Artisanal Procedurality in Losswords

Alexander King & Eric Zimmerman
Local No. 12

Alexander King

Eric Zimmerman

LOSSWORDS

A GAME OF LITERARY PORTIONS

Pride & Prejudice — Austen

Alice IN WONDERLAND — Carroll

Swann's Way — Proust

Utopia — More

20,000 Leagues Under the Sea — Verne

The Jungle Book — Kipling

A Modest Proposal — Swift

Poems — Owen

Tender Buttons — Stein

The Time Machine — Wells

The Tempest — Shakespeare

Goblin Market — Rossetti

LOCAL NO. 12 · UNION · DESIGN · PLAY

LOSSWORDS

37
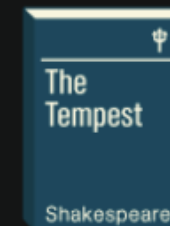
DAILY CHALLENGE

0/3   TO A RARE BOOK!

CURRENT BOOK

Pride & Prejudice
Austen

1/5   CHAPTERS UNTIL
THE NEXT VOLUME

FEATURED

$1.99

Sultana's Dream
HOSAIN

Optimism
AN ESSAY
KELLER

The Time Machine
WELLS

Utopia
MORE

Alternative Futures

TIPS FOR THE DISCERNING READER

Dear Reader, Your rating for each chapter and book you finish is based on how much ink you earned per page.

POEMS

CHAPTER COMPLETE
LOSSWORDS

CHAPTER 6
Wild Nights! Wild Nights!

"Rowing in Eden—Ah—the Sea!
Might I but moor—tonight—In thee!"

SHARE IT!

INK EARNED   18/20

798

★★★★☆   TWIST! + 40

? HINTS   5/5 FULL!

3 LEVEL UP!   5/5

NEXT: CHAPTER 7

"Simplicity"

TO LIBRARY   ### NEXT CHAPTER

Left screen:

37

Pride & Prejudice

INFO

Austen
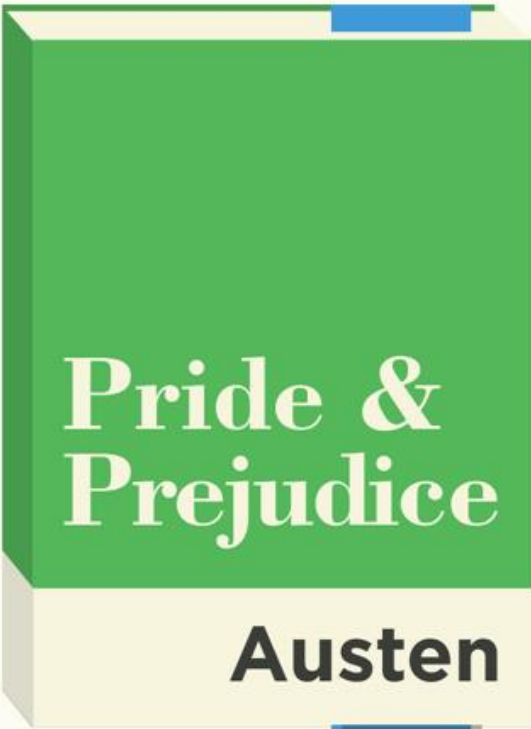
1/35 PLAY

VOLUME 1

1. It is a truth universally acknowledged... •••••
2. Netherfield Park is Let at Last
3. What is his Name?
4. But Consider Your Daughters

HOME LIBRARY STORE VITA ⚙

Right screen:

