



# Word Engine Interchange Programs

[www.lexica.com/interchange](http://www.lexica.com/interchange)

# Challenge No. 1



To comprehend an Interchange textbook a student must know a minimum of 1,356 general English words.

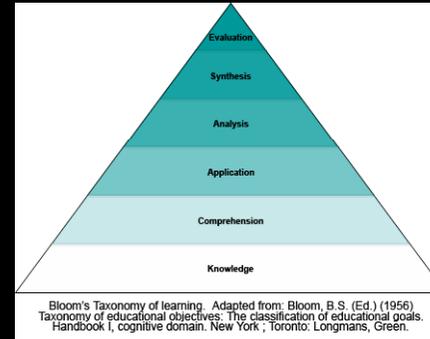
Typically 80% of these words are known to students and about 20% are unknown.

Examples of little known Interchange words include...

hazel  
marinate

mar  
plagiarism

## Challenge No. 2



Each student has a different vocabulary ability.

Which *specific* words does each student need in order to increase comprehension?

## Challenge No. 3



Even if we knew which words each student needs, the classroom is not well suited to individual vocabulary study.

What can be done?



V-Check®

An accurate and reliable  
vocabulary test.

## Solution No. 1 V-Check

Regardless of ability, from beginner to advanced, V-Check will identify the specific vocabulary needs of each learner.

V-Check then prepares a personal list of target words for each student - the exact words needed to increase comprehension fast.



Learning Tools  
Flashcards & Games



## Solution No. 2 Learning Tools

Online flashcards and games rapidly teach vocabulary needed to increase each student's comprehension via PCs and mobile phones.

All learning tools use spaced-repetition to insure long-term memory retention.



## V-Admin

Automatically organizes V-Check scores and progress data.

# Solution No. 3 V-Admin

V-Admin will allow teachers to monitor student coverage scores and learning progress.

Coverage scores help teachers to accurately place each student into a supportive learning group with a good mix of abilities.

# Lexical coverage analysis



Coverage describes the percentage of known words in a text.

If there are too many unknown words the meaning of the text cannot be understood.

How many is too many?

# Interchange text at 80 percent coverage

13 of 65 words missing

The word `ipt` comes from an old English `gains` word that means to give. It's both a `onun` and a verb.

Americans usually `ipt` people in places like `rurettsaans`, hotels, `pirasrot`, and hair `solsan`.

People who work in these places often get `aipd olw gwase`.

A `ipt` shows that the customer is `sleaped` with the service. Sometimes it's hard to know how much to `ipt`.

# Interchange text at 95 percent coverage

3 of 65 words missing

The word **tip** comes from an old English **gains** word that means to give. It's both a **noun** and a verb.

Americans usually **tip** people in places like **restaurants**, hotels, **airports**, and hair solsan.

People who work in these places often get **paid low** gwase.

A **tip** shows that the customer is **pleased** with the service. Sometimes it's hard to know how much to **tip**.

# Universal coverage thresholds

Below 80 percent coverage, reading comprehension is almost impossible.

(Hu & Nation, 2001)

Above 95 percent coverage, it becomes possible to read without using a dictionary.

(Laufer, 1989)

# The Goal



The goal is to get as many students as possible to 95% coverage of their Interchange textbook as quickly as possible.

How can we best do that?

