



# Ion Propulsion

# Relative Motion RAFT Writing Activity

## STUDENT ACTIVITY

**Instructions:** In this activity, you will have an opportunity to demonstrate your understanding of the reading “Frames of Reference” by describing relative motion from different perspectives. You will produce a one-page written composition according to the RAFT guidelines:

- R is for Role:** *What is the role of the writer?*
- A is for Audience:** *Who will be reading this writing?*
- F is for Format:** *What is the best way to present this writing?*
- T is for Topic:** *Who or what is the subject of this writing?*

You will use the RAFT strategy to describe the motion of an object from some unusual perspectives. This writing assignment will then be used by your teacher to determine how well you understand relative motion as described in the “Frames of Reference” student reading.

The **topic** for this writing assignment must focus on describing the relative motion of an object within a local frame of reference; however, you have the freedom to choose the **role**, **audience**, and **format**. The table below offers some writing possibilities from which you may select. Notice there are some blank lines at the end. Feel free to come up with some of your own ideas. Ideas can come from movies, books, nature, or sports, just to name a few. Be creative!

Role	Audience	Format	Topic
Airplane passenger seated by a window looking at another moving plane in the adjacent gate Perspectives: 1. The airline passenger 2. An airline worker on the tarmac 3. A second passenger in the adjacent plane	A person who has never flown in an airplane before	A letter	Describe the relative motion of an object within a local frame of reference  Describe motion from different perspectives as described in the “Role.”
Baseball – recently pitched Perspectives: 1. Pitcher 2. Ball 3. Batter	A person listening to a baseball game on the radio	Radio sports commentary	
Rain drop Perspectives: 1. Rain drop 2. Puddle	A child playing in the rain	Post cards (one from raindrop and one from puddle)	

Role	Audience	Format	Topic
Hockey Puck Perspectives: 1. Puck 1. Fan in the Bleachers 3. Goal Tender	A person reading about the hockey game.	Introduction to a newspaper sports column	Describe the relative motion of an object within a local frame of reference  Describe motion from different perspectives as described in the "Role."
Skateboarder on a cruise ship Perspectives: 1. A person on the shore 2. A crowd of onlookers on the ship 3. The skateboarder	Potential travelers	Travel brochure	
Actor driving a "stationary car" surrounded by moving scenery in a movie Perspectives: 1. Actor in the car 2. Movie audience	A person that wants to see this movie	Film review	
Xenon ion Perspectives: 1. Xenon ion 2. One of the grids 3. A person watching the ion engine work	The news media	Comic Strip	

Select one role, audience, and format as the basis for this one-page writing assignment. Consider the following prompts as you approach the topic of relative motion:

Describe the motion from each perspective. *What moves? What does not move? What appears to move? What appears not to move? What do you need to see (for example in the background) to verify motion?*

Write to the audience using the suggested format.

**Evaluation:** The rubric below outlines the expectations for this writing assignment. Before you begin writing, become familiar with the assignment criteria. Refer to the rubric frequently to evaluate your own progress.

<b>Criteria</b>	<b>In Progress</b>	<b>Meets Expectations</b>	<b>Exceeds Expectations</b>
<b>Understanding of Content</b>	Describes motion from only one perspective. Missing and/or misinterpreted information. Does not describe the local frame of reference.	Defines the local frame of reference. Describes motion from two different perspectives: the writer's role and the audience's frame of reference. Information presented reveals an understanding that motion is relative.	Describes motion from three or more different perspectives. Information presented reveals a sophisticated understanding that motion is relative.
<b>Organization of Ideas</b>	Ideas are disconnected and lack transitions. Attempts to write using a particular format, but may be missing format features or includes information that detracts from the purpose of the assignment.	Ideas flow; incorporates transitions when presenting different perspectives. Uses format effectively to write for a specific purpose.	Ideas flow smoothly; incorporates transitions when presenting different perspectives. Uses format effectively and creatively to write for a specific purpose.
<b>Communication of Ideas</b>	Ideas are vague because writing lacks descriptive details and precision. Writing does not show an awareness of audience.	Ideas are interesting because writing contains precise descriptions and details. Writing shows an awareness of audience.	Ideas are compelling and engaging because writing contains vivid, creative descriptions and sensory details. Writing reflects a keen awareness of audience.