

Just In Time Quick Check
Standard of Learning (SOL) 3.14

Strand: Probability and Statistics

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The student will investigate and describe the concept of probability as a measurement of chance and list possible outcomes for a single event.

Grade Level Skills:

- Define probability as the measurement of chance that an event will happen.
- List all possible outcomes for a single event (e.g., heads and tails are the two possible outcomes of flipping a coin). Limit the number of outcomes to 12 or fewer.
- Describe the degree of likelihood of an outcome occurring using terms such as *impossible, unlikely, equally likely, likely, and certain*.

Just in Time Quick Check

Just in Time Quick Check Teacher Notes

Supporting Resources:

- VDOE Mathematics Instructional Plans (MIPS)
 - [3.14 - Two-Color-Counter Toss](#) (Word) / [PDF Version](#)
 - [3.14 - Probability Boxes](#) (Word) / [PDF Version](#)
- VDOE Word Wall Cards: Grade 3 ([Word](#) / [PDF](#))
 - Certain
 - Likely
 - Unlikely
 - Equally Likely

Supporting and Prerequisite SOL: [2.14](#)

SOL 3.14 - Just in Time Quick Check

1. Mark will get a prize at a school event.

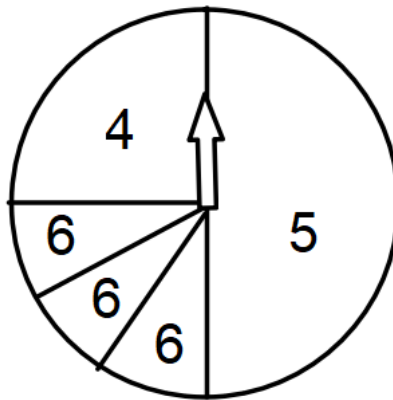
- Each prize is written on a ticket.
- Mark will pull one of these tickets from a box, without looking, to find the prize he will get.
- This chart has information about the prizes on the tickets in the box.

Prizes on the Tickets	Numbers of Tickets
Teddy Bear	22
Race Car	7
Video Game	0
Action Figure	18

a. It is unlikely, but not impossible, to pull a ticket with a _____.
Explain how you decided which prize to write in the blank.

b. It is impossible to pull a ticket with a _____. Explain how you decided which prize to write in the blank.

2. Sara will spin the arrow on this spinner one time.



a. The arrow is most likely to land on the number _____. Why is this most likely?

- b. Look at Sarah's spinner. Choose a number and write a sentence describing the chance that the arrow will land on that number. Use one or more of these words in your sentence: impossible, unlikely, or certain.

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Common Errors/Misconceptions and their Possible Indications

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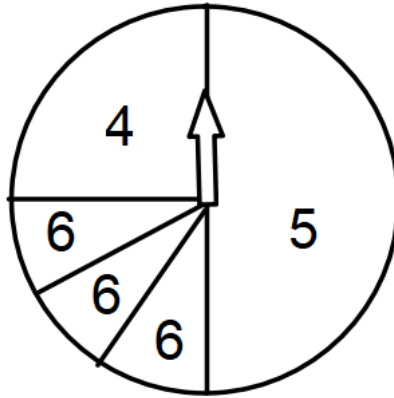
Students may choose the video game as the correct answer. The students may say that it is the least because it is zero. Students with this misconception will benefit from more experiences with data that contains zero and has them determine which is unlikely, but not impossible, versus impossible.

- b. It is impossible to pull a ticket with a _____. Explain how you decided which prize to write in the blank.

Students may have a difficult time understanding and/or using the word impossible to describe what is impossible in this problem. Because they like video games, they may have difficulty understanding that there are no tickets with "video game" listed, and therefore it is impossible to get one. Some students may think that probability is connected to a person's "luck" or view probability as certain for particular objects because they "want" that particular outcome to occur.

Give students outrageous scenarios for them to understand that impossible means that there is zero likelihood that an event will occur. Some examples might include, but are not limited to: Your teacher has a real live dinosaur for a pet. Your family's hair will all turn blue tonight. This week there will be no Wednesday.

2. Sara will spin the arrow on this spinner one time.



- a. The arrow is most likely to land on the number _____. Why is this most likely?

Some students may pick the number 6 because it is the largest number or because it is listed three times in comparison to the numbers 4 and 5 which are only listed once. These students are still making sense of probability and the possible outcomes; they are not taking into account the size of the sections which dictate the likelihood the arrow could land on a particular number. These students will need additional experiences with spinners partitioned into unequal sections. Providing students with opportunities to experiment with a variety of spinners, including some that are equally partitioned and some that are not, will help with these misconceptions.

- b. Look at Sarah's spinner. Choose a number and write a sentence describing the chance that the arrow will land on that number. Use one or more of these words in your sentence: impossible, unlikely, or certain.

Students who are unable to choose a number that is on the spinner, or not located on the spinner, and describe the probability of spinning that number need experiences to experiment and describe the results of the experiment. Classroom discussions around what is impossible, what is unlikely, and what is certain, will benefit students who are still making sense of probability. It is beneficial for students to hear their classmates' reasoning as they make statements that describe the probability of certain outcomes.