# Corpus analysis

## Ex: Interchange 1

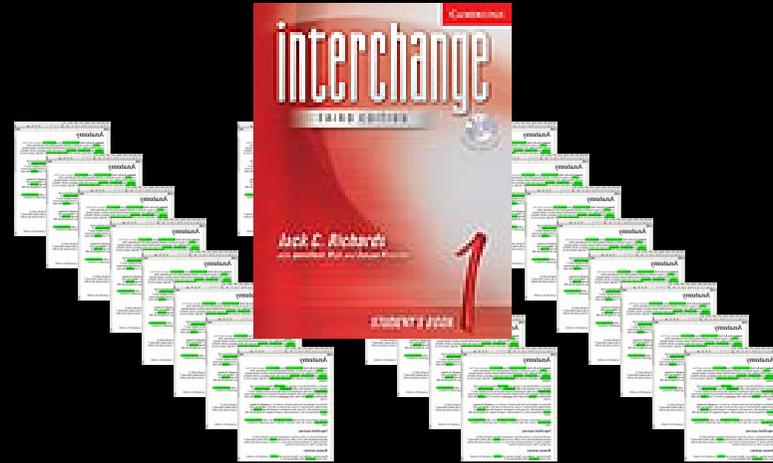
25,989 total words

1,734 different words

1,345 words provide 99% coverage of all content

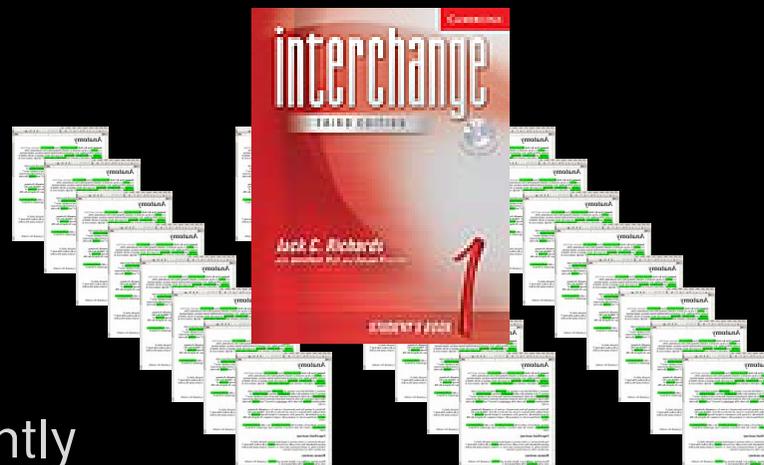
886 words provide 95% coverage of all content

Our research shows that Japanese students will typically lack from 300 to 900 words that frequently occur in their assigned Interchange text.



