



## *The Comet's Curse:* **A Cross-Curricular Lesson Plan**

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What follows is an inclusive and multi-dimensional lesson plan that bridges the gap between science experiment, writing assignment, math exercise and art project.

Developed by a Colorado teacher (and inspired by a Texas teacher), this cross-curricular middle school lesson plan is an opportunity to create a grade-wide (or even school-wide) project that is both fun and educational.

Lesson plan includes:

- Standards and Objectives
- List of Needed Materials
- Assignment Procedures
- Evaluation Rubric
- Additional Ideas

This is designed to be flexible and customizable, so feel free to use this as a guide to create the lesson plan that best fits your students. And have fun!

## The Comet's Curse



### **Standards:**

While this will vary from state to state, there are certain skills that apply to all students. Our students all need to be able to use the writing process effectively to complete a finished product which can effectively share their thoughts, create visual art, perform math computations with real world application, complete science investigations, read and comprehend books on level, and accurately research and present information.

### **Objectives:**

- Read The Comet's Curse by Dom Testa to help engage students in the upcoming space unit, using both individual journals and the given study guide in the book.
- Produce a piece of writing which shows individual understanding of the book as a whole, and components which apply to the particular prompt.
- Complete a research project which teaches us about a particular celestial object.
- Complete a visual art project depicting one element of the book.

### **Materials:**

- The Comet's Curse by Dom Testa
- Journal for each student
- Computers with internet access
- Books and articles about our universe and solar system
- Note cards and bags for safe keeping

### **Procedures for Reading:**

1. Read The Comet's Curse. (Intro as whole group, 1-3, 4-6, 7-10, 11-14, 15-18, 19-24, 25-29, 30-34, 35-38, 39-end) Any unfinished reading from group can be done the next day or as homework (as assigned by the teacher). Upon completion of each section check the study guide in the book for answerable questions. Students should be finding passages in the book to support their answers.
2. Use the student journals to:
  - Keep track of unfamiliar vocabulary. Students should look up words immediately to help ensure comprehension. (Make sure I have noted words I think might be trouble areas so I have an idea of where students will struggle.) Students should list the page number for quick reference.
  - Create visuals that jump to mind to help them remember this part of the book. (This will open up one more pathway for the brain to access the information.) If visuals don't appeal to this student, perhaps a quick summary in their words, or creative writing to lock in the information.
  - Jot down a quick prediction for the next section of the book.

	<b>Advanced</b>	<b>Proficient</b>	<b>Part. Prof.</b>	<b>Unsatisfactory</b>
<b>Journal Completion</b>				

**Procedures for Writing: (to be completed after reading the book)**



1. Have students choose one of the following prompts:
  - Suppose you are chosen as a member of the Galahad crew. What are the emotions running through you mind/heart? How would you choose to spend your last day on Earth? What valued possession would have to be on board with you for the journey?
  - Which council member do you find you relate with most? What causes this closeness for you? How do you suppose your two families would compare? Use examples from the book and personal experience.
  - The stowaway tried to use fear to tear down any chance of success for Galahad. How was this tactic successful? In the long run, why did it fail? What other emotion could the stowaway have chosen to create disorder on Galahad? Would it have been as successful?
2. It will be up to the student to decide which type of writing will best support what they need to cover in their work. (This could be anything from a script for a movie, poetry, journal entries, an essay, a letter, or any other sort of writing which will cover all parts of the prompt.)
3. Students will need to work through the whole writing process of planning, drafting, revising and editing, and producing a final copy.
4. Grades will be assessed based on fulfillment of required elements. Did they use the writing process? How effectively did they answer all parts of the prompt? Were quotes from the book, or visuals, provided to support their writing if needed? Is the writing engaging?

	<b>Advanced</b>	<b>Proficient</b>	<b>Part. Prof.</b>	<b>Unsatisfactory</b>
<b>Uses all steps in the writing process effectively</b>	na	Plan, drafting, revising/editing, final product all completed	One part of the process is missing or not done completely	More than one part of the process is missing or not done to class expectations
<b>All parts of the prompt were addressed clearly</b>	Writing goes beyond the expectation without drifting off topic; reader is wowed!	All parts clearly addressed, and the reader is engaged	Some parts of the prompt were not addressed; partially engaging	May start on topic, but never really addresses any of the actual prompt; not engaging
<b>Appropriate support was given through quotes/visuals</b>	Support may include outside sources to enhance book knowledge	Knowledge of the book is obvious from support	Knowledge of book is not well supported in text support	Knowledge of book is missing from text support
<b>Grammar and spelling are used appropriately</b>	Risks above grade expectations are taken	Mistakes are almost non-existent	Mistakes are more common; may hinder reading	Mistakes are so prevalent they take away from the message

**Procedures for Science and Technology: (to be completed after reading)**



We encounter many celestial objects while traveling with the crew of Galahad. Within the last couple of generations, our knowledge of what's out there has grown tremendously due to much work from the world's space science programs. Pick one celestial object (nebulas, binary stars, a planet other than Earth, etc.) to become an expert on. Use reputable sources to gather information and organize it into a slide show to be presented before your peers at a science "convention". Be ready for other scientists to be inquiring about your topic!

