



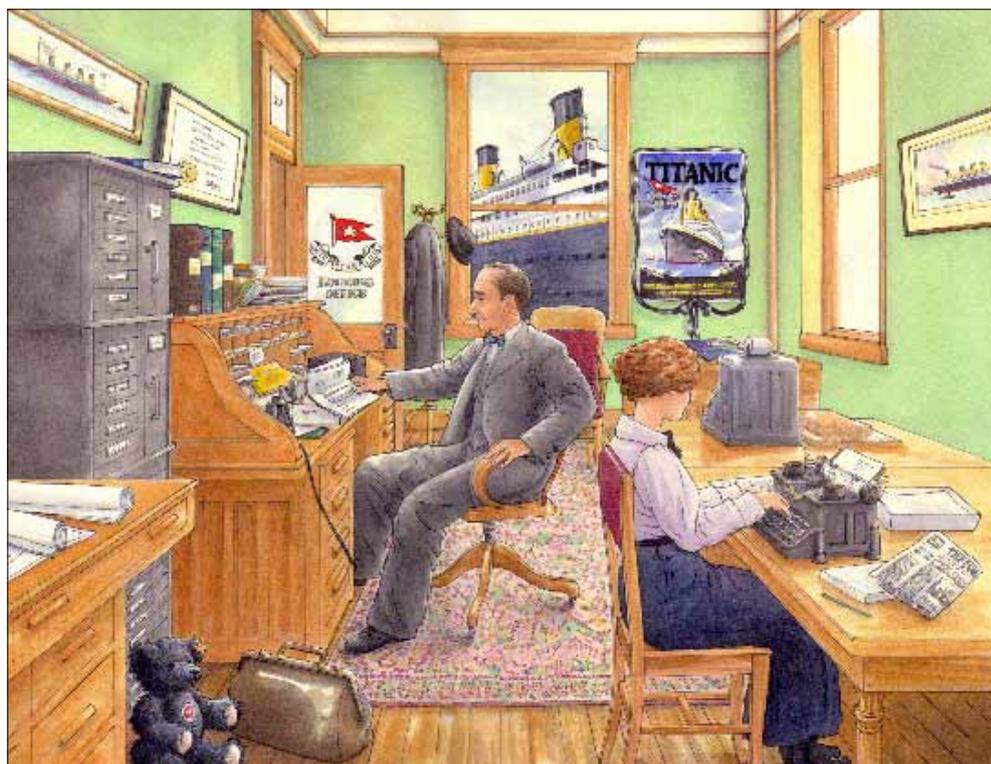
# Titanic

Minor Quest

## Skilful Causal Explanation

Scenario

When something tragic happens people are often quick to guess at the cause. This can be very dangerous. If we are to protect ourselves from further harm we must be very certain of the cause. It is vital that we are skilled at causal explanation. In 1912 Captain Smith was on the bridge of the largest man made moving object on the planet. The R.M.S. Titanic was near the leading edge of technological development and was thought to be virtually unsinkable. We all know it hit an iceberg and sank, but knowing what happened will not protect us from another disaster. Knowing why it happened is the key. Using skilful causal explanation and the original documents from 1912 can you work out why the Titanic hit the iceberg?



# PROBLEM-BASED LEARNING UNIT PLAN - SOCIAL SCIENCES



Title: Titanic

Weeks: 4

**Achievement Objective Focus** - understand that events have causes and effects.

**Thinking Skills Focus** - Skilful causal explanation.

**Scenario** - When something tragic happens people are often quick to guess at the cause. This can be very dangerous. If we are to protect ourselves from further harm we must be very certain of the cause. It is vital that we are skilled at causal explanation. In 1912 Captain Smith was on the bridge of the largest man made moving object on the planet. The R.M.S. Titanic was near the leading edge of technological development and was thought to be virtually unsinkable. We all know it hit an iceberg and sank but knowing what happened will not protect us from another disaster. Knowing why it happened is the key. Using skilful causal explanation and the original documents from 1912 can you work out why the Titanic hit the iceberg?