# Corpus analysis

## Ex: Interchange 1

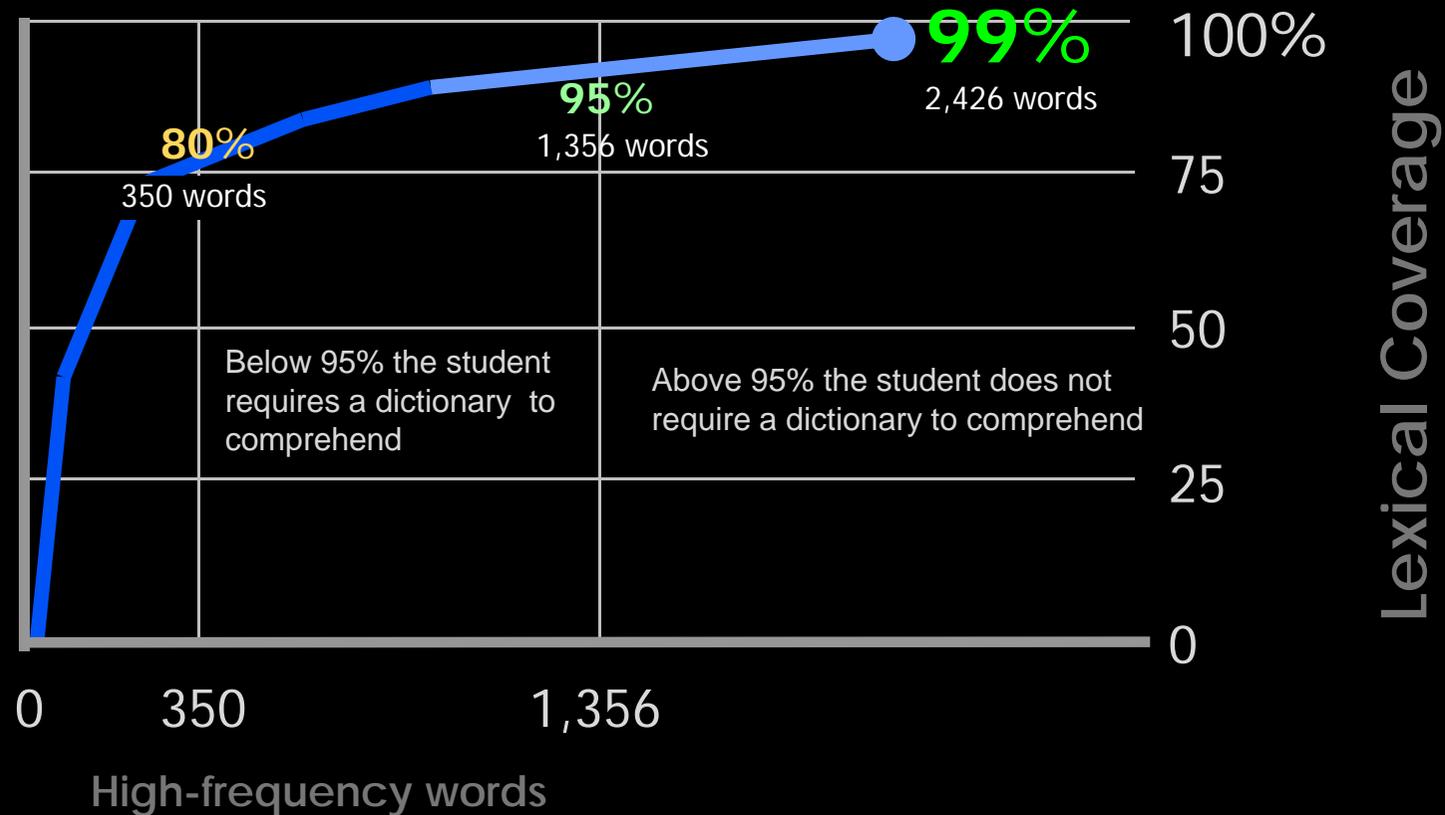


'conversation' occurs frequently

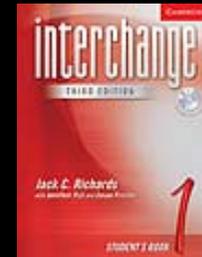
'teacher' is seldom used

The most frequently occurring words (high-frequency vocabulary) always contribute the most to coverage.

