

## Artistic Climate Communication – Utilising Visual Arts to Communicate Climate Data

<b>Year Level:</b>	9/10	<b>Subject:</b>	Visual Arts	<b>Topic:</b>	Artistic Communication of Data
<b>Duration:</b>	2-3 x 50 minute lessons  <b>Lesson 1 -</b> Explicit teaching focus  <b>Lesson 2/3 -</b> Student artwork focus	<b>Australian Curriculum:</b>	<p><b>Visual Arts Curriculum 9/10 Achievement Standards:</b></p> <ul style="list-style-type: none"> <li>• 2 &amp; 4</li> </ul> <p><b>Content description codes:</b></p> <ul style="list-style-type: none"> <li>• <b>AC9AVA10E01:</b> Investigate the ways that artists across cultures, times, places and/or other contexts develop personal expression in their visual arts practice to represent, communicate and/or challenge ideas, perspectives and/or meaning</li> <li>• <b>AC9AVA10D02:</b> Reflect on the way they and other visual artists respond to influences to inspire, develop and resolve choices they make in their own visual arts practice</li> </ul> <p><b>General Capabilities- Numeracy</b></p> <ul style="list-style-type: none"> <li>• Statistics and probability – interpreting and representing data</li> </ul>	<b>Climate Topic:</b>	<ul style="list-style-type: none"> <li>• Science Communication</li> <li>• Design and Analysis of Climate Data</li> </ul>

### Brief Overview

One of the key issues climate scientists face is how to communicate their data in an engaging and accessible format. Classic data visualisation outputs such as graphs and charts, don't always resonate with a general audience and rarely make an emotional connection with the viewer. Developing new techniques for communicating climate data requires the assistance of visual artists, who each bring their own unique perspectives, and skills to the table. This two to three lesson series aims to use current artists and scientists as points of inspiration for students to create their own climate data artwork. This work would fit well within a current unit focusing on a specific art technique of your choosing, such as watercolour, acrylics, drawings, collage, ect. This lesson plan incorporates numeracy elements that align well with the Australian Professional Standards for Teachers and differentiation strategies for students with literacy and numeracy barriers.

## Learning outcomes

### Learning Intention

Students will be able to develop their own artwork to communicate climate data, inspired by Ed Hawkins and Jill Pelto.

### Success Criteria

- Investigate how artists develop and use their personal expression to represent and communicate similar ideas
- Develop artwork to communicate climate data, inspired by climate artists
- Analyse climate data trends and connect these trends to visual motifs

Introduced climate science concepts:	Presumed knowledge:
<ul style="list-style-type: none"> <li>● Climate data time series</li> <li>● Temperature anomalies – changes in average temperature</li> </ul>	<ul style="list-style-type: none"> <li>● <b>AC9AVA8E01:</b> The use of artistic practices to communicate ideas, perspectives and meaning</li> <li>● <b>AC9AVA8D02:</b> Reflect on how they and other artists respond to influences to inform artist choices</li> <li>● <b>AC9M9ST03:</b> Analyse the meaning of data distributions in reference to the middle (mean, median)</li> </ul>

## Teaching resources

Tool ID	Type of Tool	Name and web link	Overview	Credits
R1	Student and Teacher Resource	<a href="#">Climate data art PowerPoint</a>	PowerPoint follows the 5Es pedagogy and provides the entire lesson structure, including speaker notes which the teacher should review prior to delivery.	Monash Climate Change Communications Research Hub
R2	Student Resource	<a href="#">Printable copy of Jill Pelto's work</a>	No access to tech devices for student inquiry? This is a printable copy of four of Jill Pelto's works and	Jill Pelto

			artist statements.	
R3	Student Resource	<a href="#">Printable copy of the climate data</a>	Printable copy of: <ul style="list-style-type: none"> <li>• Sea-surface temperature line graph and explanation</li> <li>• Wind energy uptake data and explanation</li> <li>• Fashion fibre consumption compared to population data and explanation</li> </ul>	<ul style="list-style-type: none"> <li>• Bureau of Meteorology, 2024</li> <li>• Department of Industry, Science, Energy and Resources, 2020</li> <li>• FAO/ICAC World Apparel Consumption Survey, 2013 &amp; World Fibre Reports 2011-2013</li> </ul>
R4	Student and Teacher Resource	<a href="#">Assessment Description and Marking rubric</a>	Detailed outline of artist’s statement requirements. Marking rubric aligned to achievement standard 4 of the ACARA Visual Arts Curriculum.	Monash Climate Change Communications Research Hub
R5	Student and Teacher Resource	<a href="#">Glossary of climate terms</a>	This document provides teachers with a glossary of key terms relevant to this lesson plan. It is important that students are familiar with the meaning of these terms so they can complete the class activities.	Monash Climate Change Communications Research Hub

