LESSON MAKER PRO

# 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

A contest app randomly displays one badge from equal-sized sections on a screen. The probability of seeing a music badge is 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.

WORK SPACE AND ANSWER

ANSWER KEY

# Fair Chance Finder

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## 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.**

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.