

# Science Fiction Story

Suggested Grade Level(s): 8-10

Estimated class time: 2 days

## Summary

The students will create a fictional narrative on the beginning of time. They will use their scientific knowledge of the Big Bang Theory and go back into time to when it occurred so they can make observations about it. They have four options as to a final product using the RAFT method which is shown in a chart below.

## Objectives:

- Students will write a fictional story about the Big Bang Theory.
- Students will use the RAFT process to help them structure their writing.

## National Standards

### National Science Standards

- NS.5-8.7 HISTORY AND NATURE OF SCIENCE  
As a result of activities in grades 5-8, all students should develop understanding of
  - Nature of science
  - History of science
- NS.9-12.4 EARTH AND SPACE SCIENCE  
As a result of their activities in grades 9-12, all students should develop an understanding of
  - Origin and evolution of the universe
- NS.9-12.7 HISTORY AND NATURE OF SCIENCE  
As a result of activities in grades 9-12, all students should develop understanding of
  - Nature of scientific knowledge
  - Historical perspectives

### National Language Arts Standards

(From the National Counsel of Teachers of English)

- NL-ENG.K-12.5 COMMUNICATION STRATEGIES  
Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.
- NL-ENG.K-12.8 DEVELOPING RESEARCH SKILLS  
Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

## **Knowledge Prerequisites:**

Student should be familiar with the Big Bang Theory and the scientists who were proponents of this theory throughout history.

## **Teacher Background:**

The teacher should be familiar with the Big Bang and Steady-State Theories of the universe. Further information on the RAFT process can be found here:

<http://www.writingfix.com/WAC/RAFT.htm>

**It is important to first survey students and to check with the school nurse to learn about any students who might have a latex allergy. If this is a possibility, latex-free balloons must be used in the Engagement section.**

## **Materials:**

- balloon (see note above, in Teacher Background section)
- colored confetti
- writing materials
- research materials, such as the Internet, textbooks and the 1955 Cosmic Times poster

## **Procedure:**

### **I. Engagement**

Before letting students into the classroom, move the desks to provide a large open area at the center of the class. Let students enter the class and have them form a line at the back of the class. Without saying a word, produces a blown-up balloon filled with confetti, hold the balloon high enough for all students to clearly see. Pop the balloon, still not saying a word.

### **II. Exploration**

Ask the students “What happened? What event in the history of the universe could this represent?” Allow the students to take a few minutes to discuss with a partner what happened and what cosmological event this could be used to compare.

### **III. Explanation**

Introduce the class to the major ideas behind the Big Bang Theory using resources such as Internet websites, textbooks, and the Cosmic Times. Explains that the most widely accepted theory in the field of astronomy today is the Big Bang theory, first proposed in the 1920s and 1930s. By observing physical properties of the universe, proponents of this theory speculate that time began billions of years ago when all of the matter within the universe exploded from a singularity, a dense point with an infinitely small volume.

#### IV. Extension

Give students a RAFT writing assignment (see below). They are to pretend that they are traveling to the beginning of the universe when the Big Bang took place. Students have a few options to choose from and can make it as creative as they'd like. Suggested outlines for each of the RAFT options are given below.

#### V. Evaluation

Grade students based on the following items in their story: accuracy of the science behind the story, creativity, and all components of the RAFT writing project included in the outline examples.

### Science Fiction Story RAFT Assignment for Cosmic Times 1955

<b>Role</b>	<b>Audience</b>	<b>Format</b>	<b>Topic</b>
Science student	Your science teacher	First person letter	Adventures through space and time to the beginning of the universe
NASA scientist	NASA Administrator	Formal report to your boss	Report on all observations made to the beginning of the universe
Travel Agent	General public	Advertising commercial for a trip back in time to the beginning	Book the most exciting summer vacation ever!
TV announcer	People at home	Reality TV – can be written or presented orally to class	Exciting unexpected obstacles during time travel – who can outlast the competition?!

**A) RAFT outline for letter:**

Dear \_\_\_\_\_

Paragraph #1

Tell your teacher where/when you are going

How long the trip will take

Type of transportation (time machine, flex capacitor, etc...)

Paragraphs 2, 3, and 4 – body of letter and primary information

#2 Tell them what is different about traveling through space and time – talk about atmosphere, cosmological conditions, etc...

#3 What you have learned since you have been here. Is the Big Bang Theory accurate?

#4 The neatest thing about the trip has been \_\_\_\_\_

Paragraph #5

When you expect to be home.

What you will do next.

Tell them you miss them, etc.

Sincerely and sign the letter.

## **B) RAFT Outline for NASA Scientist**

To \_\_\_\_\_ (boss's name)

Paragraph #1

Introductory paragraph with general information about your trip – duration, destination, purpose

Paragraphs 2, 3, and 4 – body of report and primary information

#2 Tell them what is different about traveling through space and time – talk about atmosphere, cosmological conditions, and being able to observe the beginning of time during the Big Bang

#3 A new discovery that has come about because of the ability to be able to witness this occurrence.

#4 One new thing that you have seen and learned here.

Paragraph #5

What you will do next?

Proposed research to add to Big Bang Theory.

Conclusion.

### **C) RAFT Outline for Travel Agent for TV advertisement:**

#### Scene 1

Paragraph 1: Introductory dialogue introducing your “Ultimate Summer Vacation”

You can start with something like: “Are you an adventure enthusiast, or a history/science buff? Well if so, I’ve got the perfect vacation for you....!”

#### Scene 2

Paragraphs 2, 3, and 4 – this dialogue is the body of the report and includes primary information including duration, destinations, and purpose of the trip.

#2 Tell them what is different about traveling through space and time – talk about atmosphere, cosmological conditions, and being able to observe the beginning of time during the Big Bang

#3 A new discovery that has come about because of the ability to be able to witness this occurrence.

#4 Some of the adventurous experiences you’ve had that can’t be done in the current time period.

#### Scene 3 - Paragraph #5

What you will do next?

What are some of the other destinations or time periods you can travel to for your summer vacation?

Conclusion.

## **D) RAFT Outline for TV announcer to home audience:**

### Scene #1

Introductory dialogue introducing your two teams of travelers and where they will be traveling to in this episode.

Scene #2 – this dialogue is the actual two teams traveling through time and facing their obstacles to win the prize for that episode. This should include:

- discussion about the atmosphere, cosmological conditions, and being able to observe the beginning of time during the Big Bang
- new discovery that has come about because of the ability to be able to witness this occurrence
- Some of the adventurous experiences you've had that can't be done in the current time period.

### Paragraph #5

What you will do next now that you've completed this adventure? What will you do with the prizes? Conclusion.