Choose a material from evidence cards

Which stated properties matter for an invented design brief?

Select a fictional material against a clear design brief, then see what changes when an unknown becomes an essential requirement.

Investigate | 15–25 minutes, or one decision | The supplied example, read or heard, Optional scrap paper and a pen or pencil

Start here A drawing sleeve must be transparent and flexible for dry indoor use. Read the supplied cards A, B and C; their features are invented.

Which card meets the stated requirements?

Card	Transparent	Flexible	Water resistant
A	Yes	Yes	Unknown
B	Yes	No	Yes
C	No	Yes	Yes

First two required: A. All three essential: no verified option.

A requirement is different from a wish

1 Read the evidence cards

A: transparent yes, flexible yes, water resistance unknown. B: transparent yes, flexible no, water resistant yes. C: transparent no, flexible yes, water resistant yes.

2 Apply the two required criteria

For the dry-use brief, A meets both stated requirements. B fails flexibility and C fails transparency. Do not let an extra desirable property erase a required one.

3 Change the brief

Now imagine water resistance is also essential. A's unknown is not a yes, so none of the three cards is verified as meeting all requirements.

4 Explain a conditional choice

Write 'A fits the first brief on the supplied evidence'. For the changed brief, request the missing evidence or revise the design instead of guessing.

Constructed cards a dry use sleeve

The cards are invented property reports, not test results about named plastics or products. Y means yes, N no and ? unknown.

• A: transparent yes, flexible yes, water resistance unknown.

• B: yes, no, yes. C: no, yes, yes. Only A meets the first two required criteria.

• When all three become essential, no card is confirmed to meet them all.

What this example can show This table does not certify a real material, establish its safety or tell you what an unknown result would be.

A different way

Compare only A and B, or direct someone else to mark the two required columns. No real materials need testing.

If you want to go further

Add a fourth invented card with all three properties known. State its entries before deciding whether it meets the changed brief.

Something to notice

Did I treat a desirable property or an unknown as if it met a requirement?

Read or explore more

Horizon topic Material Properties

https://launchhorizonhq.com/learn/material-properties/

Horizon topic Materials Constraints

https://launchhorizonhq.com/learn/materials-constraints/

Horizon topic Design Constraints

https://launchhorizonhq.com/learn/design-constraints/

Science Learning Hub, University of Waikato Properties of materials - introduction

https://www.sciencelearn.org.nz/resources/2659-properties-of-materials-introduction

NASA 6.8 Decision Analysis

https://www.nasa.gov/reference/6-8-decision-analysis/