MB Pro Braille Writer

Step by Step Introductory Lessons

The following is a series of 10 Units, each containing a set of lessons. The lessons have been specifically designed for beginning braille users (Kindergarten/Grade 1).

Developed by

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for

Special Education Technology – British Columbia

S E T

B C

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MB Pro Braille Writer
Step by Step Introductory Lessons

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Overview

The following series of MB Pro lesson plans contain strategies and ideas that have worked well for students in my school district. The purpose of these lesson plans is to serve as a resource and teaching guide for other vision professionals in the field. These lesson plans may also be useful for teacher assistants or braille transcribers. You may not agree with all the suggestions and strategies. It is expected that you will adapt these lessons and incorporate your own teaching strategies to suit the specific needs of your individual students.

The MB Pro is much more complex than the Perkins Brailler and therefore takes a lot longer to master. Subsequently, it is more time consuming to teach. Be sure time is allotted to teach core skills, such as tracking skills as outlined in the Mangold Reading Program.

To help demystify the MB Pro, I have also developed an accompanying manual titled **'MB Pro – The Second Generation Mountbatten Brailler - A Visual Guide'.** Technology manuals can sometimes be overwhelming and extracting information is often is a challenge. Hopefully this guide will assist you when your MB Pro first arrives. Become familiar with the 'Visual Guide' before starting the lessons and then use it as a reference tool.

Your feedback regarding the following lesson plans would be appreciated.
Enjoy your new MB Pro.

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About SET-BC

Special Education Technology – British Columbia (SET-BC) is a provincial resource program of the BC Ministry of Education. SET-BC assists BC school districts in meeting the technology needs of student with:
- physical disabilities
- visual impairments
- autism

SET-BC's mandate is:
- to lend assistive technologies (reading, writing, and communication tools) where required to ensure students' access to educational programs, and
- to assist school districts in providing the necessary training for students and educators in the use of these technologies.

Each BC school district has a SET-BC District Partner who can provide information on how services are provided for eligible students.

For more information and resources on assistive technology, check SET-BC's website at www.setbc.org.

SET-BC Provincial Centre
105 –1750 West 75th Avenue
Vancouver, British Columbia V6P 6G2
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Fax: 604-261-2256

Things To Consider

Learning Media Assessment:
Prior to braille instruction it is helpful to complete a Learning Media Assessment. This is especially important if there is any doubt whether or not your student will be a braille user. Braille or print, which will be the most appropriate option?

'Learning Media Assessment' by Koening & Holbrook
Texas School For The Blind
1100 West 45th Street
Austin, TX 78756-3494
U.S.A.

Note: If the student has a deteriorating eye condition it is important to seek detailed information from their ophthalmologist as this may override the results of the learning media assessment.

Grade 2 Braille:
If the visual impairment is the only handicap and the child has normal cognitive abilities, grade 2 braille (contracted braille) can be taught from day one. The following lesson plans are based on teaching grade 2 braille beginning in Kindergarten. Many students have contractions in their names and it is important to braille their names correctly from the beginning.

Editing:
These MB Pro Lesson Plans are specifically geared to Kindergarten and Grade 1 students; therefore I have not focused on the 'speech editor' feature. To edit using the MB Pro the student has to navigate throughout the file using a 'speech editor'. This is very much like editing using the Braille 'n Speak (there is no tactile braille feedback).

I believe that when students are ready for serious editing, they should start using equipment such as the BrailleNote, utilizing the refreshable braille feature along with speech output.

Speech and Tactile Reinforcement:
Exposure to synthetic speech during early braille instruction will assist students with the wide variety of technologies that will inevitably follow. Speech output is a powerful learning tool, but be sure that your students are also tactually checking the braille that they are creating.

Positioning:
Brailling posture and body alignment are very important.

- The student's feet should be touching the ground or resting on a custom made foot stool.

- The student's back needs to be supported by the chair.

- The table surface needs to be at a comfortable height for brailling. It is helpful if the student has a specially designed braille desk with adjustable legs so that it can grow with the student.

