

Fair Chance Finder

Build a model, count outcomes, and find each probability.

GRADE 7 • 7.SP.C.7a

CCSS.Math.Content.7.SP.C.7a "Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class..."

NAME _____

DATE _____

EQUAL CHANCES

When each outcome has the same chance, the probability model is uniform. Count all possible outcomes, then count the outcomes that match the event. Probability = favorable outcomes / total outcomes, and you may simplify the fraction.

WORKED EXAMPLE

A jar holds 17 identical tokens. Four tokens are striped. A token is picked at random. What is the probability of picking a striped token?

1. There are 17 equally likely token outcomes.
2. There are 4 favorable outcomes, the striped tokens.
3. Probability = favorable outcomes / total outcomes = $4/17$.

Answer: $4/17$

PRACTICE 6 problems

- 1** A spinner has 8 equal sections. Three sections are green. What is the probability of landing on green?

ANSWER _____

- 2** A box holds 12 identical slips, each with a different song title. What is the probability of picking the slip labeled "Solar"?

ANSWER _____

- 3** A bag contains 10 identical game tiles. Seven tiles show a star. What is the probability of picking a star tile?

ANSWER _____

- 4** A card numbered from 1 through 7 is picked at random. What is the probability of picking a number less than 3?

ANSWER _____

- 5** A media club randomly selects 1 of 18 photos for its homepage. Three photos show a city skyline. What is the probability that the selected photo shows a city skyline?

ANSWER _____

- 6** A standard six-sided number cube is rolled. What is the probability of rolling a number less than 3?

ANSWER _____

APPLY IT Show your work

- 1** A digital art showcase will randomly display 1 of 24 student projects. Nine projects include animation. What is the probability that the displayed project includes animation?

WORK SPACE

ANSWER _____

- 2** At a lunch-time game club, 21 students enter a random drawing to test a new game. Seven of the students say strategy games are their favorite genre. What is the probability that the selected student prefers strategy games?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A contest app randomly displays one badge from equal-sized sections on a screen. The probability of seeing a music badge is $\frac{1}{3}$. If 6 sections show music badges, how many sections are on the screen in all? What is the probability of not seeing a music badge? Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A spinner has 8 equal sections. Three sections are green. What is the probability of landing on green?	3/8
2	A box holds 12 identical slips, each with a different song title. What is the probability of picking the slip labeled "Solar"?	1/12
3	A bag contains 10 identical game tiles. Seven tiles show a star. What is the probability of picking a star tile?	7/10
4	A card numbered from 1 through 7 is picked at random. What is the probability of picking a number less than 3?	2/7
5	A media club randomly selects 1 of 18 photos for its homepage. Three photos show a city skyline. What is the probability that the selected photo shows a city skyline?	1/6
6	A standard six-sided number cube is rolled. What is the probability of rolling a number less than 3?	1/3

PART 2 • APPLY IT

1. **3/8** There are 24 equally likely projects and 9 favorable animation projects. Write $9/24$ and simplify it to $3/8$.
2. **1/3** There are 21 equally likely students and 7 favorable students. Write $7/21$ and simplify it to $1/3$.

CHALLENGE

18 sections in all; 2/3. Since 6 is 1/3 of the total, the total is 18. The 12 non-music sections give a probability of $12/18 = 2/3$.

Accept equivalent fractions, such as $9/24$ for $3/8$ and $7/21$ for $1/3$. For the challenge, require both results and reasoning that connects 6 music sections to one third of 18 total sections.