# Interchange Book 1: Frequency and Coverage



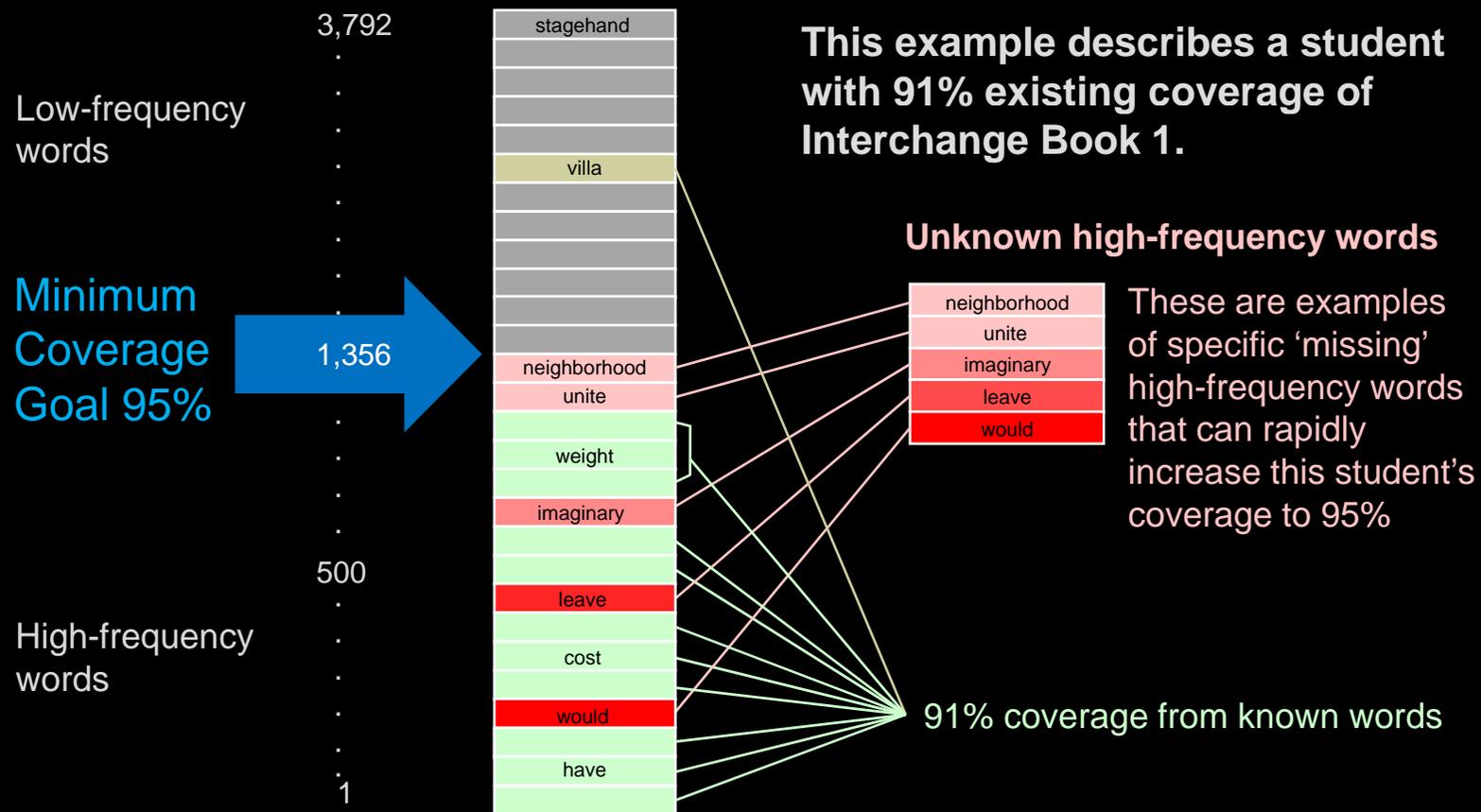
Corpus analysis tells us which words are needed to comprehend, for example, Interchange Book 1.



V-Check identifies which specific words each student is missing so that they can focus on acquiring them and thereby rapidly increase their coverage and comprehension.

# V-Check prepares a personal target word list for each student based on their needs

Interchange Book 1 words ranked by frequency of occurrence

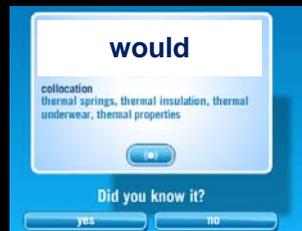


Word Engine creates an optimal sequence of personal target words

neighborhood
unite
imaginary
leave
would

Word Engine starts teaching from the highest frequency unknown words

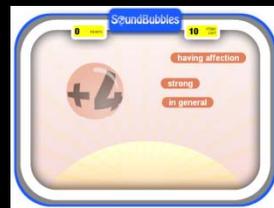
# Online learning tools teach multiple aspects of word knowledge



Definitional knowledge



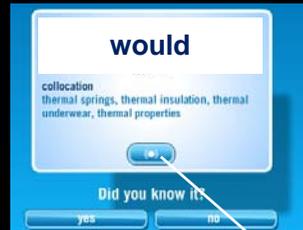
Visual recognition speed (automaticity)