Learning Experiences	Learning Outcomes Students should be able to:	Organisational Notes
<p><b>1 Authenticating the Learning</b> Introduce the scenario and its problem-making links to the focus achievement objective.</p> <p><b>Awakening Prior Knowledge</b> What do we already know about this problem?</p> <p><input checked="" type="checkbox"/> Brainstorming                      <input checked="" type="checkbox"/> Discussion <input checked="" type="checkbox"/> Mindmapping</p> <p><b>Strengthening Prior Knowledge</b></p> <p><input checked="" type="checkbox"/> Front Loading Activities - view an introductory 'Titanic' DVD.</p>	<ul style="list-style-type: none"> <li>• Explain the scenario.</li> <li>• Explain why it is important to solve the problem.</li> <li>• Relate their present understanding of the scenario and its problem.</li> <li>• List all the possible causes of the Titanic hitting the iceberg.</li> </ul>	<ul style="list-style-type: none"> <li>• Check data projector.</li> <li>• Book a computer pod.</li> <li>• Familiarise self with graphic organiser.</li> <li>• Familiarise self with Quest CD. Which parts of the original documents are useful and which are not.</li> <li>• Choose from the school's library of 'Titanic' DVDs.</li> <li>• DVDs that assist in introducing causal chains include:-</li> </ul>
<p><b>2 Constructing Relevant Questions</b> Clarifying the problem found in the scenario.</p>	<ul style="list-style-type: none"> <li>• List the key questions they need to answer in order to complete the Quest.</li> <li>• Explain the steps in skilful causal explanation.</li> </ul>	<p>'Seconds from Disaster'</p> <ul style="list-style-type: none"> <li>- Space Shuttle Explosion</li> <li>- Columbia's Last Flight</li> </ul> <p>'Deadly Design'</p> <ul style="list-style-type: none"> <li>- Shopping Mall collapse in Korea.</li> </ul>
<p><b>3 Planning the Research</b> Developing a plan of action.</p>	<ul style="list-style-type: none"> <li>• Explain the plan of action.</li> </ul>	
<p><b>4 Discovering Relevant Information</b> Locating and selecting.</p> <p><input type="checkbox"/> teleconference                      <input type="checkbox"/> fax exchange <input type="checkbox"/> e-mail exchange                      <input type="checkbox"/> bookmarked www sites <input type="checkbox"/> intranet site                              <input checked="" type="checkbox"/> school library books <input checked="" type="checkbox"/> National Library books                      <input type="checkbox"/> magazines <input checked="" type="checkbox"/> DVDs, videos                              <input checked="" type="checkbox"/> Internet search <input type="checkbox"/> articles, magazines                      <input type="checkbox"/> school journals <input type="checkbox"/> visitor                                      <input type="checkbox"/> EOTC experience <input checked="" type="checkbox"/> pictures, posters                              <input type="checkbox"/> interviews, surveys <input type="checkbox"/> found objects                              <input type="checkbox"/> software, CD ROMs <input checked="" type="checkbox"/> thinking tools                              <input type="checkbox"/> demonstration <input checked="" type="checkbox"/> Quest CD                                      <input checked="" type="checkbox"/> learning conversations</p> <p><input checked="" type="checkbox"/> Teacher directed activities – use attached graphic organiser.</p>	<ul style="list-style-type: none"> <li>• List the actual evidence available for each of the possible causes (graphic organiser).</li> </ul>	
<p><b>5 Constructing the Knowledge</b> Forming and applying.</p> <p><input type="checkbox"/> Teacher directed activities</p>	<ul style="list-style-type: none"> <li>• Organise the data collected during their investigation.</li> <li>• Explain the most likely causes.</li> </ul>	<p style="text-align: center;"><b>Assessment</b></p> <ul style="list-style-type: none"> <li>• Students complete the rubric in the Teacher's Guide.</li> <li>• Quest ends with a learning conversation.</li> </ul>
<p><b>6 New Insights and Understandings</b> Presenting and evaluating.</p>	<ul style="list-style-type: none"> <li>• Present the solution to scenario.</li> <li>• Explain how their solution supports their new insights, understandings and how it relates to the scenario.</li> </ul>	

Unit Evaluation Implications for next unit

## Introduction

This Quest is based on a lesson from Chapter 14 Causal Explanation page 256 in 'Teaching Critical & Creative Thinking in Language Arts Infusion Lessons, Book C1 Grades 5 & 6, Robert J. Swartz, Mary Anne Kiser, Rebecca Reagan, Critical Thinking Books & Software ISBN 0-89455-733-5

It is an investigation into causal explanation. The students are asked to look in depth at the events that caused the R.M.S. Titanic to hit an iceberg and sink with great loss of life.

