



HANDOUT 6.4.1 – Your Turn

Metacognition in Reading

Directions: Look at the following reading passage example. What metacognitive strategies is this reader using? What additional strategies could she have used to support her understanding of the text?

Following launch aboard a Boeing Delta II rocket, the Genesis spacecraft will travel to a point in the solar system called L1. It's a libration point, and these are special points, located throughout the universe, that can be used for low fuel trajectories (paths that require less-than-normal fuel). These points are called libration points. Librate is a verb that means to swing slightly in opposite directions, like the needle on a bathroom scale when it is coming to rest. An object librates because it is being affected by two opposing forces. Libration points in space are places between two orbiting objects where the gravitational force exerted by the objects on each other is balanced. The Genesis spacecraft will remain at one of these libration points and collect solar wind for two years.

As the Earth journeys around the sun, the location of the sun-Earth libration point stays constant with respect to those two solar system objects, but moves from the perspective of a fictional observer hovering over the Milky Way galaxy in a spaceship. An object, natural or man-made, which is at one of the libration points will remain stationary, as observed from Earth, unless acted on by some additional force. A satellite can also be made to orbit one of these points. After its nearly three-year orbit, the spacecraft will return to the Earth.

Reader Annotations:

- L1? Did I get that right? Better reread to make sense.** (connected to "L1")
- Libration point. I wonder what that is.** (connected to "libration point")
- Trajectories. Since I can't break it down into smaller words, I'd better look it up.** (connected to "low fuel trajectories")
- Okay, now I get it. It's like driving downhill; it takes less fuel.** (connected to "(paths that require less-than-normal fuel)")
- Yeah, I've seen that.** (connected to "like the needle on a bathroom scale")
- Solar wind. What's that? I'll read ahead to see if that term is explained. If it isn't, I'll have to look it up or ask my teacher what it means.** (connected to "solar wind")
- Like playing with magnets.** (connected to "two opposing forces")
- Huh? I didn't get that. I better reread it.** (connected to "the location of the sun-Earth libration point stays constant with respect to those two solar system objects, but moves from the perspective of a fictional observer hovering over the Milky Way galaxy in a spaceship.")
- I'm getting a picture in my head of an activity I've seen. A paperclip was attached to a string and suspended in air because of the force of a magnet.** (connected to "stationary, as observed from Earth, unless acted on by some additional force")
- Wow, three years; that's a long time!** (connected to "three-year orbit")

Text from "Cool Stuff About Genesis," by McREL, 2001. Retrieved from http://www.genesismission.org/product/genesis_kids/aboutgenesis/aboutgenesis.html

Barton, M. L., & Jordan, D. L. (2001). *Teaching reading in science: A supplement to Teaching Reading in the Content Areas Teacher's Manual* (2nd ed.), p. 108. Aurora, CO: Mid-continent Research for Education and Learning.