Science and technology

VOCABULARY PRACTICE

UPPER-INTERMEDIATE | B2

Name: _____ **Date:** _____

1 Match each research and innovation term with its meaning.

1 peer review	____	a factor offering another explanation for an observed link
2 reproducibility	____	b spread and adoption of a technology
3 correlation	____	c unequal access to digital tools and skills
4 causation	____	d early model used for testing
5 confounding variable	____	e ability to obtain consistent findings again
6 prototype	____	f relationship in which one factor produces another
7 proof of concept	____	g expert evaluation before publication
8 technological diffusion	____	h unexpected result of an action or innovation
9 unintended consequence	____	i early demonstration that an idea can work
10 digital divide	____	j statistical association without proof of cause

2 Complete the analytical collocations.

causation | **concept** | **consequence** | **divide** | **diffusion** | **review** | **prototype** | **variable**

1 undergo peer _____

2 distinguish correlation from _____

3 control a confounding _____

4 build a working _____

5 demonstrate proof of _____

6 accelerate technological _____

7 anticipate an unintended _____

8 bridge the digital _____

3 Choose the most precise term for the context.

1 Two trends move together but one may not produce the other: *correlation* / *causation*.

2 An outside factor may explain both trends: *confounder* / *prototype*.

3 Other researchers obtain the same pattern: *reproducibility* / *diffusion*.

4 Experts assess a paper before publication: *peer review* / *proof of concept*.

5 An early working model is tested: *prototype* / *digital divide*.

6 A pilot shows that an idea is feasible: *proof of concept* / *peer review*.

7 Technology adoption spreads through society: *diffusion* / *causation*.

8 A policy widens unequal access: *digital divide* / *reproducibility*.

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4 Complete the innovation evaluation with terms from the box.

causation | confounding variable | correlation | digital divide | peer review | proof of concept | prototype | reproducibility | technological diffusion | unintended consequence

The study reports a **1** _____ between app use and performance but does not establish **2** _____. Income may be a **3** _____. Independent replication will test **4** _____, and publication requires **5** _____. A working **6** _____ provides a **7** _____. Wider **8** _____ depends on affordability. Without support, the **9** _____ may widen as an **10** _____.

5 Read the text and answer the questions briefly.

A promising classroom technology

A school trialled adaptive software and reported higher quiz scores. Participation was voluntary, and students who joined already had stronger attendance. Teachers also gave the trial group extra feedback. The results were promising but could not show that the software caused the improvement. A stronger study would compare similar groups, specify outcomes in advance and examine whether effects persist after novelty fades.

1 What outcome improved? _____

2 Why might participants differ from others? _____

3 What additional support did they receive? _____

4 Why was causation uncertain? _____

5 What two design improvements are suggested? _____

6 What long-term question remains? _____

6 Rewrite using the expression in capitals.

1 The association does not prove cause. **CORRELATION** _____

2 Other teams obtained the same result. **REPRODUCIBLE** _____

3 The early model can now be tested. **PROTOTYPE** _____

4 The innovation increased inequality of access. **DIVIDE** _____

OVER TO YOU

Write a **120-150 word** evaluation of a scientific study or technological pilot. Address design, evidence, confounders, reproducibility, access and unintended effects.

[ ] Use at least ten target expressions. [ ] Do not confuse correlation with causation. [ ] Separate feasibility from effectiveness.

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ANSWER KEY

1 Research and innovation terms

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

2 Analytical collocations

1 **review** 2 **causation** 3 **variable** 4 **prototype** 5 **concept** 6 **diffusion** 7 **consequence** 8 **divide**

3 Precise terms

1 **correlation** 2 **confounder** 3 **reproducibility** 4 **peer review**
5 **prototype** 6 **proof of concept** 7 **diffusion** 8 **digital divide**

4 Innovation evaluation

1 **correlation** 2 **causation** 3 **confounding variable** 4 **reproducibility** 5 **peer review** 6 **prototype** 7 **proof of concept** 8 **technological diffusion** 9 **digital divide** 10 **unintended consequence**

5 Reading - suggested answers

1 Quiz scores. 2 Volunteers already had better attendance. 3 Extra teacher feedback. 4 Several differences could explain the result.
5 Similar comparison groups and pre-specified outcomes. 6 Whether effects persist.

6 Rewriting - possible answers

1 It is a **correlation**, not proof of cause. 2 The result was **reproducible**. 3 The **prototype** is ready for testing. 4 It widened the digital **divide**.

Over to you: Answers will vary. Check causal caution, evidence, access and unintended effects.