- Where possible, have an occupational therapist assess the learning environment. They will often point out things that we may overlook.

Before Starting The Lessons
Opening The Box

Never pass up a wonderful learning opportunity! Enthusiastically celebrate the arrival of your new Mountbatten Pro (MB Pro) with your student by opening the box with them (re-pack it if necessary). Show your student the foam padding and bubble wrap used in the boxes. Ask your student why they use padding.

Explain that the MB Pro was made in Australia, which is on the other side of the world from Canada. If possible show your student on a globe where they live and Sydney, Australia, where the MB Pro was made.

This can then lead into a discussion on how we need to take care of this special equipment.

Discuss the contents of the boxes:
- MB Pro
- MB Pro adaptor (power cord)
- qwerty keyboard
- Mimic
- Mimic connecting cable
- 'User Manual' and 'Command Summary' sheets
  (print information from Quantum)

Note: SET BC does not provide a power cord for the Mimic – as it requires minimal power it runs a long time on 4 AA batteries.

U n i t

1
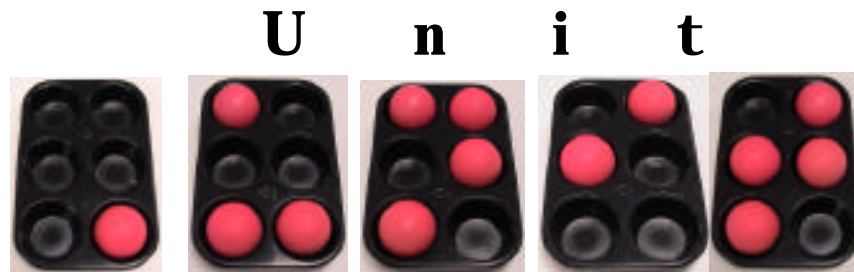
Lesson A (MB Pro Orientation)

Lesson B (Ports)

Lesson C (Setting Up Equipment)

Lesson D (Mimic)

Lesson E (First Braille Letters - Letter Box)

Lesson F (Finger Placement - Scary Sounds)

Unit 1
Lesson A: MB Pro Orientation

Objectives:
- the student will be able to turn the MB Pro On/Off
- the student will know the location of the 6 braille keys
- the student will know the dot number for each key
- the student will be able to operate the volume control
- the student will be able to locate the following; paper lever, margin adjuster, carrying handle, embossing head and paper advance knob
- the student will know the location of the following keys; space bar, backspace, new line, enter and command
- the student will learn some equipment care information

Brief review of necessary skills:
Review the following:
- the purpose of this equipment
- the name of the equipment - MB Pro
- where the equipment is made

Equipment and resources:
- MB Pro
- padded mat (to reduce the noise level)
- braille paper
- muffin pan braille cell (with neon balls)
- braille swing cell

Preparations and settings:
1. Remove the Braille paper bail bar (it is spring loaded and can be detached when the margin bar is moved fully to the right). The MB Pro will be slightly louder but it will allow your students to read the braille that they are producing more efficiently.

2. Place a padded mat under the MB Pro.

3. Load paper in the MB Pro.

4. Be sure to have recorded speech set to "Speaks All Keys"
    *(command)***SPK** *(space)***A** *(enter)* - **"speak all keys".**
    Speaks all keyboard keys, functions and commands. It is a good idea to check
    that this setting is active during set-up.

Challenges and Tips:
The MB Pro will not braille unless paper is inserted.
To avoid information overload, the tab/function key can be introduced later.

Step-By-Step Instructions:
1. Show the student how to turn the MB Pro On/Off.
Explain that the embossing head will always do a margin search when it is turned on
(the sensors are checking the paper size).

Explain that when the MB Pro is turned on there is always a greeting "Good Day!",
followed by charging information (indicating if the power adaptor is plugged in) and
whether it is in learn or advanced mode.

