Coin Flip: Is It Fair?

Name _____ Date _____

Probability · Grades 3–5

Work out what should happen, then compare it with what really happened.

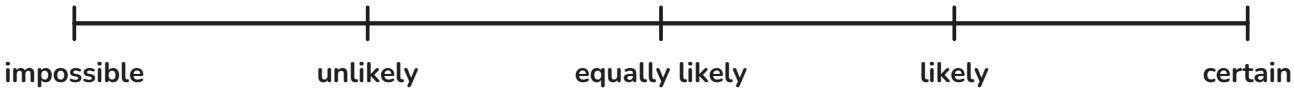
1 Predict + Record | 2 Tally | 3 Graph | **4 Is It Fair?**

A What is the chance?

A coin has _____ sides. The chance of heads is _____ out of _____ .

Write each letter above the line where its chance belongs:

a heads **b** heads or tails **c** the coin shows a 7



B What should happen?

In 30 flips you would expect about _____ heads. You got _____ heads.

How far off were you? _____ Do coins land exactly half and half every time?

_____

C Is it fair?

Maya and Leo flip one coin. Maya wins on heads. Leo wins on tails.

Is the game fair? **yes** **no** Why? _____

Challenge: now they flip two coins. Maya wins if both match. Leo wins if they are different.

Write every way two coins can land: _____ _____ _____ _____

Maya wins_____ ways out of 4. Leo wins _____ ways out of 4. Fair? **yes** **no**

Explain: _____

Try it! Flip two coins 20 times. Matching: _____ Different: _____

Coin Flip: Is It Fair? (Key)

Probability · Grades 3–5

Sheets 1 to 3 are the child's own results (the totals should add to 30).

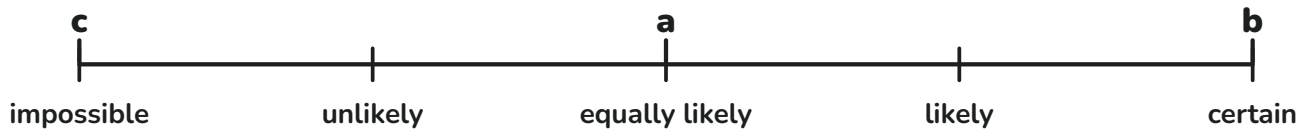
1 Predict + Record | 2 Tally | 3 Graph | **4 Is It Fair?**

A What is the chance?

A coin has **2** sides. The chance of heads is **1** out of **2**.

Write each letter above the line where its chance belongs:

a heads **b** heads or tails **c** the coin shows a 7



B What should happen?

In 30 flips you would expect about **15** heads. You got _____ heads.

How far off were you? _____ Do coins land exactly half and half every time?

Not every time: chance is about what happens over many flips.

C Is it fair?

Maya and Leo flip one coin. Maya wins on heads. Leo wins on tails.

Is the game fair? (**yes**) **no** Why? **Each has 1 out of 2 chances.**

Challenge: now they flip two coins. Maya wins if both match. Leo wins if they are different.

Write every way two coins can land: **HH** **HT** **TH** **TT**

Maya wins **2** ways out of 4. Leo wins **2** ways out of 4. Fair? (**yes**) **no**

Explain: **Fair: matching is HH or TT, different is HT or TH, 2 ways each.**

Try it! Flip two coins 20 times. Matching: _____ Different: _____