dice program running to catch the attention of students.</p>
Activity	<p>Students will build the andruino set-up (attached handouts) to simulate different scenarios of rolling a die. Students will record the experimental probabilities of unique problems that will lead to the binomial probability of these event.</p>
Review	<p>Each student will create a probability scenario (with success and failure). Then students will work in teams of 4 to solve each others problems.</p>
Assessments	<p>I will work with students to check for understanding and to clarify and questions or misconceptions. The posttest questions will provide an adequate exit-slip.</p>

¹ Please add/attach any handouts for this activity to the end of this template

² <http://ngss.nsta.org/CrosscuttingConceptsFull.aspx>

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<p>Posttest Questions (same as pretest questions)</p>	<p>1.If you roll a fair die 10 times, what is the probabily of rolling two 3's?</p> <p>2. If you roll a fair die 5 times, what is the probabily of rolling two 3's?</p> <p>3. At a certain intersection, the light for eastbound traffic is red for 15 seconds, yellow for 5 seconds, and green for 30 seconds. Find the probability that out of the next eight eastbound cars that arrive randomly at the light, exactly three will be stopped by a red light.</p>
<p>Standards</p>	<p>*Use permutations and combinations to compute probabilities of compound events and solve problems. *Use probability to evaluate outcomes of decisions.</p>
<p>Crosscutting Concepts from NGSS</p>	<p>Patterns Systems and System Models</p>