

Interdisciplinary unit planner

Teacher(s)	Science and Visual Arts Staff	Subject group(s) and disciplines	Sciences Arts: Visual Arts		
Unit title	Communicating Nature	MYP year	3	Unit duration	13 hours of Visual Arts lessons 24 hours of science lessons

Inquiry: establishing the purpose of an interdisciplinary unit

Purpose of integration	
<p>Real world issue we are trying to address through this IDU: The interconnected development of science and art is an often-overlooked aspect of our collective development throughout history. Discoveries in science have fueled innovative methods and materials for use in the arts, and creative methods of visual communication have allowed the invisible areas of scientific discovery to be understood and passed on to the wider world. By gaining greater understanding of this connection and developing the skills to use it in practice, this IDU opens up possibilities for new scientific and creative inquires, allowing students to approach and appreciate the world around them from new perspectives.</p> <p>Disciplinary contributions to the integrated purpose:</p> <ul style="list-style-type: none"> ● In visual arts we will look at how natural forms can be visually communicated. We will look at how printmaking and observational drawing can be used to record accurate depictions of the world around us. We will also look at how natural forms that are invisible to the naked eye can be depicted through creative adaptations of observations seen through a microscope. Finally, we will look at creative interpretations of technical scientific models and how these can form the basis for innovative new visual art pieces. ● In science we will be looking at a variety of topics and considering how modelling is used in the development of scientific understanding as well as students applying their knowledge to evaluate various models of scientific phenomena. <p>Synthesis:</p> <ul style="list-style-type: none"> ● During the interdisciplinary process students will develop a shared portfolio of scientific and visual explorations. Starting from natural forms that are visible to the naked eye, observational artworks created in visual arts will inform discussions and learning on these forms in science. Further explorations of these forms in science, for example under the microscope, will then produce new material for creative endeavor in visual arts. This relationship will drill right down to DNA structures, which will inspire a 3D sculpture that communicates accurate scientific knowledge, but also allows students to depict this structure in an innovative and creative way. 	
Key concept(s)/(related concepts)	Global context (and exploration)

<p>Key Concept: Communication Related Concepts: Presentation and Models</p>	<p>Scientific and Technical Innovation (Exploration: Ingenuity)</p>	
<p>Statement of inquiry</p>		
<p>Communication through presented models supports ingenuity in Art and Science.</p>		
<p>Inquiry questions</p>		
<p>Factual: How was printmaking historically used in scientific illustration? How can I creatively communicate scientific knowledge visually? What is the structure of DNA? What are the conventions for scientific diagrams? What does “to scale” mean?</p> <p>Conceptual: How can natural forms be communicated accurately in visual media? How can scientific observations inform innovative visual art? What part did model making play in the discovery of the structure of DNA? What makes a good scientific model? Why are models useful for communicating scientific concepts?</p> <p>Debatable: Is art influenced by science or is science influenced by art? Does creative depiction hinder scientific communication? How can we best model DNA to communicate scientific understanding? Do models have to be to scale to be useful?</p>		
<p>Summative assessment—interdisciplinary performance(s) of understanding</p>		
<p>Interdisciplinary criteria</p> <p>Criterion A: Evaluating</p> <p>In order to address real-world and contextual issues and ideas, students will be able to:</p> <ul style="list-style-type: none"> • analyse disciplinary knowledge • evaluate interdisciplinary perspectives 	<p>Task(s) G.R.A.S.P.S</p> <p>Goal – Your task is to create a new sculpture and accompanying statement that effectively communicates the structure of the DNA double helix to the wider community in a new scientific exhibition. Your goal is to clearly communicate the scientific principles needed to understand the structure of DNA in a creative form that will engage audiences.</p> <p>Role – You are part of a group of scientists hired to create material for the new ‘Museum of Human Innovation and Understanding’. This will be the first such museum in the town.</p>	