37 **LIBRARY**

SORT BY SHELF AUTHOR PROGRESS

NAUTICAL NO-NOS

20,000 Leagues Under the Sea — Verne — 0/60
The Rime of the Ancient Mariner — Coleridge — 0/40
Heart of Darkness — Conrad — 0/20
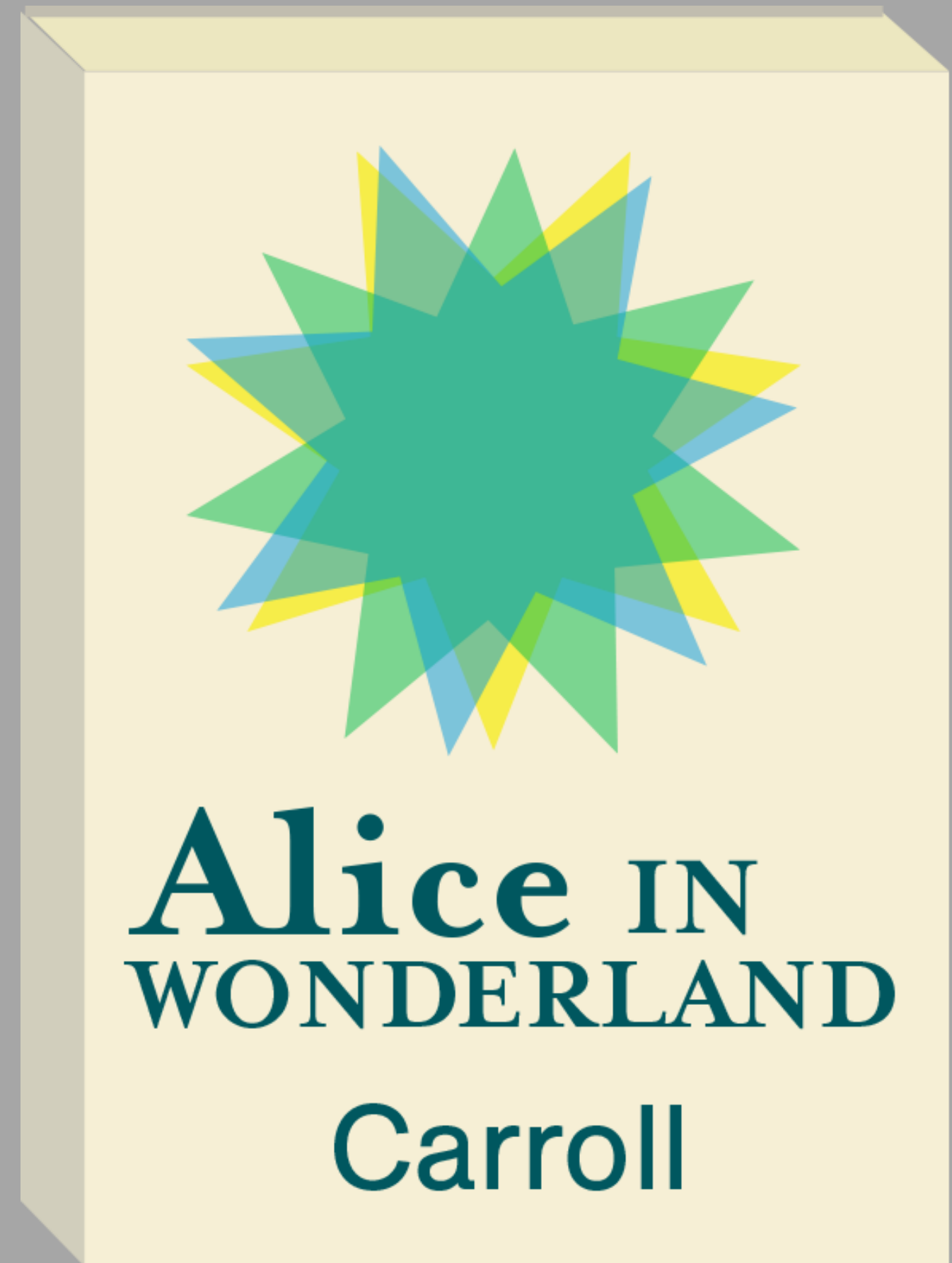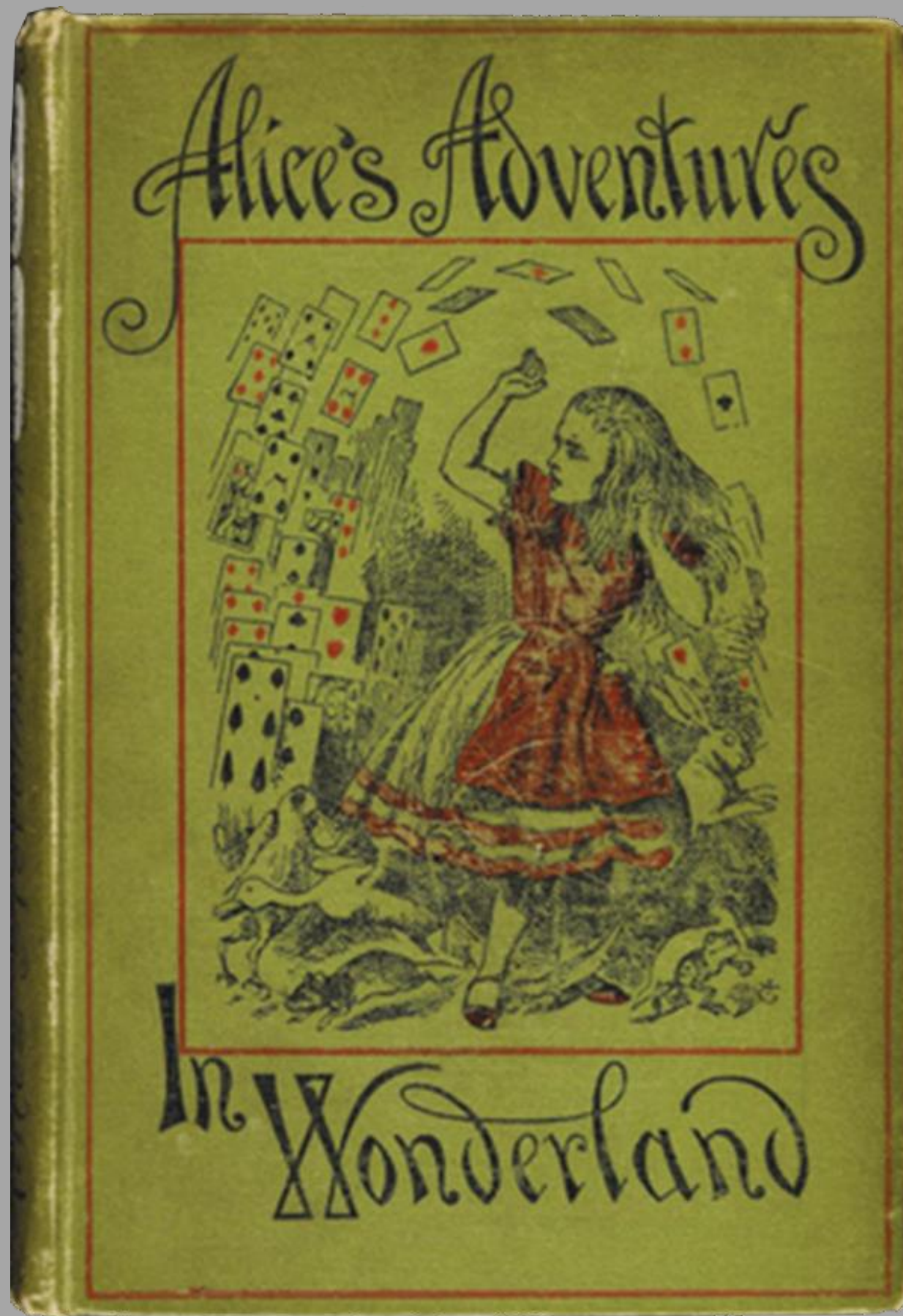The Tempest — Shakespeare — 0/20

