

Teacher guide: Venn diagrams and set notation

Objective: Interpret Venn diagrams and use set notation in probability.

Calculator condition: Non-calculator core; calculator optional only for checking where labelled.

Learning Cycle plan

Stage	Time	Teacher move	Evidence to collect
Connect & Check	5 min	State the objective and timeline. Retrieve sample spaces and systematic lists or a prerequisite. Diagnose a common error before modelling.	Independent written response, correction or verbal explanation.
Share	7 min	Pairs compare methods or predict a result for venn diagrams and set notation. Ask for a reason, not only an answer.	Independent written response, correction or verbal explanation.
Present	10 min	Place overlaps first and account for outcomes outside the sets	Independent written response, correction or verbal explanation.
Apply	25 min	Complete a diagram and distinguish union from intersection Use guided support, then remove it for independent working.	Independent written response, correction or verbal explanation.
Recall & Review	8 min	Revisit the objective. Learners solve a fresh item without prompts, explain a check, correct one error and record the next practice.	Independent written response, correction or verbal explanation.

Differentiation

- All learners reach the same objective; route choice changes the journey, not the standard.
- Use visual, method and explanation routes to support access.
- Remove prompts before exit evidence.
- Use stretch and deep challenge only after the core method is secure.

Assessment response

- Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.

Recall & Review: feedback and extension integration

Lesson L051: Venn diagrams and set notation

Objective: Interpret Venn diagrams and use set notation in probability.

Timing for a 60-minute lesson

0-7 Connect & Check; 7-14 Share; 14-25 Present/model; 25-44 Apply route choice/practice; 44-52 independent exam-style check; 52-60 Recall & Review, WWW/EBI and next step.

Recall & Review evidence

At the end of the lesson, solve a fresh question without prompts, explain one check, correct one error and record the next practice step.

What Went Well (WWW)

I represented the outcomes systematically, used the correct probability rule and checked that the probabilities or frequencies were consistent.

Even Better If (EBI)

I will show the sample space, branch or set reasoning explicitly, state any dependence or condition and check totals before giving the final probability.

Integrated stretch and deep challenge

Stretch: Of 50 learners, 24 study art, 22 music and 8 both. Find how many study exactly one.

Deep challenge: If $P(A)=0.6$, $P(B)=0.5$ and $P(A \cap B)=0.2$, find $P(\text{neither})$.

Teacher use

Use the What Went Well (WWW) and Even Better If (EBI) prompts to write mathematics-specific feedback linked to the objective. Do not accept generic praise: identify the method, representation, reasoning or checking step that improved, then set a fresh next-step question.

Assessment evidence to inspect: Check the formative mini-test and independent workbook response against the objective. Use the teacher answers or mark guidance; group errors for reteaching. NC/C selected to purpose; label each question.