



Probability models

GRADE 7 MATH

Name _____

Date _____

Work in order. Two dice are rolled and the totals recorded. Count the WAYS before writing a probability.
One skill: **probability models**.

WORKED EXAMPLE

Build the model from the **equally likely** outcomes. For two dice those are the **36 pairs**, not the 11 totals. Count how many pairs give each total, and divide by 36. Then compare the model with data, judging discrepancies by their **size**.

1. How many ways can two dice total 3?

FLUENCY

Show your thinking

Answer

2. How many ways can two dice total 6?

FLUENCY

Show your thinking

Answer

3. How many ways can two dice total 12?

FLUENCY

Show your thinking

Answer

4. Find $P(\text{total } 6)$.

APPLICATION

Show your thinking

Answer

5. Find $P(\text{total } 12)$.

APPLICATION

Show your thinking

Answer

6. Add up the ways for every total from 2 to 12. What should you get, and why?

REASONING

Show your thinking

Answer

7. How many 7s would you expect in 72 rolls of two dice?

APPLICATION

Show your thinking

Answer

8. How many 2s would you expect in 72 rolls?

APPLICATION

Show your thinking

Answer

9. A student says “there are 11 possible totals, so each has probability $\frac{1}{11}$.”
Use your answers to show this is wrong, and explain what they should have counted.

REASONING

Show your thinking

Answer