2. Show the student the muffin pan (with the six neon coloured balls - for some
    students the brightly coloured balls can be helpful) and explain that a braille
    cell has six dots (dots 1,2,3 on the left side and dots 4,5,6 on the right side).

Braille Cell

Place the balls in various holes and quiz the student.

3. Use a braille 'swing cell' to explain why the braille keys are arranged the way they are on the MB Pro Keyboard. Show the student the six black braille keys on the Mountbatten keyboard.

Corresponding MB Pro Keys
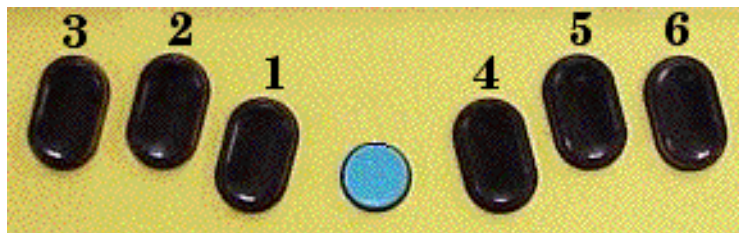
Turn the speech off for this activity because it is rather confusing, i.e. dots 4, 5, & 6 will say their dot names, but dot 1 will say "a", dot 2 will say "low a" and dot 3 will say "apostrophe".

(command) **SPK** *(space)* **N** *(enter)* - **"no speech"**

4. Braille various combinations - full cell, top four dots, bottom four dots, right side, left side etc. Encourage the student to tactually explore what they have brailled.

5. Turn on 'speak all keys' - *(command)***SPK***(space)***A***(enter)* - **"speak all keys"**
    Show the student the following features - volume control, paper lever, margin adjuster, carrying handle, embossing head and paper advance knob.
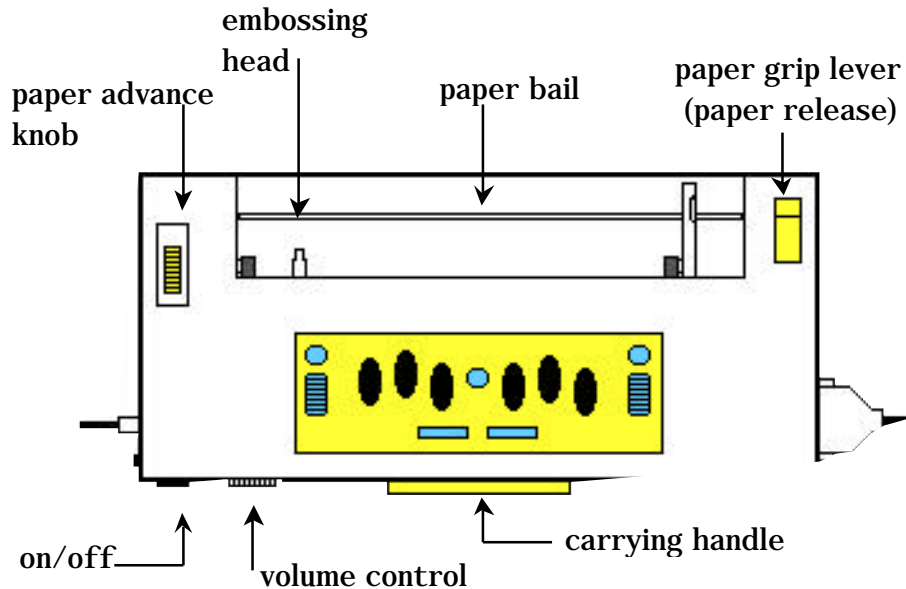
embossing
head

paper advance
knob

paper bail

paper grip lever
(paper release)

