

## Comics that ask “what if?”

Randall Munroe

<http://what-if.xkcd.com/>

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### References

- Relativistic Baseball:  
<http://what-if.xkcd.com/1/>
- Google’s Datacenters on Punch Cards:  
<http://what-if.xkcd.com/63/>

### Vocabulary

pitcher (baseball)	
trigger	
mushroom cloud	
punch card	
hard drive failure	
square footage	

### Comprehension

#### Relativistic baseball

1. How fast is the baseball pitched in this hypothetical scenario?
2. What could one observe from the top of a far-away hill about this situation?
3. According to baseball rules, what would be the final result of this baseball round?

#### Google’s Datacenters on Punch Cards

1. Why is this calculation not straightforward?
2. What are ways Randall used to indirectly measure Google’s data?
3. What are extra ways Randall mentions but did not use himself?
4. What is Randall’s estimate of the **total** amount of data accumulated by Google?
5. How does that amount of data translate to punch cards?
6. What was Google’s answer to Randall’s writeup?

**Debate and activities**

1. What do you think of the amount of data Google has stored?
2. What do you think of Randall's approach to this kind of questions?
3. If we printed and stored in this classroom all the data contained in AREL, would we still be able to hold this presentation?