Dice: 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 All the ways two dice can land

Fill in the sum in every square.
There are 36 squares, one for each way the two dice can land.

Now count the squares for each sum.

Second die

+	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

First die

B Count the ways

Sum	2	3	4	5	6	7	8	9	10	11	12
Ways	____	____	____	____	____	____	____	____	____	____	____

The most likely sum is _____ . In 36 rolls, expect it about _____ times. You got _____ .

C Is it fair?

Pat wins on 2, 3, 4, 10, 11, 12. Lee wins on 6, 7, 8. On any other sum, roll again.

Pat says: "I have 6 sums and Lee has only 3, so I will win more."

Pat's ways to win: _____ Lee's ways to win: _____ Who will win more? _____

Is Pat right? Explain: _____

_____

Dice: Is It Fair? (Key)

Probability · Grades 3–5

Sheets 1 to 3 are the child's own results (the totals should add to 36).

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

A All the ways two dice can land

Fill in the sum in every square.
There are 36 squares, one for each way the two dice can land.

Now count the squares for each sum.

First die \ Second die	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3	4	5	6	7	8
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12

B Count the ways

Sum	2	3	4	5	6	7	8	9	10	11	12
Ways	1	2	3	4	5	6	5	4	3	2	1

The most likely sum is **7** . In 36 rolls, expect it about **6** times. You got _____ .

C Is it fair?

Pat wins on 2, 3, 4, 10, 11, 12. Lee wins on 6, 7, 8. On any other sum, roll again.

Pat says: "I have 6 sums and Lee has only 3, so I will win more."

Pat's ways to win: **12** Lee's ways to win: **16** Who will win more? **Lee**

Is Pat right? Explain: **No. Lee's sums are near 7, so they have more ways (16 to 12).**