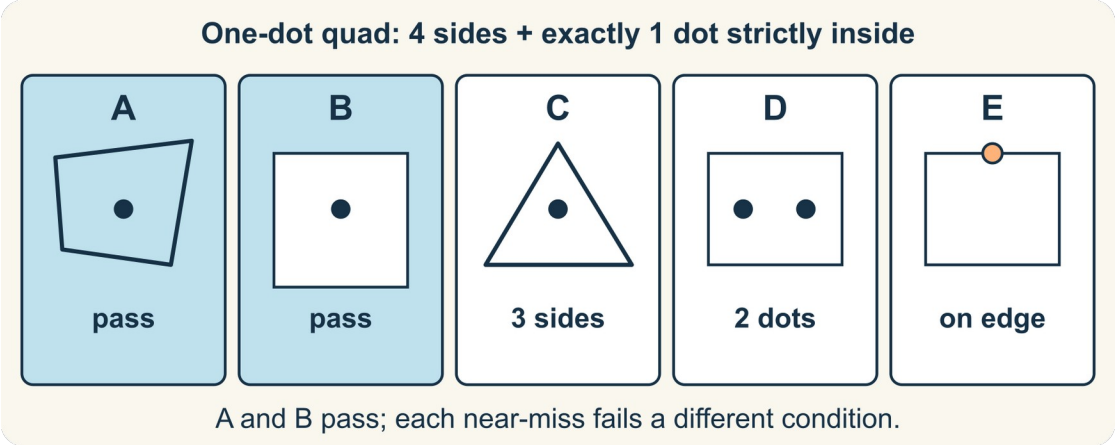
A definition that needs revising

When does an invented category become too broad or too narrow?

Invent a precise category for five supplied shape cards, including a boundary case. Your definition must tell another reader what to do.

Make | 15–25 minutes, or one comparison | Paper and a pen or pencil, The supplied model; no purchase, account or internet connection needed

Start here Call the target category "one-dot quad". Card A is an irregular quadrilateral with one dot inside; B is a square with one dot inside. These are your intended examples.



Which condition does each card fail?

1 Add three near-misses

C is a triangle with one inside dot. D is a rectangle with two inside dots. E is a rectangle with one dot centred on its top edge. These are deliberately different cases.

2 Test a broad definition

"A shape with a dot" wrongly includes C, D and E. It does not state side count, exact dot count or whether an edge counts as inside.

3 Test a narrow definition

"A square with one inside dot" keeps B but wrongly excludes intended example A. A definition can exclude something you meant to include as well as include too much.

4 Write the working definition

For this game use: "A closed four-sided shape with exactly one dot strictly inside." Apply it again: A and B pass; C, D and E do not. "Strictly inside" excludes the boundary.

A definition is a usable membership rule

All five cards and the category name are invented for this activity.

• A and B are intended members even though their side lengths and angles differ.

• The final rule requires four sides, exactly one dot and an interior position. Each requirement removes a different near-miss.

• C fails side count; D fails exact dot count; E fails the strictly-inside condition.

What this example can show This is a locally invented category, not a new official geometry term. Agreeing a rule is different from proving that a word has always meant it.

A different way

Compare only A, B and C first. Cards may be described aloud, enlarged or marked by a scribe; drawing neatness is irrelevant.

If you want to go further

Add a four-sided outline with a curved side and decide whether your use of “side” needs clarification. State any revised convention before sorting it.

Something to notice

Which single word in my definition changed a card’s membership?

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