

LEVEL I: SINGLE SYLLABLE WORDS

Reading, Phonics, and Braille

VISUAL VERSION

A partnered approach to learning for parents, teachers,
and students with no previous exposure to braille

Cheri Montgomery

S.T.M. Publishers
Nashville, TN

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PREFACE

Reading, Phonics, and Braille, Level 1 is designed to help students read and spell single syllable words using grade 1 braille. Level II covers diphthongs and polysyllabic words. The visual version gives sighted individuals the ability to learn braille alongside those with visual impairments. A partnered approach to the study of braille is of particular importance as braille literacy is in steep decline. Research published by the National Federation of the Blind confirms the importance of braille and provides detailed information regarding its decline. It is available at www.bit.ly/3FiKgls.

Hard copy tactile and hard copy visual versions are available. The hard copy tactile version is published in two parts: textbook and workbook. The textbook contains spelling rules, phonetics, and reading assignments. The workbook contains phrases, sentences, and a short story. The visual version combines textbook and workbook in one resource. Instructor's notes are included.

The resources needed to create the exercises in this text originated from research developed for the publication of the *Lyric Diction Workbook Series* and the *IPA Scramble* game app by Montgomery. Computer search functions and her database of more than 87,000 English words with phonetic symbols were used to organize a graded approach to learning the spellings and phonetic symbols of English while learning to read braille. Additional resources for singers with blindness are available on the "braille resources" page at www.stmpublishers.com.

The organization of this text provides a unique approach to learning to read while using braille:

1. A simplified phonetic system is used so that phonetic symbols and the spellings of words can be introduced together.
2. Each unit is cumulative in nature. Symbols introduced in previous units are

included in the exercises of subsequent units.

3. Five sections in each unit facilitate an efficient study of reading and braille. They include: an introduction to new braille symbols with warm-up exercises, a spelling list, a phonetic exercise, a group assignment, and individual homework assignments for up to 12 students (the 12 assignments could also be used as additional practice for individual study).

This text follows the Moore teaching model. The Moore Method is an interactive approach to instruction designed by Robert Lee Moore, a famous topologist who first used the method at the University of Pennsylvania in 1911. His methodology engages students in the learning process by giving each class member the opportunity to present homework assignments.

Each class meeting follows a daily routine. First, class begins with students reading an assigned phrase from the 12 phrases provided in each unit. Second, the instructor introduces new material in a brief lecture. Third, the instructor leads the group in warm-up exercises and a braille reading assignment. Fourth, each student is given a unique braille reading assignment to present in the following class meeting. Note: the 12 exercises in each unit are suitable for individual study as well. The reading assignments in each unit provide plenty of additional practice.

Reading, Phonics, and Braille is designed to advance braille literacy, provide a partnered approach to learning, and create an engaging study.

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ACKNOWLEDGMENT

I am grateful for braille instruction from Steve Norman, braille/technology instructor at the Tennessee Rehabilitation Center. He assisted with research that culminated in articles published by the National Association of Teachers of Singing, *Journal of Singing*; *MultiBriefs*; and *Vanderbilt University News*. He was instrumental in testing the Kindle version of three diction workbooks written for singers with blindness. His willingness to share his expertise and extensive experience with the braille system and associated technology is much appreciated.

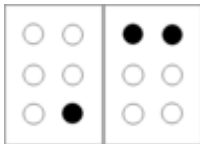
INTRODUCTION TO BRAILLE

Braille is a tactile writing system created in 1824 by Frenchman Louis Braille. Each braille character consists of a cell with raised or lowered dots. Characters are distinguished by the number and arrangement of raised dots within each cell. The six dots are organized in two columns. There are three dots in the left column and three dots in the right column (imagine a 2x3 Lego brick). The dots are numbered counting from top to bottom starting with the left column.

Braille Cell



Each braille cell is assigned a number name according to the dot configuration within the cell. For example, the braille symbol for *c* is named dots 14 (dots 1 and 4 are raised for the braille representation of *c*). Uppercase letters are indicated by placing a braille dots 6 before the letter. The braille representation for uppercase *C* is a dots 6 cell followed by a dots 14 cell.



Braille consumes a lot of space. Certain characters require more than one cell. The 6-dot cell system is used for reading, math, and music. The 8-dot cell system provides an extension. A third row of dots reduces the line by including additional information, like capitalization, beneath the cell (imagine a 2x4 Lego brick).

