WORKSHEET 1 *Module 21 · Lesson 21.3 · Dependent Events*

Name:		date:	

Objective: I will be able to determine whether events are dependent and calculate probabilities of dependent events using probability models and real-world situations.

Section A · Key Ideas — Fill in the Blanks

Complete each sentence using the words in the box below. *[2 marks each]*

Word Bank:	sample space	smaller	first	dependent	without replacement

1. Two events are _____ if the outcome of the first event affects the probability of the second event.

2. When you draw a marble and do NOT put it back, this is called drawing _____ .

3. After the first marble is drawn, the total number of marbles becomes _____ .

4. The set of all possible outcomes is called the _____ .

5. In dependent events, the outcome of the _____ draw changes the probability of the next draw.

Section B · Dependent or Independent?

For each situation, circle the correct answer and give a brief reason. *[2 marks each]*

Q1 You roll a die and then flip a coin. Circle: DEPENDENT / INDEPENDENT

Reason: _____

Q2 You draw a card from a deck and do not replace it, then draw a second card.
Circle: DEPENDENT / INDEPENDENT

Reason: _____

Q3 You pick a name from a hat and do not put it back, then pick again.

Circle: DEPENDENT / INDEPENDENT

Reason: _____

Reflection

Tick the success criteria you have achieved today:

- ☐ I can explain what dependent events are in my own words.
- ☐ I can identify whether two events are dependent or independent.
- ☐ I can recognise when the sample space changes after a draw.

LIVEWORKSHEETS

WORKSHEET 2

Module 21 · Lesson 21.3 · Dependent Events

Name:		date:	

Section C · Spot the Change in Sample Space

A bag contains 4 RED marbles and 3 BLUE marbles (7 marbles total). *[6 marks]*
Complete the table to show how the sample space changes.

Situation	Total marbles left	Red marbles left	Blue marbles left
Before any draw	7	4	3
After drawing 1 RED (no replacement)	____	____	____
After drawing 1 BLUE (no replacement)	____	____	____

Section D · First Probability Steps

Use the bag from Section C (4 Red, 3 Blue — 7 total) to answer these.

Q1 What is P(Red) for the FIRST draw? *[2 marks]* *Hint: How many red? How many total?*

Q2 If the first draw was RED (and not replaced), how many marbles are left in total? *[2 marks]*

Q3 After drawing a RED first, what is P(Blue) for the SECOND draw? *[2 marks]*
Hint: Blue marbles ÷ marbles remaining

Reflection

- ☐ I can identify dependent events and explain why they are dependent.
- ☐ I can complete a probability table and verify it sums to 1.
- ☐ I can solve real-world dependent probability problems.

LIVEWORKSHEETS

WORKSHEET 3 *Module 21 · Lesson 21.3 · Dependent Events*

Name:		Date:	

Objective: I will be able to determine whether events are dependent and calculate probabilities of dependent events using probability models and real-world situations.

Section A · Guided Calculations

Q1 A bag has 5 red and 3 blue counters (8 total). Two counters are drawn without replacement. Find P(red, then blue). *[4 marks]*

Q2 A box has 6 milk chocolate (M) and 4 dark chocolate (D) sweets (10 total). Two are chosen without replacement. Find P(M, then M). and P(D then S) *[4 marks]*

Q3 A jar contains 3 orange (O) and 2 purple (P) marbles. Two are drawn without replacement.
Complete the table below. The first row has been done for you.

Outcome	P(1st draw)	P(2nd draw | 1st)	P(Outcome)	Check ✓
O then O	3/5	2/4 = 1/2	**3/5 × 1/2 = 3/10 ✓**	✓
O then P	3/5			
P then O				
P then P				
TOTAL	—	—		*= 1?*

Do your probabilities sum to 1? Show the addition:

Reflection

- ☐ I can solve multi-step real-world dependent probability problems.
- ☐ I can build and interpret probability models (tables and tree diagrams).
- ☐ I can explain my reasoning clearly using mathematical language.

LIVEWORKSHEETS