**Test Payloads for LLM Endpoints**

All endpoints are under the router prefix "/llm".

* **/llm/analyze/similarity** expects a body with both ideal\_answer and student\_answer.
* **/llm/analyze/concepts** expects a single ideal\_answer body.
* **/llm/grade** expects a

GradingRequest body with ideal\_answer and student\_answer.

* **/llm/grade/batch** expects a

BatchGradingRequest with a requests array of

GradingRequest.

**1) POST /llm/analyze/similarity**

json

{  
 "ideal\_answer": {  
 "question\_id": 1,  
 "content": "Photosynthesis is the process by which plants convert light energy into chemical energy, producing glucose and oxygen from carbon dioxide and water in the presence of chlorophyll and sunlight.",  
 "rubric": {  
 "subject": "Biology",  
 "topic": "Photosynthesis",  
 "criteria": [  
 { "name": "Definition", "description": "Correct definition of photosynthesis", "max\_points": 3, "weight": 1.0 },  
 { "name": "Inputs/Outputs", "description": "Mentions CO2, H2O, glucose, O2", "max\_points": 4, "weight": 1.0 },  
 { "name": "Energy Source", "description": "Mentions light/chlorophyll", "max\_points": 3, "weight": 1.0 }  
 ],  
 "total\_max\_points": 10,  
 "passing\_threshold": 6  
 },  
 "subject": "Biology",  
 "difficulty\_level": "beginner"  
 },  
 "student\_answer": {  
 "student\_id": 101,  
 "question\_id": 1,  
 "content": "Plants make food using sunlight. They take in carbon dioxide and water and make sugar and oxygen. Chlorophyll in leaves helps absorb light."  
 }  
}

**2) POST /llm/analyze/concepts**

json

{  
 "question\_id": 2,  
 "content": "Newton's Second Law states that the acceleration of an object is proportional to the net force acting on it and inversely proportional to its mass (F = ma).",  
 "rubric": {  
 "subject": "Physics",  
 "topic": "Newton's Laws",  
 "criteria": [  
 { "name": "Statement", "description": "States Second Law correctly", "max\_points": 4, "weight": 1.0 },  
 { "name": "Formula", "description": "Includes F = ma", "max\_points": 3, "weight": 1.0 },  
 { "name": "Implications", "description": "Explains proportionality and mass effect", "max\_points": 3, "weight": 1.0 }  
 ],  
 "total\_max\_points": 10,  
 "passing\_threshold": 6  
 },  
 "subject": "Physics",  
 "difficulty\_level": "intermediate"  
}

**3) POST /llm/grade**

json

{  
 "student\_answer": {  
 "student\_id": 201,  
 "question\_id": 3,  
 "content": "Photosynthesis lets plants use sunlight to turn water and carbon dioxide into sugar and oxygen. Chlorophyll captures the light energy."  
 },  
 "ideal\_answer": {  
 "question\_id": 3,  
 "content": "Photosynthesis converts light energy into chemical energy, producing glucose and oxygen from carbon dioxide and water using chlorophyll in chloroplasts.",  
 "rubric": {  
 "subject": "Biology",  
 "topic": "Photosynthesis",  
 "criteria": [  
 { "name": "Definition", "description": "Explains the process purpose", "max\_points": 3, "weight": 1.0 },  
 { "name": "Reactants/Products", "description": "Mentions CO2, H2O, glucose, O2", "max\_points": 4, "weight": 1.0 },  
 { "name": "Mechanism", "description": "Mentions sunlight/chlorophyll role", "max\_points": 3, "weight": 1.0 }  
 ],  
 "total\_max\_points": 10,  
 "passing\_threshold": 6  
 },  
 "subject": "Biology",  
 "difficulty\_level": "beginner"  
 },  
 "additional\_instructions": "Be strict about naming reactants and products, but allow minor wording differences."  
}

**4) POST /llm/grade/batch**

json

{  
 "requests": [  
 {  
 "student\_answer": {  
 "student\_id": 301,  
 "question\_id": 4,  
 "content": "The French Revolution began in 1789 due to inequality and financial crisis. It led to major political changes and the rise of Napoleon."  
 },  
 "ideal\_answer": {  
 "question\_id": 4,  
 "content": "The French Revolution (1789) was driven by social inequality, fiscal crisis, and Enlightenment ideas. It abolished feudal privileges, reshaped French politics, and culminated in the rise of Napoleon Bonaparte.",  
 "rubric": {  
 "subject": "History",  
 "topic": "French Revolution",  
 "criteria": [  
 { "name": "Date/Context", "description": "Mentions 1789 and broad context", "max\_points": 3, "weight": 1.0 },  
 { "name": "Causes", "description": "Identifies key causes", "max\_points": 4, "weight": 1.0 },  
 { "name": "Outcomes", "description": "Describes major outcomes", "max\_points": 3, "weight": 1.0 }  
 ],  
 "total\_max\_points": 10,  
 "passing\_threshold": 6  
 },  
 "subject": "History",  
 "difficulty\_level": "intermediate"  
 }  
 },  
 {  
 "student\_answer": {  
 "student\_id": 302,  
 "question\_id": 5,  
 "content": "In respiration, organisms use oxygen to break down glucose, releasing energy, carbon dioxide, and water."  
 },  
 "ideal\_answer": {  
 "question\_id": 5,  
 "content": "Cellular respiration is the process of oxidizing glucose with oxygen to produce ATP, carbon dioxide, and water.",  
 "rubric": {  
 "subject": "Biology",  
 "topic": "Cellular Respiration",  
 "criteria": [  
 { "name": "Definition", "description": "Defines respiration accurately", "max\_points": 3, "weight": 1.0 },  
 { "name": "Inputs/Outputs", "description": "Mentions glucose, oxygen, CO2, water, ATP", "max\_points": 4, "weight": 1.0 },  
 { "name": "Energy", "description": "Explains ATP production", "max\_points": 3, "weight": 1.0 }  
 ],  
 "total\_max\_points": 10,  
 "passing\_threshold": 6  
 },  
 "subject": "Biology",  
 "difficulty\_level": "beginner"  
 },  
 "additional\_instructions": "Emphasize ATP clarity."  
 }  
 ]  
}