1. Students will complete a research project to be presented as a Power Point slide show based on the prompt above. Pictures and short videos are welcome!
2. During the research phase of the project, students will keep note cards to record information. On the back side, students should be listing bibliography information for later use. Provide each team with several note cards to get started and a bag to keep them in. (Keep in room to avoid excuses later.)
3. Show students **noodletools.com** to build their bibliography citations. Then show them how to copy and paste information to their Power Point slides. (A bibliography is required to get a proficient grade on this assignment.)
4. Allow students a reasonable number of class periods to complete research and put it together in their slide show. (Probably 1½ weeks and a day or two for presentations.)
5. Have students present their work at a "convention" to be held in the classroom. A good scientist can engage the audience!

	<b>Advanced</b>	<b>Proficient</b>	<b>Part. Prof.</b>	<b>Unsatisfactory</b>
<b>Research information</b>	*Clearly informs about chosen topic and includes pictures/short videos to support *Quality citations	*Clearly informs about chosen topic so that others may also be experts *Citations make quality research evident	*Information about chosen topic is not clear; listeners have many questions still *Citations are minimal	*Information is vague *Citations from sources are missing
<b>Power Point Project</b>	*Goes beyond the basic slide show with effects and built in videos or pictures	*Slide show is organized and provides plenty of information to show knowledge of topic	*Slide show is unorganized and provides limited knowledge of topic	*Slide show is unorganized or unfinished and knowledge of topic is lacking
<b>Presentation</b>	*So confident that speaker may add in extra info.	*Physically confident and verbally clear (eye contact)	*Verbally clear, but just reads from cards	*Verbally unclear and hard to understand

**Procedures for Visual Art Project: (to be done after reading the book. This would be a great opportunity to have the art teacher be involved in our curriculum. At a school where this isn't possible, this could be an at home piece.)**

1. Have students brainstorm their favorite elements from The Comet's Curse. This could be an emotion, a physical area onboard, a character, Bhaktul's Comet, etc.
2. Using the list, have the students come up with ways they could visually show one of the elements. It is important to remind the students that their work will stand alone, no words will accompany it.
3. Have the students narrow their choices down to their one favorite and have them run it by the teacher for approval. Once approved by me, the students will be running their idea past the art teacher for approval on supplies.
4. My students will be producing this art work while in art class.
5. A Galahad Gallery will be set up around our classroom, and possibly hallway, to display the artwork for all to see. There will also be strips of paper available for students to leave some feedback in the bags we will place near each piece of artwork.

**\*\*Additional ideas for The Comet's Curse Projects:**



**1. Writing**

- Do you support the Galahad project? Many people were against it, saying that all of the people involved should be spending any remaining time with their family. How do you feel about this argument? Please be specific in arguing your side.
- Considering the need to keep peace on Galahad while at the same time being a strong leader, do you agree with how Triana handles the stowaway situation? Either explain why you believe she's correct in her actions, or how you would handle this situation differently as the leader.
- It is important for the Galahad crew to be prepared in all ways...body and mind. Do you feel that they are prepared as well as can be? Provide proof for this answer. If not, what further training do they need?
- We find Triana using a journal to deal with her multitude of emotions on the trip. Paper is an expensive/valuable commodity. How do deal with your own emotions? How does this help you to deal with everyday events so you can move forward? Does your method use valuable commodities?
- Was killing the stowaway an appropriate way to handle the situation? If not, what do you feel would have been a more appropriate way to handle this situation?
- Which member of the Galahad council do you admire most? What is it specifically about this character that lends to this feeling? Is it something that you recognize in yourself, or maybe a quality you lack?
- In The Comet's Curse we go back and forth often between Earth, both past and present, and Galahad. Pick one character and explain how this technique has helped us gain a more thorough understanding of them. How does this change our perception of this character's behavior?
- Get on to the Club Galahad site and find Triana's journal in the blog. Respond to at least 3 of the entries and show them to the teacher.

## 2. Science

- Research NASA's history and how their work has broadened our understanding of our solar system and universe. Sum up your learning in a timeline of events.
- Assign each group of students a particular mission, or group of missions, to explore and to research. Have the students put together a summary of their findings to share at a Scientists' Meeting.
- Do some research into what chemicals will be needed to maintain the farms on Galahad. What do the various chemicals do? If we don't use any chemicals, how do we keep the soil from becoming depleted?

## 3. Math

- Keep track of how far out the ship Galahad is, and how far they will be going. Find the actual distances to our planets.
- Use information on distances from number one to determine how rapidly Galahad would have to be traveling to make it to these great distances in their time frame.
- Show us how much land it would take to harvest the necessary food to feed Galahad's crew of 251 for one week. You will have to do some research for your various foods and how much space will be necessary to yield the required amount of each crop. (Teachers may want to provide students with some numbers to work with to practice current skills such as whole numbers, fractions, or decimals.)
- Use a trusted source to find the actual sizes of the planets in our solar system, or the actual distances between the planets. Create a model to show what you've learned. Be sure to include the math in a visible manner to prove to us your model is correct.

