

3.1

BEYOND NUMBERS

What Does Infinity Mean?

The known is finite, the unknown infinite; intellectually we stand on an island in the midst of an illimitable ocean of inexplicability. Our business in every generation is to reclaim a little more land.

THOMAS H. HUXLEY



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The Andromeda galaxy. Does this galaxy contain infinitely many stars?

QUESTION OF THE DAY:

What comes to mind when you hear the word “*infinity*”?

Write your thoughts or questions on a piece of paper.

Infinity



Infinity...



...it's not BIG...

...it's not HUGE...

...it's not TREMENDOUSLY LARGE...

...it's not EXTREMELY
HUMONGOUSLY ENORMOUS...

...it's

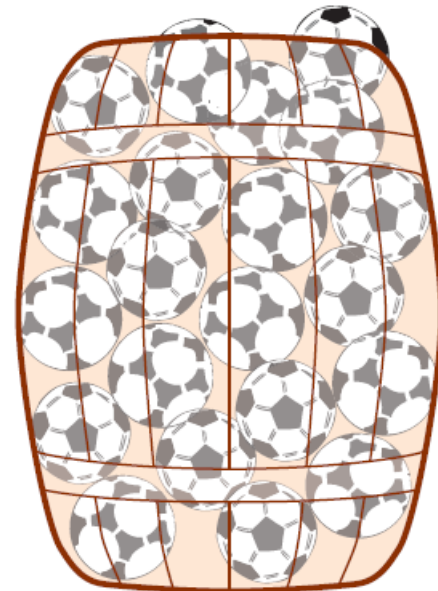
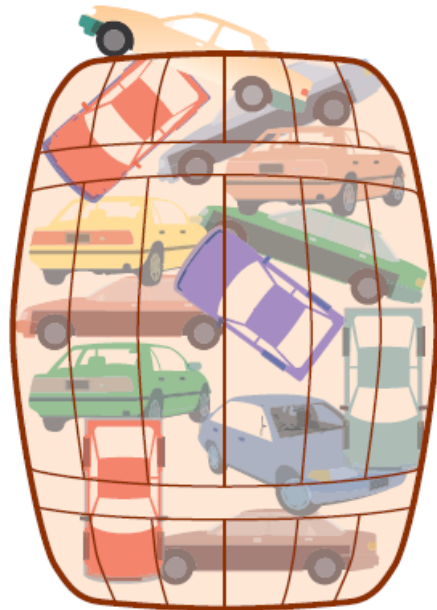
ENDLESS!

- What does it mean for a set to be “*finite*”?
- How do you compare the size of two sets?



One-to-One Correspondence

- Suppose we have a huge barrel full of Volvos and a huge barrel full of Soccer Balls.
- We want to know if there are more Volvos than soccer balls, more soccer balls than Volvos, or the same number of each.
- How could we decide?



One-to-One Correspondence



- Two collections of objects are equally numerous, precisely if there is a one-to-one correspondence between the elements of the two collections.



Homework

- Read 3.1 Beyond Numbers pgs. 140-146.
- Mindscapes 3.1 #4, 8, 14, 16
- Famous Mathematician
- The Math Book Presentation