HUMAN OR MONSTER?

Frankenstein — Shelley — 0/50
The Jungle Book — Kipling — 0/50
Goblin Market — Rossetti — 0/30
Midsummer Night's Dream — Shakespeare — 0/20

ALTERNATIVE FUTURES

Sultana's Dream — Hosain — 0/20
Optimism AN ESSAY — Keller — 0/50
The Time Machine — Wells — 0/50
Utopia — More — 0/50

ISN'T IT IRONIC

HOME LIBRARY STORE VITA ⚙

Alice's Adventures In Wonderland

Alice IN WONDERLAND

Carroll

I

Down the Rabbit-Hole

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, "and what is the use of a book," thought Alice, "without pictures or conversations?"

So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

There was nothing so *very* remarkable in that; nor did Alice think it so *very* much out of the way to hear the Rabbit say to itself "Oh dear! Oh dear! I shall be too late!" (when she thought it over afterwards, it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but, when the Rabbit actually

I

---

2 ANAGRAM — FIND WORDS THAT HAVE BEEN ANAG…

Alice saw begir… to get very tired sitting by her re… on the bank, an… having nothing do: once or twic…

4 SEQUENCE — TOUCH WORDS TO FILL THE BLANKS

Alice was begin… to get ▮ __ __ by her sister on bank, and of ha… nothing to do: … or twice she

3 HUNT — TAP ON THE WORD YOU NEED TO FIND

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she

4 SPELL — PICK LETTERS THAT FILL IN THE BLAN…

▮lic▮ ▮s b▮gir… to g▮t v▮y ti▮… sitting by h▮ si… on th▮ b▮nk, ▮n… h▮ving nothing … onc▮ o▮ t▮ic▮ s…

4 BEGIN — TOUCH WORDS TO FILL THE BLANKS

▮ __ __ __ ge… very tired of sit… by her sister on bank, and of ha… nothing to do: … or twice she

6 SWAP — TOUCH 2 WORDS TO SWAP THEM

Alice bank, beginning to tired of get very sitting by her sister on the was and of having nothing to do: once or twice she

I

Down the Rabbit-Hole

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, "and what is the use of a book," thought Alice, "without pictures or conversations?"

So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

There was nothing so *very* remarkable in that; nor did Alice think it so *very* much out of the way to hear the Rabbit say to itself "Oh dear! Oh dear! I shall be too late!" (when she thought it over afterwards, it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but, when the Rabbit actually

1

SWAP
TOUCH 2 WORDS TO SWAP THEM

Alice bank, beginning to tired of get very sitting by her sister on the was and of having nothing to do: once or twice she

HINTS x5   0

SWAP
TOUCH 2 WORDS TO SWAP THEM

Alice the twice to get very tired of sitting do: her sister on was to once of having nothing bank, by and or beginning she

HINTS x5   0

Artisanal Procedurality

Artisanal Procedurality

- *Direct control*
- *High Quality*
- *Labor-intensive*
- *Doesn't scale*

- *Infinite*
- *Unexpected*
- *Replayable*
- *Also Labor-intensive*
- *Trickier*

Artisanal Procedurality

Artisanal Procedurality

DIFFICULTY

Artisanal Procedurality

Artisanal Procedurality

Artisanal Procedurality

Name	Down the Rabbit-Hole
Work	Alice's Adventures in Wonderland ▲▼
Sequence	1
	☐ Speedread
Quote	Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do...
Text	Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, 'and what is the use of a book,' thought Alice 'without pictures or conversations?' So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

Artisanal Procedurality

SWAP
TOUCH 2 WORDS TO SWAP THEM

Alice bank, beginning to tired of get very sitting by her sister on the was and of having nothing to do: once or twice she

HINTS x5   0

SWAP
TOUCH 2 WORDS TO SWAP THEM

Alice the twice to get very tired of sitting do: her sister on was to once of having nothing bank, by and or beginning she