### **1 Authenticating the Learning**

Initiate a whole class discussion to introduce the scenario and its problem making links to the achievement objective focus and the thinking skill. Talk together about what they already know about the Titanic.

Brainstorm and mindmap their present knowledge. What do we already know about the problem? What are all the possible causes?

View an introductory DVD on the Titanic.

### **2 Constructing Relevant Questions**

As you discuss the scenario begin the question formation and planning the research.

During an interactive discussion between the teacher and class these essential research questions need to be drawn out for investigation. As much as possible these should be co-constructed:

How do you skilfully determine a causal explanation?

What do we know about the Titanic as a ship?

What happened before the Titanic hit the iceberg?

What caused the Titanic to hit the iceberg?

### **3 Planning the Research**

Discuss with your class and agree on a timetable with checkpoints. Also decide on the concluding performance and look closely at the reflection task sheet.

### **4 Discovering Relevant Information**

Introduce the thinking skill of causal explanation.

Construct with your class the thinking steps for skilful causal explanation.

Begin the 'discovering relevant information' phase by modelling the use of the graphic organiser.

For more detail see Chapter 13, page 385 - in Causal Explanation 'Infusing the Teaching of Critical and Creative Thinking into Content Instruction - A Lesson Design Handbook for the Elementary Grades' Robert J. Swartz and Sandra Parks, The Critical Thinking Co. ISBN 0-89455-481-6

Use the Quest's CD and other resources to locate information on the Titanic. Most of the resources on the CD are primary source material from the Public Records Office in London so teacher guided discussion using the data projector will need to be a feature of this Quest.

### **5 Constructing Knowledge**

Have your students reflect on the Thinking Steps and their notes, including their graphic organisers.

### **6 New Insights and Understandings**

Have your students write up their new insights and understandings.

**ASSESSMENT TASK – SOCIAL STUDIES – YEAR 7 AND YEAR 8  
TITANIC**



**Key Achievement Objective:** understand that events have causes and effects.

**The scenario is:** When something tragic happens people are often quick to guess at the cause. This can be very dangerous. If we are to protect ourselves from further harm we must be very certain of the cause. It is vital that we are skilled at causal explanation. In 1912 Captain Smith was on the bridge of the largest man made moving object on the planet. The R.M.S. Titanic was near the leading edge of technological development and was thought to be virtually unsinkable. We all know it hit an iceberg and sank but knowing what happened will not protect us from another disaster. Knowing why it happened is the key. Using skilful causal explanation and the original documents from 1912 can you work out why the Titanic hit the iceberg?

ASSESSMENT	BELOW EXPECTATIONS	WITHIN EXPECTATIONS	ABOVE EXPECTATIONS	Effort A B C
Your argument shows:	Your view was not clearly stated on why the Titanic hit the iceberg.  Your view was not clearly explained or justified and only 1 important point was given.	You clearly stated your view on why the Titanic hit the iceberg.  You explained and justified your view with 2 - 3 important points.	You clearly stated your view on why the Titanic hit the iceberg.  You explained and justified your view with 4 or more important points.	
Student Evaluation				
Teacher Evaluation				
Your new insights and understandings show:	You only explained what kind of thinking you did but not how you did it.  You wrote about your new information but did not explain how this Quest extended your thinking around events having causes and effects.	You explained what kind of thinking you did and how you did it.  You explained how this Quest extended your thinking, how your thinking went in new directions around events having causes and effects.	You extended this by saying why this way of thinking helped you, including how you would do it next time.  You also explained how this quest challenged your thinking, the questions you still have about events having causes and effects.	
Student Evaluation				
Teacher Evaluation				

**TEACHER FEEDBACK - MEDALS AND MISSIONS**

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## Determining Causal Explanation Skilfully

**A.** Discuss with your class why determining causal explanation is needed.

'Finding out what caused something is called 'causal explanation.' Knowing the causes of events or conditions can also enable us to predict them, although we may not be able to prevent them. Then we can try to avoid or minimize harmful effects'

'We can guard against selecting a cause hastily by considering many possible explanations of an event. Then it's easy to avoid affirming the first explanation that pops into our minds. Realizing there can be many possible causes reduces the tendency to jump to quick conclusions about causation.'

Robert J. Swartz and Sandra Parks

**B.** Develop with your class the thinking steps for skilful causal explanation by discussing common defaults and how these could be done more skilfully.

### Common Defaults in our Thinking about Causes

1. We consider only one possible cause and affirm it without thinking about other possibilities.
2. We take account of only a small sample of the relevant and available evidence in determining a cause.