Aural recognition speed (automaticity)

neighborhood
unite
imaginary
leave
would

# Definitional knowledge



*n* would

used to express a request, offer, or preference politely

Click to hear it

# Visual recognition speed



used to express a request politely

would

if

where

# Visual recognition speed – Multilingual



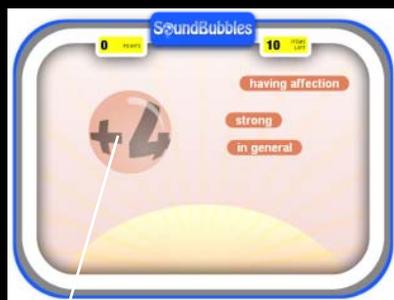
～していただけませんか

would

if

where

# Aural recognition speed



Click to hear  
it pronounced

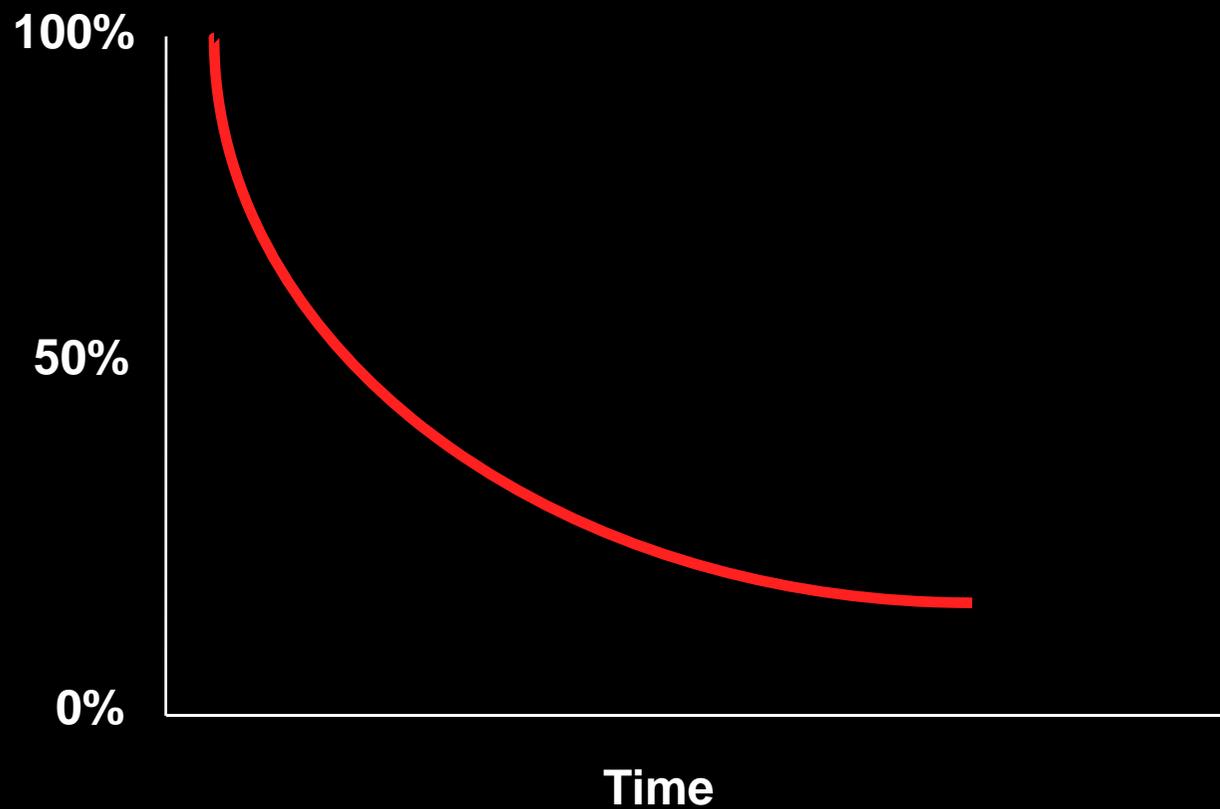
“unite”