on/off

volume control

carrying handle

6. Show the student the following keys - space bar, backspace, new line, enter and command.

command

back space   new line   space bar   enter key
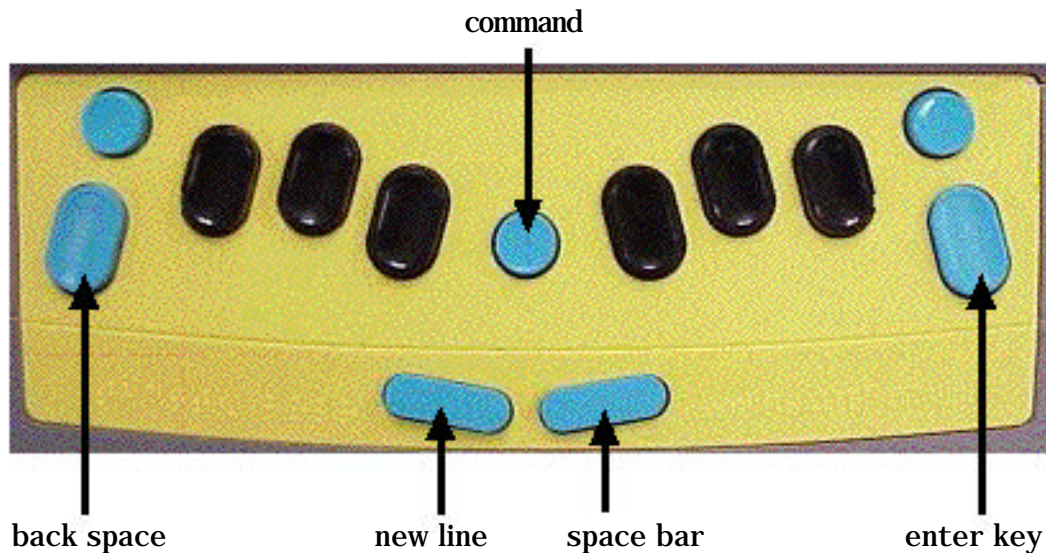
7. Discuss the following equipment care information:
   - clean hands before using
   - don't eat or drink near the MB Pro
   - always turn off the MB Pro after use
   - never place the MB Pro near the edge of the desk
   - be very careful not to knock the MB pro when carrying it

Skills Checklist:

yes   not yet

☐   ☐   Able to turn the MB Pro On/OFF.

☐   ☐   Able to identify the location of the 6 braille keys.

☐   ☐   Able to identify the dot numbers for each key.

☐   ☐   Able to operate the volume control.

☐   ☐   Able to locate the paper lever.

☐   ☐   Able to locate the margin adjuster.

☐   ☐   Able to locate the carrying handle.

☐   ☐   Able to locate the embossing head.

☐   ☐   Able to locate the paper advance knob.

☐   ☐   Able to locate the space bar.

☐   ☐   Able to locate the backspace key.

☐   ☐   Able to locate the new line key.

☐   ☐   Able to locate the enter key.

☐   ☐   Able to locate the command key.

☐   ☐   Demonstrates appropriate care of the equipment.
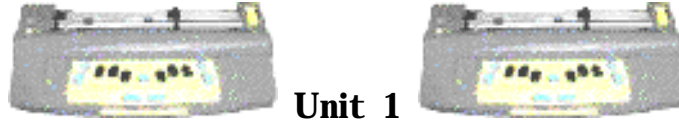
Unit 1
Lesson B: Ports

Objectives:
- the student will be able to tactually locate the following ports (the items in bold print will be the most relevant for younger users) - **headphone**, qwerty keyboard (PC), printer ports, **power outlet** and **Mimic**

- the student will be introduced to the concept of left and right and front and back i.e. "the qwerty keyboard port is on the back right side of the MB Pro"

Brief review of necessary skills:
Review the names of various keys.
Review the dot numbers of each of the braille keys.
Review MB Pro equipment care:
- clean hands
- no food or drink
- turn off after use
- keep away from desk edge
- careful when carrying

Equipment:
- MB Pro

Preparations and settings:
No preparation is necessary.

Challenges and tips:
It is important not to overwhelm your student with unnecessary technical information. Show the student the location of various ports and tell them which equipment is attached to those ports and the purpose of that equipment.