### Skilful Causal Explanation

1. What are the possible causes of the event in question?
2. What could you find that would count for or against the likelihood of these possibilities?
3. What evidence do you already have, or have you gathered, that is relevant to determining what caused the event?
4. Which possibility is rendered most likely based on the evidence?

**For more detail** see Chapter 13 - Causal Explanation in 'Infusing the Teaching of Critical and Creative Thinking into Content Instruction - A Lesson Design Handbook for the Elementary Grades' Robert J. Swartz and Sandra Parks, The Critical Thinking Co. ISBN 0-89455-481-6

<b>POSSIBLE CAUSES</b>	

# Causal Explanation

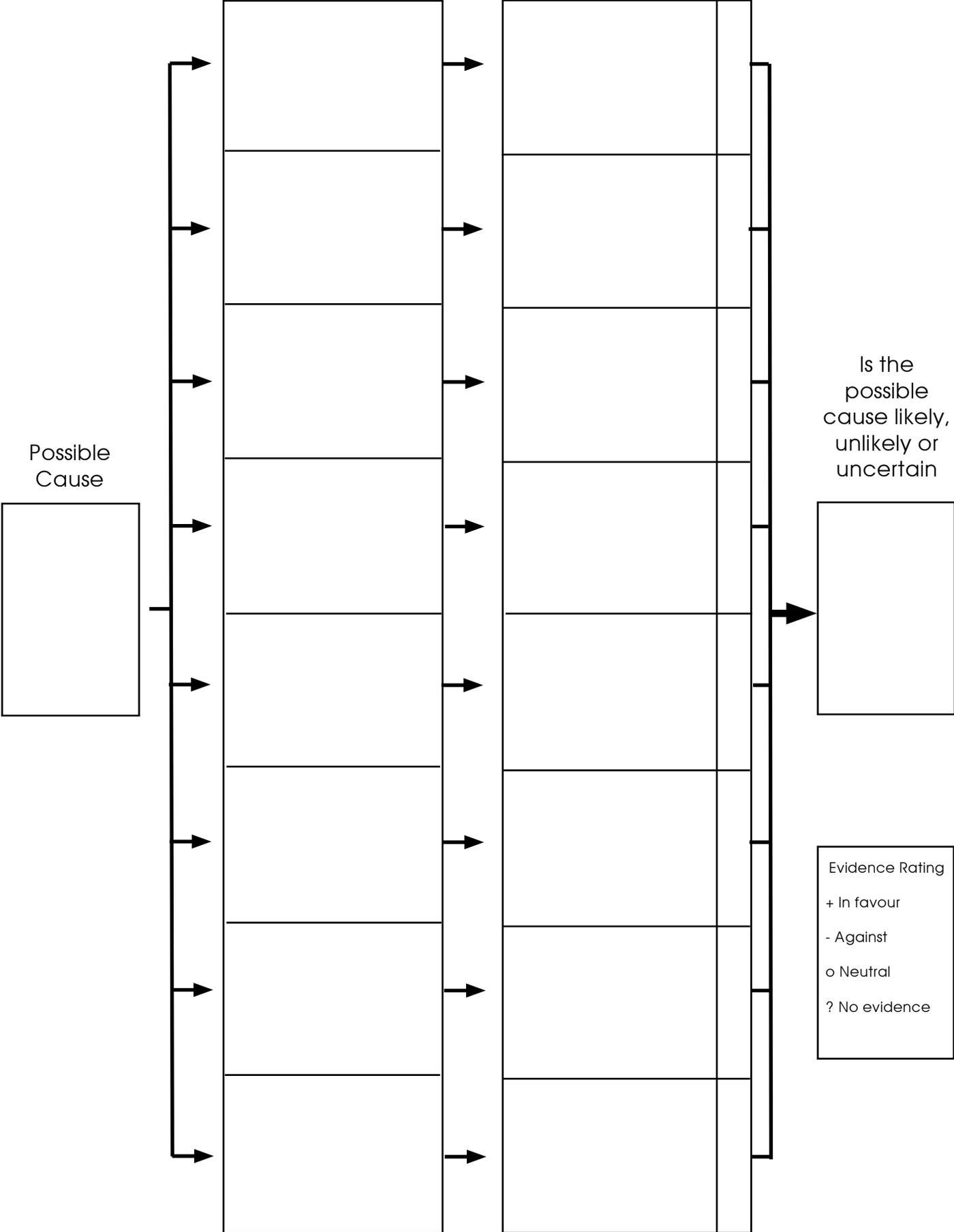
Possible Evidence

Actual Evidence

Possible Cause

Is the possible cause likely, unlikely or uncertain

Evidence Rating  
+ In favour  
- Against  
o Neutral  
? No evidence



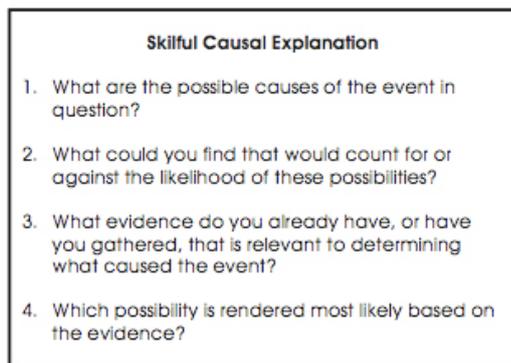
# Integrating Skilful Causal Explanation into an Explanation

## Teachers

The purpose of an explanation is to 'tell us how and why things happen.' Use the template below to help your students decide what to write in their explanation. Their explanation must be clear to the reader and include researched evidence to back up their information. The template is based on Whiteheads\* (2003) model in Writing Frameworks: Book B. Revised edition.