To bring together

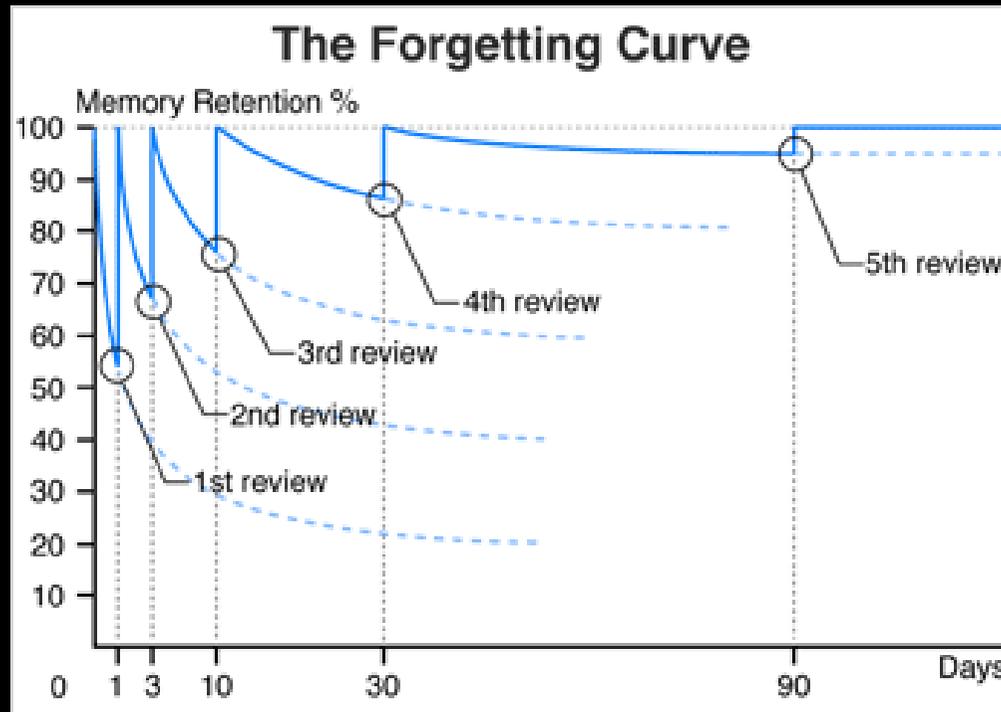
A liquid

Pick something up

# How do we overcome short-term memory loss?



# Dr. Ebbinghaus' Forgetting Curve



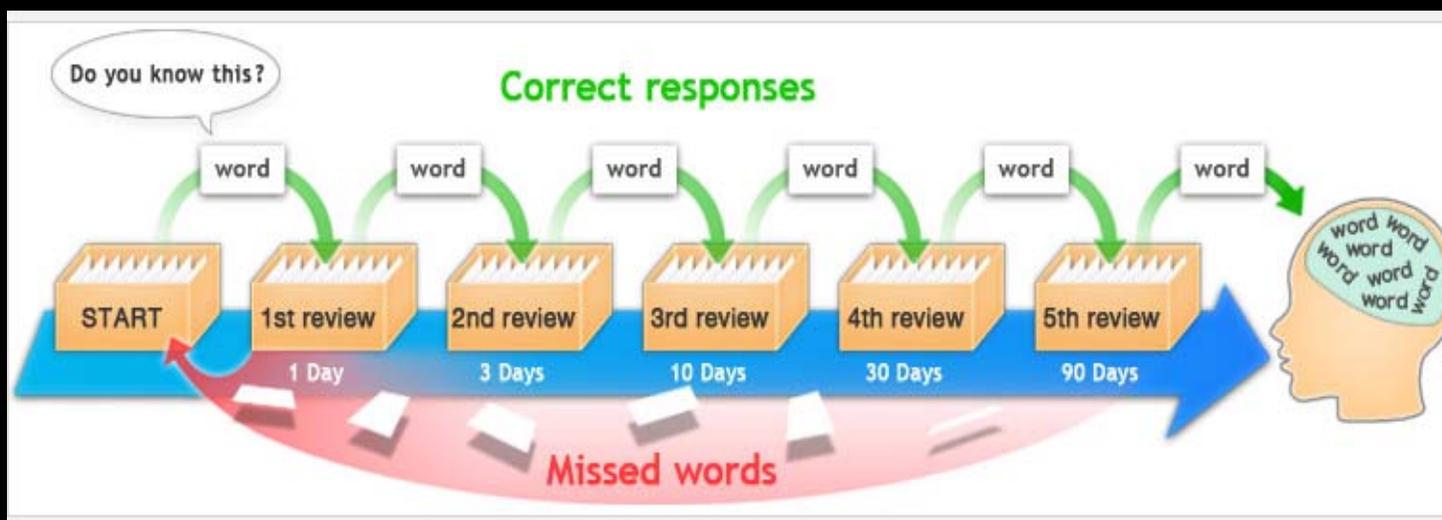
Ebbinghaus (1885), Leitner (1972), Pimsleur (1967), Mondria, (1994)

