Science Journal Analysis

Using the supplied journal in the Google Classroom post, respond to the following questions.

1. What year was this paper/journal published?

   June 30 1905

2. Where was the journal originally published?

   Annalen der Physik.

3. What was the original title (i.e. the specific language) the paper was published under?

   Zur Elektrodynamik bewegter K¨orper (German)

4. How many times has this paper been cited since it was published? (This is something you'll have to research)

   2266 times (google scholar)

5. Einstein published many papers in a single year ("the miracle year" some called it). What were the papers that Einstein got published in 1905 and where in the order did this one fit?

   1. On a Heuristic Viewpoint Concerning the Production and Transformation of Light
   2. On the Motion of Small Particles Suspended in a Stationary Liquid, as Required by the Molecular Kinetic Theory of Heat
   3. On the Electrodynamics of Moving Bodies <- this article
   4. Does the Inertia of a Body Depend Upon Its Energy Content?

6. There was no experiment done for this paper. However, Einstein does provide us with examples to demonstrate his reasoning. Describe an example he gives in section 2, *On the Relativity of Lengths and Times.*

   There is a stationary rod with two clocks, one on each end. There are also going to be two observers, one stationary, and one moving. The stationary observers will claim that both clocks are advancing at the same speed, while those moving away will claim that the clocks are not synchronous.

7. To your best estimation and a short description, what level of physics knowledge does one need to understand the material in this paper?

   College level physics knowledge

8. Describe in 3-4 sentences why the journal is significant to our understanding of nature.

   This journal is important to our understanding of nature since relativity is something that won't go away. Relativity is also important for our understanding of particles and how they react with each other. Another wonder of nature that can be understood with relativity is space itself and the things in it, like black holes.

9. One of the things that this paper inspired was the Twin Paradox. If you were to travel 12 lightyears to Tau Ceti (like Ryland Grace does in *Project Hail Mary*), and were able to return to Earth, would everyone you know be older than you, or the same age as you? For this hypothetical, you are assuming that you were able to travel at relativistic speeds to Tau Ceti and make it back within the lifespan of a human. (2-3 sentences please)

I think that everyone would be older than you, because of the slower time you would experience due to relativity. In the 12 or so years Ryland experienced, the people on earth would have experienced much more due to their slower speed. Since velocity is part of the relativity equation, moving faster makes time go slower.

10. Add the correctly formatted APA reference.

Einstein, A. (1905). On the electrodynamics of moving bodies. *Annalen der physik*, *17*(10), 891-921.