HINTS x5   0

Artisanal Procedurality

MODE

MODE	FIX	Diff: Tutorial2	Diff: Easy1 (3)	Diff: Easy 2 (4)	Diff: Med 1 (5)	Diff: Med 2 (6)	Diff: Hard 1 (7)	Diff: Hard 2 (8)	Diff: Expert 1 (9)	Diff: Expert 2 (10)	D
UNSCRAMBLE		3 words	3 words	4 words	5 words	6 words	7 words	8 words	9 words	10 words	1
FILTER		1 correct word	2 correct words	3 correct words	4 correct words	5 correct words	5 correct words	6 correct words	7 correct words	8 correct words	1
		1 dupe	2 dupes	3 dupes	4 dupes	5 dupes	5 dupes	6 dupes	7 dupes	8 dupes	1
FILL		2 words/slots	3 words/slots	4 words/slots	5 words/slots	6 words/slots	7 words/slots	8 words/slots	9 words/slots	10 words/slots	1
REARRANGE		3 lines off	3 lines off	4 lines off	4 lines off	5 lines off	5 lines off	6 lines off (max)	6 lines off (max)	6 lines off (max)	6
FINISH / BEGIN / SEQUENCE		2 words/slots	3 words/slots	4 words/slots	5 words/slots	6 words/slots	7 words/slots	8 words/slots	9 words/slots	10 words/slots	1
SPELL		1 real letters	3 real letters	4 real letters	5 real letters	6 real letters	8 real letters	10 real letters	12 real letters	14 real letters	1
		2 decoys	5 decoys	6 decoys	8 decoys	10 decoys	12 decoys	14 decoys	14 decoys	12 decoys	1
INSERT		1 word	1 word	1 word	2 words	2 words	3 words	3 words	4 words	5 words	6
INSERT TWO		1 pair	1 pair	1 pair	2 pairs	2 pairs	3 pairs	3 pairs	4 pairs	5 pairs	6
SWAP		4 words	4 words	6 words	6 words	6 words	8 words	8 words	10 words	10 words	
REMOVE		add 1 word	add 1 word	add 2 words	add 3 words	add 4 words	add 5 words	add 6 words	add 8 words	add 10 words	

Artisanal Procedurality

Artisanal Procedurality

Artisanal Procedurality

Artisanal Procedurality

Artisanal Procedurality

Difficulty Formula

This formula outputs the difficulty index for a given page. Inputs are the number of pages in the chapter, the min and max difficulty intended, and player level.

RawDifficulty = (m * page#) + minDiff + cosine(k*page#)

page#	*the page to calculate difficulty for*	
maxpages	*the number of pages in the chapter*	
minDiff	*difficulty to start at (typically 2, but can be bumped by player level)*	
maxDiff	*difficulty to end at (usually 11)*	
m	*(maxDiff-minDiff)/(maxpages -1)*	
k	*steepness coefficient. 1.5 seems good*	***New: Add 0.5 to k if maxpages is odd***

DifficultyActual = Clamp(Round(RawDifficulty,0),minDiff,maxDiff)

(ie, the formula outputs a non-integer that might be higher or lower than maximum, so needs to be rounded and clamped)

Example

page#	see table below	*the page to calculate difficulty for*	2.404070535
maxpages	8	*the number of pages in the chapter*	4.737403868
minDiff	3	*difficulty to start at (typically 2, but can be bumped by player level)*	
maxDiff	7	*difficulty to end at (usually 11)*	
m	0.5714285714	*(maxDiff-minDiff)/(maxpages -1)*	
k	1.5	*steepness coefficient. 1.5 seems good. Add 0.5 to k if maxpages is odd.*	

Artisanal Procedurality

Alice's Adventures in Wonderland

Lewis Carroll

CHAPTER 1/40:

Down the Rabbit-Hole

BEGIN

0/6

Artisanal Procedurality

TWIST FREQUENCY in chaps 2-9 of a volume:

First time through the volume: num TWISTS

Player level	1	2	3
1	0%	0%	0%
2-4	50%	50%	0%
5-15	20%	60%	20%
16+	0%	75%	25%

The percentage chance shown above is the chance for a given volume to have 1, 2, or 3 TWIST chapters somewhere in chapters 2-9 of that volume. The program determines this when the player first opens the volume and then determines which chapters will be TWISTS the first time they are played and completed. Once a chapter has been completed, its chance is determined according to the logic below.

Subsequent plays of a chapter: % chance for a TWIST

Player level		non-TWIST cap
1	0%	n/a
2-4	25%	5
5-15	30%	4
16+	35%	3

The percentage chance shown above is the chance for any replayed chapter to be a TWIST chapter. Note that the player will NEVER have two TWIST chapters in a row, so the percentage chance for a replayed chapter to be a TWIST chapter after opening a replayed TWIST chapter is zero.