There are three levels of encoding for English braille. Grade 1 provides a letter-by-letter representation of any given spelling, grade 2 includes abbreviations and contractions, and grade 3 contains various symbols that can be customized to suit the individual needs of the user. This text provides a study of grade 1 braille.

PATTERNS IN BRAILLE

Braille is an intuitive system designed for easy memorization of symbols. Braille letters of the alphabet correspond with numbers: *a* is 1, *b* is 2, *c* is 3, *d* is 4, *e* is 5, *f* is 6, *g* is 7, *h* is 8, *i* is 9, and *j* is 0. A numeric indicator precedes a braille number to distinguish it from a letter of the alphabet. The numeric indicator is a dots 3456 cell.

Numeric
Indicator
#



The braille alphabet follows a pattern. The raised dots for letters *a* through *j* are similar to letters *k* through *t* (an added dots 3 distinguishes *k* through *t*). The raised dots for letters *u*, *v*, *x*, *y*, and *z* are similar to letters *a*, *b*, *c*, *d*, *e* (an added dots 36 distinguishes *u*, *v*, *x*, *y*, and *z*). Notice that the letter *w* was not included. It was omitted by Braille since *w* is not a spelling of the French language. The letter *w* is a dots 2456 cell.

The pedagogical approach of this text is based on a newly created phonetic system that consists of uppercase and lowercase letters. Letters *a*, *i*, *b*, *d*, *g* are introduced first since they produce a sufficient word bank and complimentary phonetic study. The remaining letters are introduced incrementally to align with the accessible phonetic system and the spellings of words.

LEARNING TOOLS

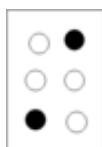
Use a 2x3 egg carton and ping pong balls to recreate braille symbols. Lego bricks also provide excellent learning aids. Purchase a 32x16 base plate, 30 2x4 bricks, and 100 1x1 round dots. Recreate the braille cells using the 1x1 bricks for dots and 2x4 bricks for cells (the bottom row should remain blank). Place the cells in alphabetical order on the base plate (a through *j* on row 1, *k* through *t*

on row 2, and *u v x y z w* on row 3). After the letters are memorized in alphabetical order, remove the cells from the base plate, place them in a sandwich bag, and select randomly to test your memory.

SPECIAL SYMBOLS

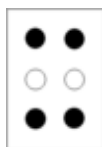
There are three symbols needed to navigate the braille portions of this text: the numeric indicator, the forward slash, and the letter *x*. The numeric indicator helps the reader identify numbers (see examples on the right side of this page). A forward slash is placed on either side of phonetic symbols.

/:



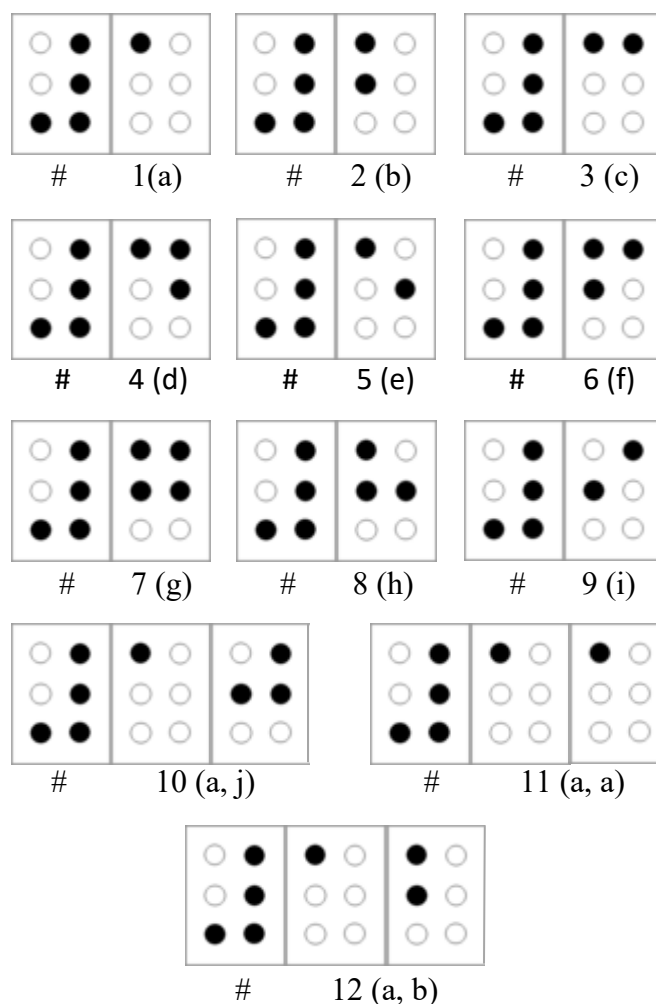
The letter *x* acts as a place marker or tracking line for discovering new braille symbols. The dot configuration of an *x* cell marks the outer boundaries of a cell. Imagine the typed version of an uppercase *X* with dots at the ends of each diagonal line. A braille *x* is dots 1346. This arrangement of dots provides an ideal tactile reference point for other braille symbols.