Promote tactual exploration of the ports during this lesson. Equipment set-up will take place in the next lesson (lesson C).

Step-By-Step Instructions:

The following diagram indicates all of the MB Pro's ports. Don't teach all of the ports listed; just use it as a reference to assist you with steps 1 to 5.
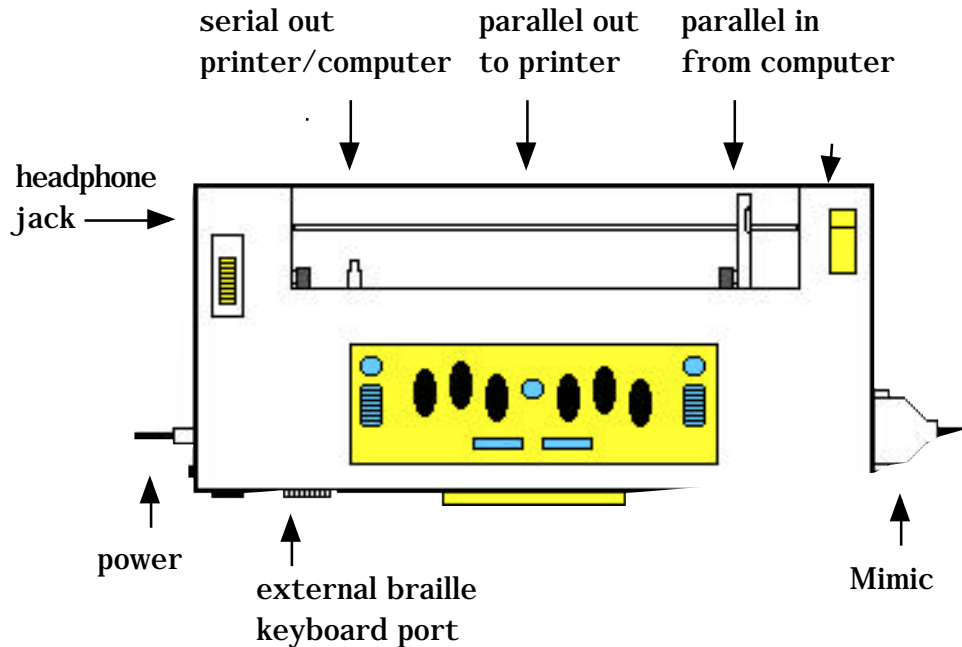
Use words such as right, left, front and back to describe the location of the various ports - these are helpful concepts to reinforce from an early age.

1. Show the student where the **headphones** are plugged into the MB Pro. Ask the student if they can explain why headphones would be helpful - fill in any missing details.

2. Show the student where the qwerty keyboard attaches. Explain that it is a print keyboard used to create braille on the MB Pro.

3. Show the student the two printer ports, explain that ink print printers can be attached to the MB Pro and that they can print out what has been brailled into the MB Pro. If the student shows an interest explain that there are different types of printers (serial and parallel) and there is a choice of two ports.

4. Show the student where the **power outlet** is located. Explain that the MB Pro has a battery but that it needs to be charged when not in use.

5. Show the student where the **Mimic** is attached. Explain that the Mimic provides a print display of what is being brailled. Explain that this is very helpful for sighted people who don't know braille such as classroom teachers.

Skills Checklist:

yes   not yet

☐   ☐   Able to locate the headphone port.

☐   ☐   Able to explain why we use headphones.

☐   ☐   Able to locate the qwerty keyboard port.

☐   ☐   Able to explain what the qwerty keyboard is for.

☐   ☐   Able to locate the MB Pro power outlet.

☐   ☐   Able to locate the Mimic port.

☐   ☐   Able to explain why we use a Mimic display.

☐   ☐   Able to show the right side of the MB Pro.

☐   ☐   Able to show the left side of the MB Pro.

☐   ☐   Able to show the front of the MB Pro.

☐   ☐   Able to show the back of the MB Pro.