The non-TWIST cap is the maximum number of non-TWIST replayed chapters that a player can reach before the program automatically gives the player a TWIST chapter. These frequencies and caps are not affected in any way by chapters being opened for the first time.

TWISTS	difficulty rating	min. # of modes	selection weight
Speedread	4	1	4x
Pages in reverse order	3	1	2x
Pages in scrambled order	3	1	2x
Cycle between 2 modes, change every level	2	2	
Cycle between 3 modes, change every level	2	3	
Cycle between 4 modes, change every level	3	4	
Cycle between 2 modes, change every 2 levels	1	2	
Cycle between 3 modes, change every 2 levels	1	3	
Random mode, new every level	3	5	
Random mode, new every 2 levels	2	4	
Random mode, new every 3 levels	2	4	
Start with 1 mode, switch halfway to second mode	1	2	
Start with 1 mode, switch in thirds to new modes	1	3	
Start on INSANE difficulty	4	1	3x
[adding speedread to a mode]	+4		4x
[adding reverse page order to a mode]	+3		2x
[adding scrambled pages to a mode]	+3		2x
[adding insane starting difficulty]	+4		3x

"Selection weight" above is meant to be a factor that increases the chances for that twist being selected. We need it because the puzzle-switching modes are all a bit similar, so we want the more different ones to be selected more often.

NEW IDEAS FOR TWISTS

Each mistake costs you 2 ink	1	1
Each mistake costs you 3 ink	2	1
Perfection - one mistake costs you all ink	3	1

PICKING A TWIST

Player level	regular twist level	boss twist level
1-3	1	2
4-9	1,2	2,3
10-16	1,2	2,3,4
17-21	1,2,3	3,4,5
22+	2,3,4	3,4,5,6

Within a range of possible twist difficulty levels, there is an equal chance for each listed difficulty level to be selected.

JUST TO CLARIFY THINGS:

The first time through a volume:

first chapter	is never a TWIST
middle chapters	has a chance to be a regular TWIST
10th chapter	is always a boss TWIST

In subsequent replays of a completed chapter:

first chapter	has a chance to be a regular TWIST
middle chapters	has a chance to be a regular TWIST
10th chapter	has a chance to be a boss TWIST

Once a chapter has been identified as a TWIST

It will ALWAYS remain a TWIST until completed

(even if it is a chapter being replayed)

Artisanal Procedurality

Artisanal Procedurality

Artisanal Procedurality

LIBRARY

1037 0

Lyrics

INFO

SAPPHO

0/20 PLAY

VOLUME 1

1. The stars...
2. Come now, divine shell...
3. Subtle fire
4. Evening...
5. No other girl
6. Slumber streams

HOME LIBRARY PUZZLES BOOKSTORE

2 2 / 2

The stars about the fair moon in their turn hide their bright face when she at about her full lights _ all _ earth _ silver. _

up with

HINTS x4 4

Artisanal Procedurality

OPTIONS

23361 5

WHAT KIND OF READER ARE YOU?

RELAXED — No time limit on each page

PAGE TURNER — Play quickly and earn more ink

SPEED READER — A serious challenge - earn extra bonus ink

MUSIC   SOUND

TEAM

CURATORIAL STATEMENT

FEEDBACK

v1.0 (373)

