

Name _____

Comparisons - Small Models vs. Big Models

Large Language Models (LLMs) come in different sizes, and the size often determines how they are used. **Small models** are lightweight. They use less memory, cost less to operate, and can run directly on laptops, tablets, or even smartphones without needing the internet. Their speed and efficiency make them attractive in schools, small businesses, or areas with limited resources. However, their smaller size means they may struggle with very complex reasoning or advanced problem-solving.

Big models, on the other hand, are trained with massive amounts of data and contain billions or trillions of parameters. They are powerful enough to handle deep reasoning, generate more nuanced responses, and switch smoothly between multiple languages. They can be especially useful for scientists, global companies, or anyone who needs highly accurate and detailed answers. The drawback is that big models are expensive to run, slower in many cases, and require strong servers and large amounts of electricity.

Despite their differences, **both types of models** share important similarities. They can summarize information, write text, and assist students or professionals in many tasks. They also share a key limitation: no matter the size, they sometimes produce mistakes or confusing answers that sound convincing but are wrong.

Instructions: Complete each sentence by filling in the missing words. Use *Small Models*, *Big Models*, or *Both* as needed.

1. _____ are often cheaper to run, while _____ require much more electricity and servers.
2. Because they are trained on massive amounts of data, _____ can handle more languages with greater accuracy.
3. _____ are light enough to run on smartphones or laptops without internet access.
4. _____ sometimes give confusing or incorrect answers, so users must think critically.
5. A bakery chatbot answering simple menu questions would work best on _____, but advanced medical research explanations would require _____.
6. _____ provide highly detailed, nuanced responses, while _____ usually respond more quickly.
7. Teachers in rural schools with slow internet might prefer _____ because they are more practical.
8. Scientists needing complex reasoning and specialized knowledge would rely on _____.
9. _____ can summarize articles, help with writing, and answer everyday questions.
10. The choice between _____ and _____ depends on whether speed and cost or power and detail are more important.

