Texture, brightness, weight and density

VOCABULARY PRACTICE

UPPER-INTERMEDIATE | B2

Name: _____ **Date:** _____

1 Match each physical property with its meaning.

1 granular	____	a ability to resist being pulled apart
2 porous	____	b tendency to float in a fluid
3 brittle	____	c containing many small holes
4 malleable	____	d able to be shaped under pressure
5 lustrous	____	e composed of small grains
6 translucent	____	f proportion of incoming light reflected
7 buoyancy	____	g allowing some light through diffusely
8 relative density	____	h shiny because it reflects light
9 reflectance	____	i likely to break without much bending
10 tensile strength	____	j ratio of a substance's density to a reference density

2 Complete the technical collocations.

apparent | **bulk** | **compressive** | **light** | **matt** | **relative** | **surface** | **uniform**

1 _____ density of a powder bed

2 _____ density based on external volume

3 _____ strength

4 _____ reflectance

5 a _____ texture

6 transmit _____

7 _____ density compared with water

8 a _____ finish

3 Choose the most precise term for the context.

1 A material full of tiny holes is *porous* / *lustrous*.

2 A metal shaped into a sheet is *malleable* / *brittle*.

3 Frosted glass is *translucent* / *opaque*.

4 A surface that reflects strongly is *lustrous* / *granular*.

5 Resistance to pulling is *tensile strength* / *buoyancy*.

6 Floating force is related to *buoyancy* / *reflectance*.

7 Density compared with water is *relative density* / *brightness*.

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4 Complete the laboratory analysis with terms from the box.

brittle | buoyancy | lustrous | malleable | porous | reflectance | relative density | tensile strength | texture | translucent

Sample A had a granular **1** _____ and was highly **2** _____, so it absorbed liquid. It was also **3** _____ and fractured under impact. Sample B was **4** _____ and could be pressed into a thin sheet. Its **5** _____ surface had high **6** _____. Sample C was **7** _____, allowing diffuse light through. We measured **8** _____ against water, tested **9** _____ under pulling, and examined **10** _____ in a liquid.

5 Read the text and answer the questions briefly.

Why perceived brightness changes

Brightness is a visual perception, not simply a fixed physical property. It depends on the amount of light a surface emits or reflects, but also on surrounding illumination and contrast. A grey square can appear lighter against a dark background than against a white one, even though its reflectance is unchanged. Measurements of luminance describe light intensity in a given direction, whereas perceived brightness involves the observer and context.

1 Is brightness purely a fixed physical property? _____

2 What two surface processes affect it? _____

3 Which contextual factors are mentioned? _____

4 Why can one grey square appear different? _____

5 What remains unchanged in the example? _____

6 What does luminance describe? _____

6 Rewrite using the expression in capitals.

1 The material broke with almost no bending. **BRITTLE** __

2 The surface allowed diffuse light through. **TRANSLUCENT** _

3 The metal could be shaped under pressure. **MALLEABLE** _

4 The sample resisted being pulled apart. **TENSILE** ____

OVER TO YOU

Write a **120-150 word** materials evaluation for a product or structure. Analyse texture, optical properties, weight and density.

[ ] Use at least ten target terms. [ ] Separate perception from measurement. [ ] Link properties to function.

Texture, brightness, weight and density

ANSWER KEY

1 Physical properties

1 **e** 2 **c** 3 **i** 4 **d** 5 **h** 6 **g** 7 **b** 8 **j** 9 **f** 10 **a**

2 Technical collocations

1 **bulk** 2 **apparent** 3 **compressive** 4 **surface** 5 **uniform** 6 **light** 7 **relative** 8 **matt**

3 Precise terms

1 **porous** 2 **malleable** 3 **translucent** 4 **lustrous**
5 **tensile strength** 6 **buoyancy** 7 **relative density**

4 Laboratory analysis

1 **texture** 2 **porous** 3 **brittle** 4 **malleable** 5 **lustrous**
6 **reflectance** 7 **translucent** 8 **relative density** 9 **tensile strength** 10 **buoyancy**

5 Reading - suggested answers

1 No. 2 Emission and reflection. 3 Illumination and contrast. 4 Its backgrounds differ.
5 Its reflectance. 6 Light intensity in a given direction.

6 Rewriting - possible answers

1 The material was **brittle**. 2 The surface was **translucent**. 3 The metal was **malleable**. 4 The sample had high **tensile strength**.

Over to you: Answers will vary. Check technical precision, evidence and property-function links.