Unit 1
Lesson C: Setting Up Equipment

Objectives:
- the student will connect the power adaptor to the MB Pro
- the student will connect the headphones to the MB Pro
- the student will connect the Mimic to the MB Pro
- the student will connect the qwerty to the MB Pro
- the student will connect the ink printer to the MB Pro
- the student will disconnect all of the attached equipment

Brief review of necessary skills:
Review the location of the following ports:
- headphone, qwerty, printers, power and Mimic

Review the following:
- right, left, front and back side of the MB Pro

Equipment:
- MB Pro
- padded mat
- Perkins Brailler
- Mimic
- ink printer (see manuals regarding printers)
- qwerty keyboard
- headphones & 'Y' jack
- MB Pro power adaptor

Preparations and settings:
1. Load paper in the MB Pro.

2. Place a padded mat under the MB Pro.

3. Electrical output from adaptors varies and you can damage equipment if you use an incorrect adaptor. Label the adaptor with a print and braille label and only use the MB Pro adaptor supplied with your unit. We find it helpful to apply labels to both the adaptor block (mostly for our own identification) and to the other end of the cable where it plugs into the MB Pro (this seems to be most useful for the student).

Challenges and tips:
Connecting cables to the MB Pro is an important early skill to develop, especially the power adaptor as it promotes responsibility: keeping the MB Pro fully charged - if they forget the natural consequence will be a dead MB Pro.

Attaching cables to equipment can be a challenging fine motor activity for any 6 or 7 year old. When the child has visual impairment combined with underdeveloped hand strength (noticed in the majority of the students I have worked with) the challenge increases. Assist the student if they are truly struggling.

Step-by-step instructions:
It is helpful if the student can see all of the equipment attached and working. What can this equipment do? Provide upbeat, energized information much like the sales pitch provided at your local auto dealer. If possible, show your student a Perkins brailler and compare features.

1. Provide tactile exploration and information regarding the following equipment:
   - headphones & 'Y' jack
   - MB Pro power adaptor
   - ink printer
   - Mimic
   - qwerty keyboard