### Lesson activities

	Teacher activities	Student Tasks	Tool ID	Time
<b>ENGAGE</b> Introduction discussion	<i>Ppt Slide 2-5</i> See, think, wonder – climate stripes image	Students can write or pair up to complete their see, think, wonder. Share in class discussion.  <i>Differentiation strategy: call on hesitant sharers to discuss the ‘see’ portion, and call on extension students for the ‘wonder’ portion.</i>	R1	2–5 mins
<b>EXPLORE</b>	<i>Ppt Slide 6-14</i>	Students are invited to complete a think, pair,	R1	10–15

<b>1- Ed Hawkins Climate Stripes</b>	Teacher to explain slides (speaker notes included in the notes section below slides) Link to explanatory video ( <a href="https://www.youtube.com/watch?v=f0zoXahqVRI">https://www.youtube.com/watch?v=f0zoXahqVRI</a> )	share at the end of the section to brainstorm how they would interpret the climate stripes given their preferred artistic medium.		mins
<b>EXPLAIN 2- Jill Pelto Climate Science Artist</b>	<i>Ppt Slide 15-21</i> Teacher to explain slides (speaker notes included in the notes section below slides) Slide number (20) could be left up on the screen when students are starting their planning phase	After the teacher-led explanation, students should spend 10 minutes exploring the gallery on Jill Pelto's website and reading the artist statements. No technology access: four of her artworks are included for printing (see R2).	R1, R2	15–20 minutes
<b>ELABORATE 3- Student Climate Data Art</b>	<i>Ppt Slide 22</i> Teacher to prepare chosen mediums for artworks. This could be built into a unit/skill you are currently working on, or allow students agency to choose.	Students develop artwork using their choice of data and create an artist's statement. They can choose from sea-surface temperature data, fashion consumption data, and wind energy data. They will need an additional lesson or two to complete this. See the task description for further parameters for the artist's statement (R4).  <i>Differentiation strategy: students struggling with numeracy barriers may wish to use the climate stripes as their data inspiration for the artwork</i>	R1, R3, R4	60–100 minutes
<b>EVALUATE 4- Student Self Assessment</b>	<i>Ppt Slides 23-24</i> Marking rubric attached Teacher can talk through the literary devices (taxonomic terms) in the rubric before handing out student copies. Teacher to talk through the student example on slide 21. The rubric is aligned to the Australian Curriculum	<b>Lesson 1-</b> Think, pair, share- students should use the rubric to assess the fake student work sample. The piece is a low at-standard grade.  <b>Lesson 2/3 -</b> Students should critically self-assess their work on the rubric before handing it in. Ideally, give students enough time to make	R1 R4	10 mins lesson 1  10 mins lesson 2/3

	and can be used as evidence of learning towards Achievement Standard 4.	changes to their artists' description post-self reflection.		
<b>Review Gallery Walk</b>	Have students leave their artwork and artist's description on their desks and move around the room assessing the work of other students.	<b>Final lesson-</b> Students to walk around the room and reflect on the work of other students and approaches to the same stimulus.		5–10 mins
<b>Extension opportunity</b>	Not a required assignment. Students interested in further extension are encouraged to view the following video and compare the use of art for activism vs art for science communication ( <a href="https://www.youtube.com/watch?v=eqMBM5M6mLU">https://www.youtube.com/watch?v=eqMBM5M6mLU</a> )	<b>Extension Task for Interested Students</b> Students write 250-350 word response to the following prompt: 'How do artists approach their work differently depending on their intended message? Use 'art for climate activism' vs 'art for science communication' to form your discussion'.		