Cross-sectional vs longitudinal research design cheat sheet

The three developmental designs

Design	Who is measured	When	Main weakness
Cross-sectional	Different age groups	Once, at the same time	Cohort effects
Longitudinal	The same people	Repeatedly, often for years	Attrition, practice effects, time
Cross-sequential	Several age groups	Each group retested over time	Complex and still slow

The APA Dictionary of Psychology calls the cross-sequential design a cohort-sequential design.

Spot the design: five checks

1. Same people measured more than once? Longitudinal. Clue words: "followed," "retested," "each year from age 6 to 9."
2. Different groups measured once, at the same time? Cross-sectional. Clue words: "in a single month," "separate samples," "during the same year."
3. Several age groups, each retested over time? Cross-sequential.
4. A variable manipulated and participants randomly assigned? Experiment. Age can't be assigned, so an age comparison is not a true experiment.
5. One age compared across different years? Time-lag design. Often a wrong option.

Key terms

- Cohort: people born around the same time who share historical and cultural experiences.
- Cohort effect: a difference between groups caused partly by their different experiences, not by age.
- Attrition: participants leaving a study before it ends.
- Prevalence: the proportion of a population with a characteristic at one time.
- Random sampling: choosing participants so everyone in the population has a chance of selection. Not the same as random assignment.

What each design can and can't conclude

- Cross-sectional: can show differences between groups and prevalence at one time. Can't show change within a person or cause and effect.
- Longitudinal: can show stability and change within the same people. Results may apply only to that cohort.
- Correlational findings from any survey: show an association. Directionality and third variables mean they can't show cause.

Exam answer checklist

- Name the design and give the clue from the question.
- Use the actual numbers from the table, then say what the pattern shows.
- For a cross-sectional age difference, consider a cohort effect.
- Never write a causal conclusion from a survey or correlation.