100+ years of memory research supports all spaced repetition systems

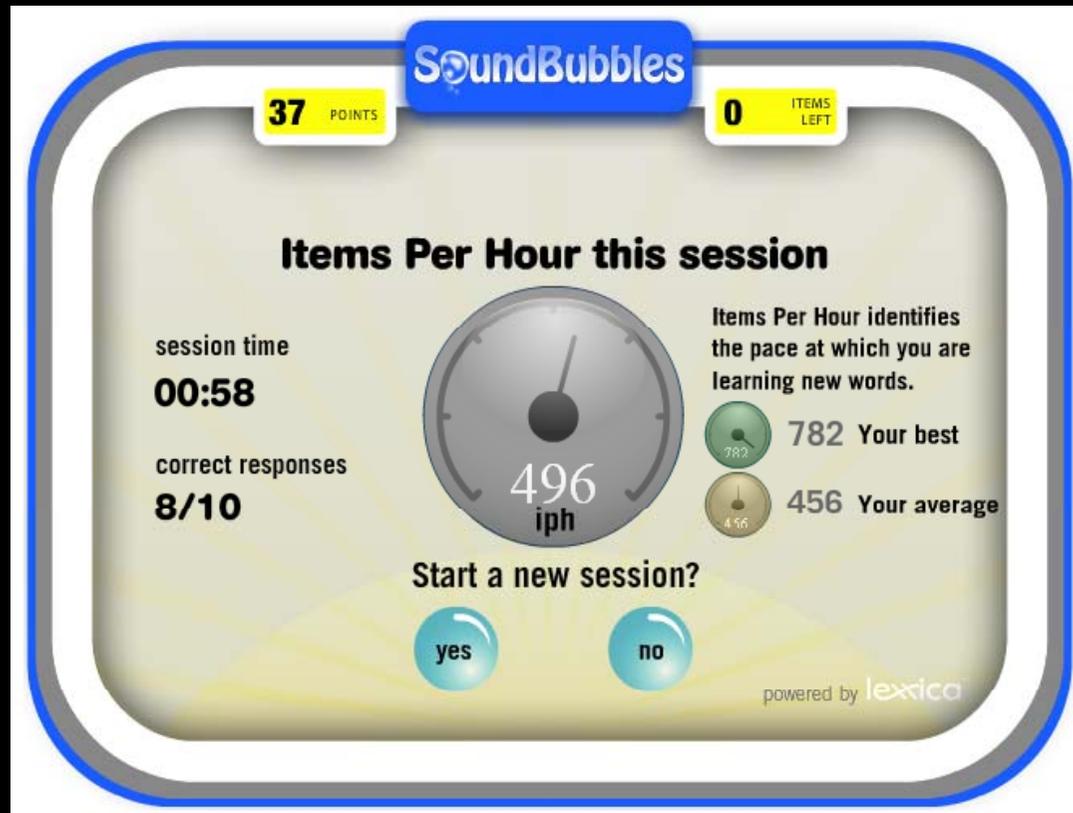
# A personal spaced repetition database

The spaced repetition approach automatically repeats each new word at increasing time intervals until it is fully acquired.

Any missed words will be repeated until they are fully learned.



# Session reports provide progress feedback





# Word Engine Interchange Programs

Now available at: [www.lexica.com/interchange](http://www.lexica.com/interchange)