INTRODUCTION
Low vision often slows reading because visual impairments limit the visual span (the number of letters recognized in each glance). A reduced visual span places a bottleneck on visual processing that directly limits reading performance (Legge, 2007). Can this limitation be alleviated using abbreviations?

With abbreviations...
- fewer eye movements are needed
- Abbreviations take advantage of the redundancy in our language to express information using fewer letters. A suitable abbreviation scheme may increase low-vision reading speeds by about 35% (Legge, et al., 1999).

Current study
We have assessed the potential for abbreviations to help reading with low vision.

In the absence of a suitable abbreviation scheme, we abbreviated numbers written as words (e.g., twenty three) with their digit equivalents (e.g., 23). Using digits was convenient for this study; digits are familiar, easy to read, and fewer letters are affected by crowding.

METHODS
Reading was simulated using blurring goggles that, on average, increased acuity print size from .04 to .065 logMAR.

The text consisted of passages that contained many numbers written in words, and 7 syllables when spoken.)

Participants were required to read the digit and word versions of the numbers in the same way (e.g., 2006 is read as ‘two thousand and six.’)

RESULTS
Abbreviated texts will require fewer eye movements to navigate through the text, resulting in faster reading. They are mostly beneficial for shortening information as a larger span without abbreviations.

CONCLUSION
A suitable abbreviation scheme may increase low-vision reading speeds.

In the meantime, simply converting numbers to their digit equivalents could produce slight speed benefits for some low-vision readers.

Future work
There are several considerations that would need to be addressed before we can determine the optimal abbreviation scheme. For example, we would need to consider the maximum amount of text that can be read in a single glance. Additionally, we would need to consider the amount of text that is required to be read in a single glance. Finally, we would need to consider the amount of text that is required to be read in a single glance.

REFERENCES