## Students

Use your graphic organiser to write your explanation. When explaining why the Titanic hit the iceberg you need to carefully describe the cause and effect of the specific events and actions. This is where you show your indepth knowledge of the events and actions you thought were likely causes of the Titanic hitting the iceberg.



Before writing have you gone through the 'Skilful Causal Explanation' Thinking Map?

### Title

- Give your explanation a title.

### Introduction Paragraph

- Describe the context of the explanation. This is where you make a link to the scenario.
- Tell your reader why you are making this explanation.
- Word the introduction in an interesting way so readers will want to continue reading

### Body Paragraphs\*

- Paragraphs 1- 4; these should describe the cause and effect of at least 4 specific events and actions that you think explain why the Titanic hit the iceberg.
- Use the information from the graphic organiser.

### Conclusion

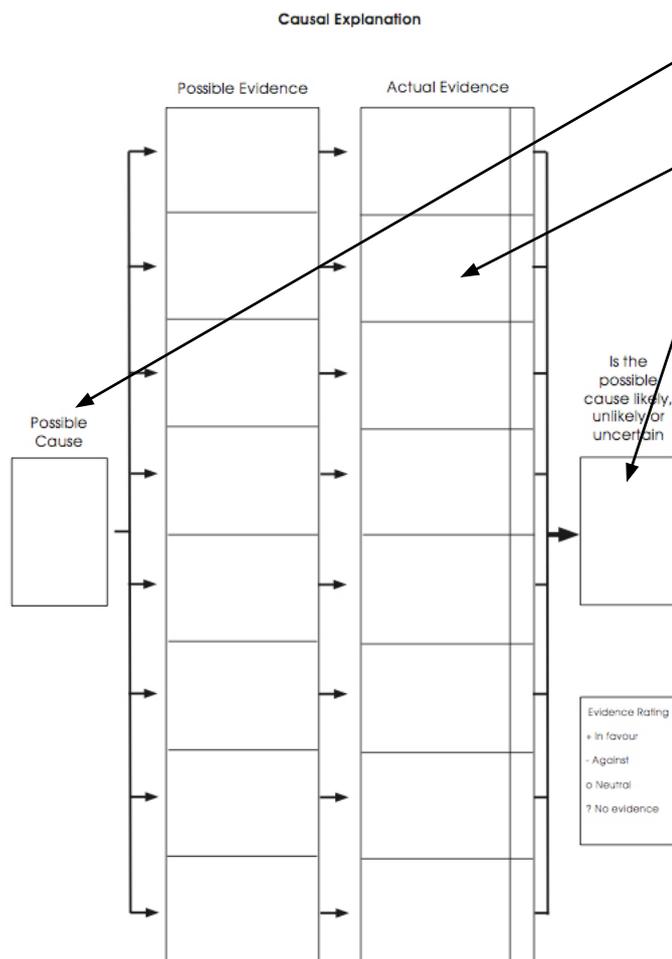
- Here you will write a brief summary of your explanation of the cause and effect of each event or action.
- Sentence starters could be 'In conclusion, there were four major causes for the Titanic to hit the iceberg...'