X:



A line with a group of *x* cells is used to create a tracking line. It indicates the beginning of an exercise. A number between two groups of *x* cells indicates a new line of an exercise.

Students in a group learning environment should memorize the braille number associated with their individually assigned homework. Students may locate their assignment by searching the lines that contain a group of *x* cells (dots 1346) followed by the numeric indicator (dots 3456), the exercise number, then another group of *x* cells. Note the braille symbol for each number: 1 is dots 1, 2 is dots 12, 3 is dots 14, 4 is dots 145, 5 is dots 15, 6 is dots 124, 7 is dots 1245, 8 is dots 125, 9 is dots 24, 10 is dots 1 and dots 245, 11 is dots 1 and dots 1, 12 is dots 1 and dots 12.



CONTENT NOTE

Unique instructional tools are provided on the first page of each unit. Every letter of the braille alphabet has a scented, tactile, taste, and sound association with topics to discuss. QR codes provide audio links to American and British pronunciations of the phonetic symbols.

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ABOUT THE AUTHOR

Cheri Montgomery is an author and lecturer on the topics of voice and diction. She teaches English, Italian, German, French, Latin, Spanish, and Russian lyric diction at the Blair School of Music at Vanderbilt University. Her series of workbooks are available at www.stmpublishers.com.

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UNIT 1:

Spellings and phonetic symbols:

a i b d g
 ⠁ ⠇ ⠃ ⠔ ⠒

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Note: refer to the textbook (page 1, top left corner) for the tactile braille symbols depicted on this page.

INTRODUCTORY NOTES

The first three units of this text introduce the most frequently occurring vowels with consonant sounds that are classified as stops. A stop is formed by constricting and releasing the air flow within the vocal tract: *b, d, g, p, t, k*. Consonants classified as continuants are introduced in the following units. A continuant is a consonant articulated with a continuous flow of breath.

PHONETIC SYMBOLS

Understanding the correlation between spelling and

pronunciation is vital to literacy. The International Phonetic Alphabet (IPA) provides a standardized phonetic system for all languages. This text uses a modified version of the IPA that is ideal for beginning braille readers. Braille phonetic symbols are placed between forward slashes. A forward slash is a dots 34 cell.

The scent, tactile, taste, and sound examples on the chart below provide alternate associations since visual cues are not possible. Associations are a fun part of the lesson for students of any age.

SOUNDS AND SYMBOLS					
ALPHABET LETTER	a  Dots 1	i  Dots 24	b  Dots 12	d  Dots 145	g  Dots 1245
BRILLE PHONETIC SYMBOL	/a/ 	/I/ 	/b/ 	/d/ 	/g/ 
SOUND EXAMPLE	web address 	web address 	web address 	web address 	web address 
SCENT ASSOCIATION	<u>a</u> pple pie	i <u>n</u> cense	<u>b</u> acon	<u>d</u> ogwood <u>d</u>	<u>g</u> arlic
TACTILE ASSOCIATION	<u>s</u> and	i <u>n</u> ch ruler	<u>b</u> ean <u>b</u> ag	<u>d</u> ominoes	<u>g</u> loves
TASTE ASSOCIATION	cran <u>b</u> erry	mi <u>n</u> t	<u>b</u> utterscotch	<u>d</u> onuts	<u>G</u> raham crackers
SOUND ASSOCIATION	<u>s</u> axophone	cy <u>m</u> bals	<u>b</u> anjo	<u>d</u> oorbell	<u>g</u> lockenspiel
CHARACTER ASSOCIATION	<u>a</u> dventurous	i <u>n</u> q <u>i</u> siti <u>v</u> e	<u>b</u> old	<u>d</u> edicated <u>d</u>	<u>g</u> rateful