2. For review, ask your student to locate and name the various ports.

Setting Up Equipment

printer

qwerty keyboard

headphones

power adaptor
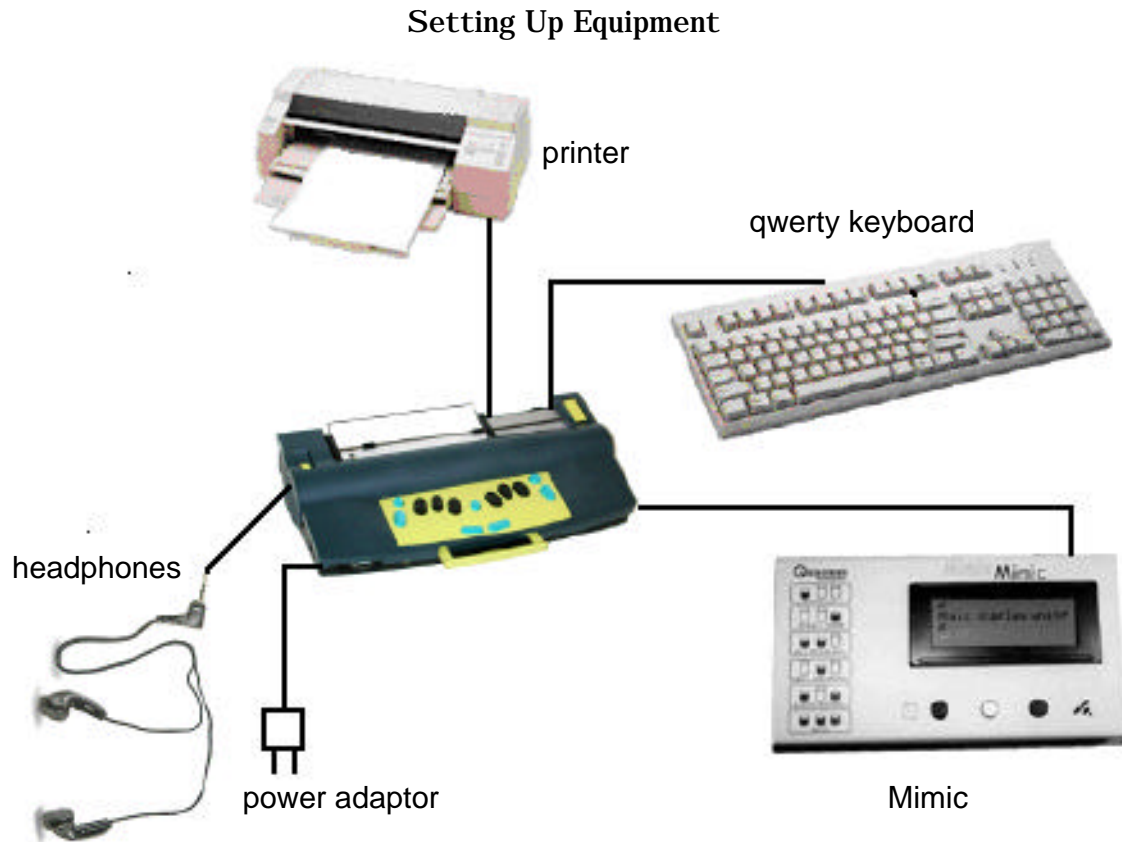
Mimic

3. Using the hand-over-hand method connect headphones (and 'Y' jack), MB Pro power adaptor, ink printer, Mimic and qwerty keyboard.
    Have the student tactually observe that each piece of equipment is linked by cables.

4. Have the student disconnect the equipment appropriately. It is important that they learn from an early age not to pull the plug out by tugging on the cable as it can damage the cord.

5. Have the student repeat the activity and attach all of the equipment (supported when necessary).

6. Demonstrate the various equipment working:

    a. Have the student turn the MB Pro on with the adaptor plugged in - when it starts up it will say, "charging" - when it is unplugged it will say, "not charging".

        Note: if the adaptor is plugged into the MB Pro but not into the electrical outlet or the power bar has been turned off it will still say, "not charging", there needs to be an electrical current.

    b. Using headphones have the student review the various MB Pro keys - space bar, back space, new line, enter and command. Be sure that the "speak all keys" feature is on *(command)***SPK** *(space)***A** *(enter)* - **"speak all keys".**
        Have the student adjust the volume to an appropriate level (discuss hearing safety regarding headphone use - this information is especially important for our visually impaired students, as we would not want them to damage their hearing).

    c. Explain that when the Mimic is plugged in and turned on it starts working automatically. Place the student's fingers over the LCD screen (Liquid Crystal Display) on the Mimic and explain that up to 20 print letters can be displayed on the screen. Braille the word "hello" hand-over-hand with the student and have them press the spacebar independently. Let the student know that each time the spacebar is pressed the word is sent to the Mimic.

    d. Turn on 'back translation' in order to turn MB Pro braille into print. *(command)***BP** *(enter)* **"on" or "off"** (most printers make a noise indicating that it has been activated). Do not teach this command to your student as it's an advanced feature that will be covered in future lessons - this is just an awareness of what the equipment will do 'the big picture'. Hand-over-hand, type "Hello my name is _____" followed by *'enter'*, *'enter'* (this empties the buffer and sends the information over to the printer). The student will hear the print working. Have fun, get he student to press any braille keys and spaces to produce printed gibberish.

e. Using the qwerty keyboard (hand-over-hand to teach some letters and then with free exploration) have the student create braille by typing various letters.

Skills Checklist:

yes   not yet

☐   ☐   Able to connect the power adaptor.

☐   ☐   Able to connect the headphones and 'Y' jack.

☐   ☐   Able to connect the Mimic.

☐   ☐   Able to turn the Mimic on and off.