\* To get an 'Above Expectations' students will need to write at least 4 paragraphs. See assessment rubric for details.

Now add your:

### New Insights and Understandings.

- Use the Ladder of Metacognition to comment on your ability to use skilful causal explanation.
- What have you learnt about events having causes and effects.



## Additional Scaffolding Suggestions

- Use a data projector to introduce the exploratory environment of the 'Titanic' CD.
- Discuss with the whole class the Quest (achievement objective and scenario) before brainstorming and mindmapping. Explain the importance of this study. Clarify words and begin the creation of a vocabulary list.
- If the discussion on the achievement objective and scenario is difficult, and the brainstorming and mindmapping produced show little knowledge of the Titanic, show more than one introductory DVD from our 'Titanic' collection.
- DVDs that assist in introducing causal chains include:-
  - 'Seconds from Disaster'
    - Space Shuttle Explosion
    - Columbia's Last Flight
  - 'Deadly Design'
    - Shopping Mall collapse in Korea.
- This Quest suits research by co-operative groups of two with access to their own computer or iPad.
- Do not allow any e-mail, fax or phone calls to be made until teacher contact has been made with the expert involved. Set it up for success.
- If using Titanic related web sites, remember to check the FAQs before sending e-mails.
- The documents on the CD are copies of the originals. Some are handwritten. Please see this as a challenge not a road block. Challenge your class to decipher them with your guidance. "This is a treasure hunt for information, real research is not always easy!"
- Encourage your students to invite their parents in to see the 'Titanic' display in the library before or after school.
- Vocabulary/Spelling List - maiden voyage, knots, boilers, iceberg, manoeuvrable, rudder, crow's nest, rendered, evidence, likelihood, causal explanation, heiress, R.M.S. (Royal Mail Steamer), bridge, technological development, vital, virtually unsinkable, First, Second and Third class, editorial, union, claim, verdict, Commission of Enquiry, editorial, a Parliamentary Question, telegram, account, survivors.
-  Room 11 decided after studying why the Titanic hit the iceberg to put J. Bruce Ismay, White Star Line's chairman, who was responsible for her final Design, on Trial. Their Trial by Jury charged him with negligence resulting in the Titanic hitting an iceberg and sinking causing the death of hundreds of people. They dressed in authentic period costumes and created a courtroom setting. The Prosecution lawyers were too strong with their arguments for the Defense lawyers so the Jury found the accused Guilty. See our handbook on Trial by Jury for more details.
- New Zealand's Titanic - The closest we get to the sinking of the Titanic is the Wahine disaster of 1968. You might like to read your class 'No Safe Harbour' by David Hill, New Zealand Post Book Awards finalist 2003, Mallinson Rendel Publishers Ltd. ISBN 0-908783-76-0

## **Resources on the Titanic Quest CD**

Official documents, records and photographs that look just like the originals, including reproductions in facsimile from the archives of the Public Record Office in London.

1. Transcript of Register for transmission to Registrar-General of Shipping and Seamen.
2. Report of Survey of an Emigrant Ship
3. Certificates of Clearance of an Emigrant Ship
4. Report of the British Commission of Enquiry into the loss of the Titanic.
5. Telegrams sent to the SS Birma by the SS Titanic as she sank.
6. Correspondence from the White Star Line to the Board of Trade concerning the loss of the Titanic
7. "The Titanic Crime" editorial in the New York Evening Journal.
8. Letter from the Dock, Wharf, Riverside and General Workers' Union
9. Notice of a Parliamentary Question to the President of the Board of Trade.
10. Sample of returns of passengers drowned – First, Second and Third class.
11. Alfred Omont's account of his escape from Titanic – statement of evidence to the British Commission of Enquiry.
13. Statement of Claim and Verdict in the case of Ryan v. the Oceanic Steam Navigation Co. Ltd.

## **Video resources available from our resource room**

- Hollywood Science, Disaster at Sea, 46 mins approx.
- Maiden Voyage, 50 mins approx.
- Marine Machines, National Geographic, 46 mins approx.
- Return to Titanic, National Geographic, 46 mins approx.
- Titanic a Matter of Murder? 50 mins approx.