a i b d g

x x #1 x x

x x / x x / x x / x x # x x # x x # x x

x x / x x / x x / x x

x x a x x a x x A x x /a/

x x i x x i x x I x x /I/

x x b x x b x x B x x /b/

x x d x x d x x D x x /d/

x x g x x g x x G x x /g/

x x #1 x x ab x x /ab/

x x #2 x x ad x x /ad/

x x #3 x x dad x x /dad/

x x #4 x x add x x /ad/

INSTRUCTOR'S NOTES

Important navigational tools are introduced on the first lines of this page. A capital letter indicator is a dots 6 cell. It precedes a letter to indicate upper-case. A numeric indicator is a dots 3456 cell. It precedes a letter to identify it as a number. For example: #a is 1, #b is 2, #c is 3 and so on to #aj which is 10. A forward slash is a dots 34 cell. It precedes and follows phonetic symbols.

Instruct the student to use the right-hand index and middle fingers to read the braille text. The left-hand fingers may follow to verify the braille. If the student struggles to distinguish differences between the cells, have them lighten their touch. Pressed contact interferes with sensory awareness.

This unit may be divided into multiple lessons to manage the many new symbols. Use the associations chart on the preceding page to create a scent, flavor, and activity of the day. Use a Lego plate with bricks and round studs or an egg carton with ping pong balls to recreate the braille cells and spell words.

SCHEDULE SUGGESTION

Day 1: indicators, forward slash, *a*
 Day 2: *i*
 Day 3: *b*
 Day 4: *d*
 Day 5: *g*, spelling words and phrases

x x #16 x x Gib x x /gIb/

#1

dad bag

gag dig

bib bad

#2

dab did

big add

gab bid

a i b d g

x x #1 x x

x x Dad did a gig x x /dad dId x gIg/

x x #1 x x Add a dab x x /ad x dab/

See note
below

x x #2 x x A big bag x x /x bIg bag/

x x #3 x x A bad gag x x /x bad gag/

x x #4 x x A big bib x x /x bIg bIb/

x x #5 x x Add a gig x x /ad x gIg/

x x #6 x x A big ad x x /x bIg ad/

x x #7 x x Dab a bib x x /dab x bIb/

x x #8 x x A bad dig x x /x bad dIg/

x x #9 x x A big bid x x /x bIg bId/

x x #10 x x Add a bag x x /ad x bag/

INSTRUCTOR'S NOTE

The word *a* is needed for the creation of phrases and sentences. It is a necessary sight word for beginning readers. The phonetic symbol for *a* is /x/. The /x/ is the stall vowel in English. It is the *uh* sound that we make when we do not know what to say. The /x/ sound is also found in unstressed words and syllables. This vowel with its multiple spellings is introduced in unit 23.

x x #11 x x Dad did a dig
 ⠠⠠ ⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠ ⠠⠠⠠
 x x /dad dId x dIg/
 ⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠

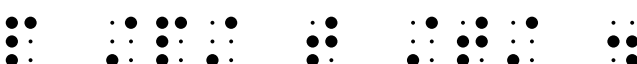
SINGLE SPACED LINES

The left-hand index and middle fingers should remain at the left margin. They serve as place holders for single-spaced lines (see phrase #11).

x x #12 x x Bag a bib x x /bag x bIb/
 ⠠⠠ ⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ ⠠ ⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠

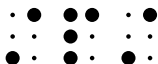
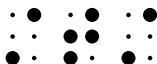
UNIT 2:

Spellings and phonetic symbols:

p /p/ t /t/ .


<u>TOPIC</u>	<u>PAGE</u>
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Group phrase assignment	11 (Braille workbook, page 2)
Phrase assignments	11 (Braille workbook, page 2)

Note: refer to the top of page 2 in the braille textbook for the tactile version of the symbols on this page.