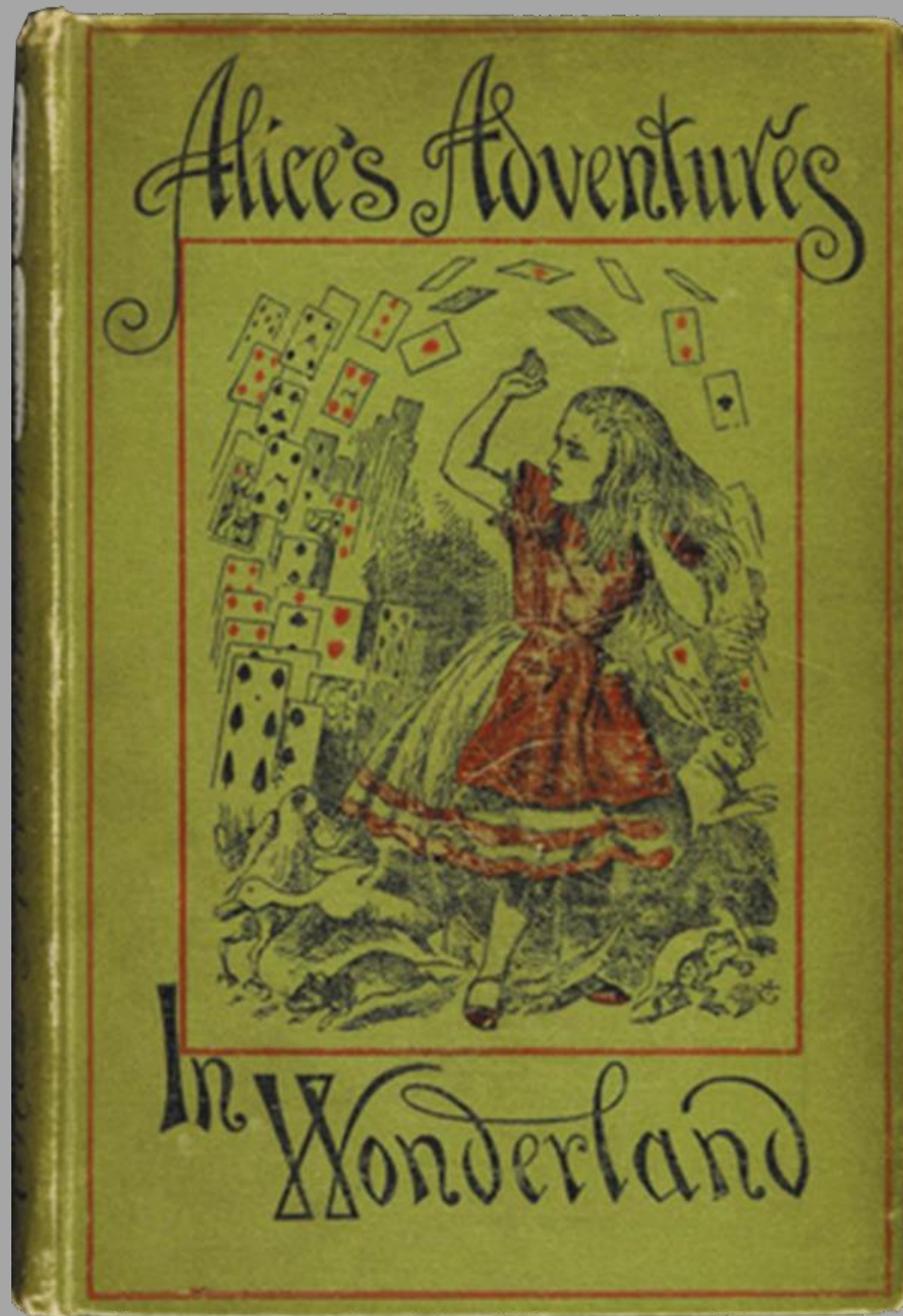HOME LIBRARY PUZZLES BOOKSTORE

Artisanal Procedurality

DIFFICULTY

Artisanal Procedurality

DIFFICULTY

- *Book curation*
- *Chapter selection*
- *Puzzle levels*

- *Puzzle scaling*
- *Difficulty progression*
- *TWISTs*

Artisanal Procedurality

LOSSWORDS

A GAME OF LITERARY PORTIONS

Pride & Prejudice — Austen	Alice in Wonderland — Carroll
Swann's Way — Proust	Utopia — More
20,000 Leagues Under the Sea — Verne	The Jungle Book — Kipling
A Modest Proposal — Swift	Poems — Owen
Tender Buttons — Stein	The Time Machine — Wells
The Tempest — Shakespeare	Goblin Market — Rossetti

LOCAL NO. 12 · UNION · DESIGN · PLAY

Alexander King
@LiterallyAKing

Eric Zimmerman
@zimmermaneric

OFFICIAL SELECTION
INDIE MEGA BOOTH
GDC SHOWCASE 2019