**Filing Cabinet**

- A Letter from the Dock. Wharf, Riverside and General Workers Union
- List of Deaths 1st, 2nd and 3rd Class Passengers
- Statement of Claim
- Jury Verdict
- Report of Survey x2
- Certificate of Clearence x3
- Notice of a Parliamentary Question

**Telegrams**

- Telegrams to SS Birma x2

**Titanic Poster**

- Titanic's Maiden Voyage
  - Titanic Departing
  - Last Sighting
  - Final Plunge
  - National Geographic photographs
  - Full length view of Titanic taken at Belfast
- Titanic Today
  - Rusted Prow
  - Interior First Class Cabin
  - \* Propeller

**Ocean Liner**

- Lusitania
- Mauretania
- Olympic
- Titanic
- SS Imperator



**Book**

- Report of the British Commission of Enquiry

**Draw**

- Titanics Key
- Henry Aldridge
- Was the Titanic sunk by a small key?

**Teddy Bear**

- Stieff Mourning Bear

**Man**

- Maritime historian 1
- \* Maritime historian 2

**Newspapers**

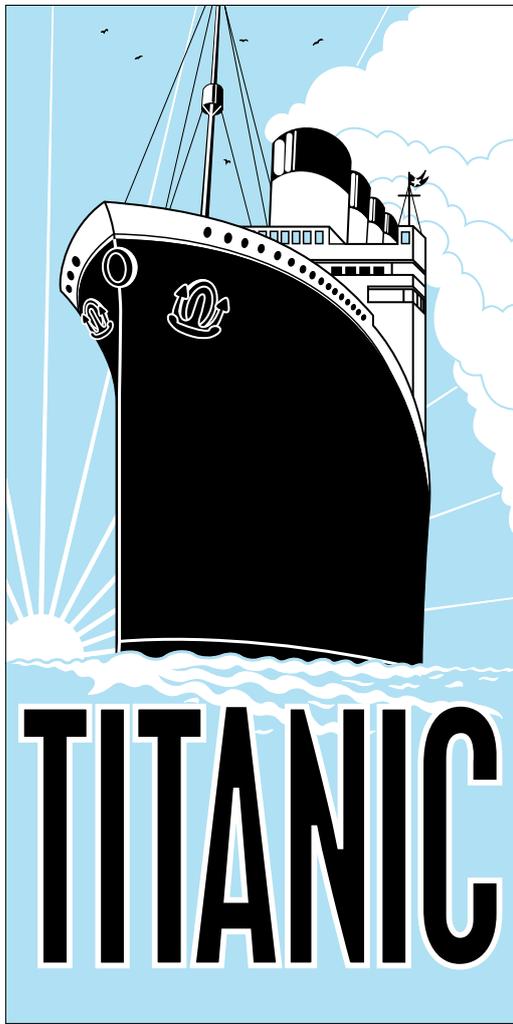
- Boston Globe Newspaper 1912
- New York Evening Journal, 16 April 1912

**Typewriter**

- Letter from Ismay, Imrie & Co. to Marine Department x2
- Witness Testimony The Titanic United States District Court
- The events on that Fateful Night

**Leather Bag**

- Alfred Omont's Account x3
- Personal effects of Alfred G. Rowe
- Hearses Lined up on Halifax Wharf
- "Recovery of Bodies"
- Photograph of a Survivor
- 'Titanic' Life-boat approaching 'Carpathia.'
- Photograph of iceberg, supposed cause of the Titanic disaster.

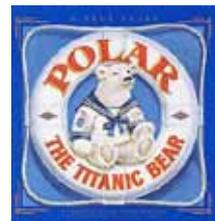


Flag Design

Library Display



This model was built by Handcrafted Model Ships, Inc. who are the largest manufacturer of high quality model ships in the world.



'Polar the Titanic Bear' a white teddy bear named Polar describes the many sights he has seen while travelling with his young owner. This story was written by the American heiress Daisy Corning Stone Spedden for her son a year after they escaped from the "Titanic" disaster.



This item is a piece of the iceberg from the James Cameron movie "Titanic." This movie prop was originally obtained from Fox Baja Studios, Rosarito, Mexico.



A special black mourning bear, made by Steiff of Germany. The bear has a red ring around both eyes which was to symbolize that the bear had been crying.



Molly Brown Doll. Molly was a Titanic survivor. She took charge of lifeboat No.6 and went back looking for survivors. She became known after her death as 'The Unsinkable Molly Brown.'



Coal recovered from the wreck of R.M.S. Titanic, lying on the ocean floor at a depth of 3,800 m.