SOUNDS AND SYMBOLS		
ALPHABET LETTER	p  Dots 1234	t  Dots 2345
BRILLE PHONETIC SYMBOL	/p/ 	/t/ 
SOUND EXAMPLE	web address 	web address 
SCENT ASSOCIATION	peppermint	thyme
TACTILE ASSOCIATION	puzzle piece	tassel
TASTE ASSOCIATION	pizza	toffee
SOUND ASSOCIATION	piano	tuba
CHARACTER ASSOCIATION	patient	trustworthy

Punctuation: Period

A period is a dots 256 cell: 

Patterns in Braille

The letters *p* and *t* have an added dots three. Observe the patterns in braille below. The letter *w* is not included since it was not a part of the original set of braille symbols.

PATTERNS IN BRAILLE										
FIRST FORM	A	B	C	D	E	F	G	H	I	J
ADDED DOTS 3	K	L	M	N	O	P	Q	R	S	T
ADDED DOTS 36	U	V	X	Y	Z					

p t .
 ⠏ ⠞ ⠆

x x #2 x x
 ⠠⠠ ⠼⠼ ⠠⠠

x x p x x p x x P x x /p/
 ⠠⠠ ⠏ ⠠⠠ ⠏ ⠠⠠ ⠏ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x t x x t x x T x x /t/
 ⠠⠠ ⠞ ⠠⠠ ⠞ ⠠⠠ ⠞ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x . x x . x x .
 ⠠⠠ ⠆ ⠠⠠ ⠆ ⠠⠠ ⠆

x x #1 x x app x x /ap/
 ⠠⠠ ⠼⠼ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x #2 x x pad x x /pad/
 ⠠⠠ ⠼⠼ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x #3 x x dip x x /dIp/
 ⠠⠠ ⠼⠼ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x #4 x x pig x x /pIg/
 ⠠⠠ ⠼⠼ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x #5 x x tab x x /tab/
 ⠠⠠ ⠼⠼ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x #6 x x bat x x /bat/
 ⠠⠠ ⠼⠼ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x #7 x x tad x x /tad/
 ⠠⠠ ⠼⠼ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x #8 x x tag x x /tag/
 ⠠⠠ ⠼⠼ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

x x #9 x x pat x x /pat/
 ⠠⠠ ⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠

x x #10 x x tap x x /tap/
 ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠

x x #11 x x it x x /It/
 ⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠

x x #12 x x bit x x /bIt/
 ⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠

x x #13 x x pit x x /pIt/
 ⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠

x x #14 x x tip x x /tIp/
 ⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠

x x #15 x x tidbit x x /tIdbIt/
 ⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

x x #16 x x tat x x /tat/
 ⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠⠠

A few simple polysyllabic words are included to increase the word options.

Provide IPA by filling in the braille cells or by duplicating it using ping pong balls and muffin tins.

#1					#2															
gap	⠠⠠	⠠⠠	⠠⠠		tab	⠠⠠	⠠⠠	⠠⠠		tip	⠠⠠	⠠⠠	⠠⠠	⠠⠠		pit	⠠⠠	⠠⠠	⠠⠠	⠠⠠
bit	⠠⠠	⠠⠠	⠠⠠	⠠⠠	dip	⠠⠠	⠠⠠	⠠⠠	⠠⠠	Pat	⠠⠠	⠠⠠	⠠⠠		tad	⠠⠠	⠠⠠	⠠⠠		
pad	⠠⠠	⠠⠠	⠠⠠		tap	⠠⠠	⠠⠠	⠠⠠		tag	⠠⠠	⠠⠠	⠠⠠		bat	⠠⠠	⠠⠠	⠠⠠		

p t .
⠏ ⠞ ⠠

x x #2 x x
⠠⠠ ⠠⠠⠠ ⠠⠠⠠

x x Tag a pig. x x /tag x pIg/
⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠⠠⠠

x x #1 x x Dig a pit. x x /dIg x pIt/
⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠⠠⠠

x x #2 x x Tap a bit. x x /tap x bIt/
⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠⠠⠠

x x #3 x x Add a tad bit.
⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠

x x /ad x tad bIt/
⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠

x x #4 x x Tip a pig. x x /tIp x pIg/
⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠⠠⠠

x x #5 x x Dip it. x x /dIp It/
⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠

x x #6 x x Tag a bad bat.
⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠

x x /tag x bad bat/
⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠

x x #7 x x Tip Pat. x x /tIp pat/
⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠

x x #8 x x Add a tap pad.
⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠

x x /ad x tap pad/
⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠

x x #9 x x Pat a pig. x x /pat x pIg/
⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠ ⠠ ⠠⠠⠠⠠⠠⠠⠠⠠