

Rubric for evaluation of Project- 3D Model and Design: A project using modeling and simulation to simulate a scientific event, tech design principal or phenomenon, or animate an effect or scenario

Categories	Level 1 (50-59%)	Level 2 (60-69%)	Level 3 (70-79%)	Level 4 (80-100%)
Knowledge and Understanding- Subject-specific content acquired and the comprehension of its meaning and significance				
Knowledge of Content: Facts, terminology, definitions...)	Demonstrates limited knowledge of content	Demonstrates some knowledge of content	Demonstrates considerable knowledge of content	Demonstrates thorough knowledge of content
Understanding of content (e.g. concepts, ideas, theories, principles, procedures, processes)	Demonstrates significant misconceptions Gives explanations showing limited understanding of the concepts	Demonstrates minor misconceptions Gives partial explanations	Demonstrates no significant misconceptions Usually gives complete or nearly complete explanations	Demonstrates no misconceptions Always gives complete explanations
Thinking and Investigation- The use of critical and creative thinking skills and inquiry, research and problem-solving skills and / or processes				
Use of initiating and planning skills and strategies (e.g. formulating questions, identifying the problem, developing hypotheses)	Is able to formulate the question, identify the problem and formulate a hypothesis with limited effectiveness	Is able to formulate the question, identify the problem and formulate a hypothesis with some effectiveness	Is able to formulate the question, identify the problem and formulate a hypothesis with considerable effectiveness	Is able to formulate the question, identify the problem and formulate a hypothesis with a high degree of effectiveness
Use of processing skills and strategies (e.g. performing and recording, gathering evidence and data, observing)	Is able to design a model that is somewhat accurate and somewhat reflects the hypothesis Explanation of the model is poor and lacking details	Is able to design a model that is accurate and reflects the hypothesis Explanation of the model is sufficient with some supporting details	Is able to design a model that is refined, accurate and reflects the hypothesis Explanation of the model is good with supporting details	Is able to design a model that is very refined and reflects the hypothesis clearly Explanation of the model is excellent with lots of supporting details
Use of critical/ creative thinking processes, skills and strategies (e.g. analyzing, interpreting, problem solving, forming and justifying conclusions on the basis of evidence)	Is able to develop a model that displays little imagination A textbook or magazine type project	Is able to develop a simple model that displays simple use of available resources Creative use of material and design	Is able to develop an imaginative model that displays good use of available resources, well thought out and above ordinary approach Creative use of material and design	Is able to develop a highly original model that displays a well thought out but novel approach Shows resourcefulness, creative use of material and design and construction of project
Communication- The conveying of meaning through various forms				
Expression and organization of ideas and information (e.g. clear expression, logical organization) in oral, visual and written forms (e.g. diagrams and models)	Is able to communicate and organize ideas with limited effectiveness Is able to engage audience with limited effectiveness	Is able to communicate and organize ideas with some effectiveness Is able to engage audience with some effectiveness	Is able to communicate and organize ideas with considerable effectiveness Is able to engage audience with considerable effectiveness	Is able to communicate and organize ideas with a high degree of effectiveness Is able to engage audience with a high degree of effectiveness
Use of supplemental materials in a PowerPoint or similar presentation tool. The use of pictures, videos, etc...to enhance the understanding of the project.	Simple presentation with text only No supporting diagrams included	Simple presentation with some pictures Uses diagrams but their purpose is not clear	Presentation includes pictures with some link to the 3D model Uses charts and diagrams where appropriate and their purpose is clear	Comprehensive presentation including an abundance of pictures with a clear link to the 3D model Uses charts and diagrams in appropriate contexts and their purpose is clear
Application- The use of knowledge and skills to make connections within and between various contexts				
Transfer of knowledge and skills (e.g. concepts and processes) to unfamiliar contexts	Is able to answer few or no questions with limited effectiveness	Is able to answer some of the questions with some effectiveness	Is able to answer most or all of the questions with some explanation and detail, therefore considerable effectiveness	Is able to answer most or all of the questions with great details, explanations, examples and/ or application therefore demonstrating a high degree of effectiveness