☐   ☐   Able to connect the qwerty keyboard.

☐   ☐   Able to connect the ink printer.

☐   ☐   Able to disconnect all of the attached equipment.

☐   ☐   Able to explain what all the attached equipment does.

Unit 1
Lesson D: Mimic

Objectives:
- the student will learn about the Mimic's automatic shut-off feature
- the student will wake up a sleeping Mimic
- the student will be provided with a general awareness of the Mimic keypad
- the student will learn about the Mimic's battery power
- the student will place a padded mat under the MB Pro

Brief review of necessary skills:
Review the following:
- the location of the Mimic port (have the student verbally describe its location using 'left' or 'right')
- how to connect the Mimic to the MB Pro (provide support when necessary)
- how to turn the Mimic on and off

Equipment:
- MB Pro
- Mimic
- padded mat
- braille paper

SET BC does not provide power adaptors for the Mimic. The Mimic uses 4 AA batteries that are easily replaced. Because of the built-in automatic shut off feature, combined with the small amount of power required to operate the Mimic, the batteries are expected to last over a year.

Preparations and settings:

1. Load paper in the MB Pro.

2. Place a padded mat under the MB Pro.

Challenges and tips:

If the student has some basic understanding of the Mimic they will be able to do some simple problem solving in the classroom e.g. waking up the Mimic if it goes to sleep.

The student does not need to know how to operate the Mimic keypad as the classroom teacher will mainly be operating it. As I mentioned earlier, it is important that this information is provided to help our students understanding how all the equipment functions as a whole.

Step-by-step instructions:

Please refer to the 'Visual Guide' page 22 to 26 for more detailed information regarding the Mimic display.

1. Have the student place a padded mat underneath the MB Pro and explain how it helps to reduce the noise. Explain that some teachers (especially in the Intermediate grades) find the noise level frustrating in the classroom.

2. Explain that when the MB Pro is in *learn mode*, the Mimic will work automatically when attached and turned on *(this is something that primary students can set-up independently).* Explain that it will display every brailled word (after pressing the space key). In *advanced mode* the Mimic needs to be activated. *Learn mode* and *advanced mode* will be discussed in later lessons.

3. Show the student the three buttons below the visual display and explain that the teacher can press them (in different combinations) to view what the student has brailled.

4. Explain that if you start up the MB Pro with the Mimic plugged in and it says, "Mimic not found" the Mimic may have gone to sleep. The Mimic will shut off automatically after 15 minutes of not being used. Leave the equipment (read a story) and return in 20 minutes. Have the student turn off the MB Pro and turn it back on to hear "Mimic not found". Have them touch any one of the three Mimic keys to reactivate the Mimic. This feature works only when the Mimic power switch has been left on.

Skills Checklist:

yes   not yet

☐   ☐   Able to provide general explanation of Mimic keypad.

☐   ☐   Able to wake up a sleeping Mimic.

☐   ☐   Able to discuss the automatic shut-off feature.

☐   ☐   Able to disconnect the Mimic.

☐   ☐   Able to place a padded mat under the MB Pro.

Unit 1
Lesson E: First Braille Letters - Letterbox

Objectives:
- the student will know how to braille letters a, c, g, l, p, x, w
- the student will read braille letters a, c, g, l, p, x, w
- the student will tactually view what they have just brailled
- the student will be introduced to the 'letter box' activity

Note: Please feel free to introduce the braille letters in the order you feel most comfortable. This is just a strategy that has worked for us in the past.

Brief review of necessary skills:
Review the following:
- braille cell dots 1, 2, 3, 4, 5, 6 (using the muffin pan)
- the six braille keys on the MB Pro (using the braille swing cell)
- location of the space bar, back space, new line, enter and command keys

Equipment and resources:
- MB Pro
- padded mat
- braille paper
- muffin pan and neon balls
- braille swing cell
- braille/print letterbox cards (a, c, g, l, p, x, w)

Preparations and settings:
1. Create a series of braille/print flash cards ('letterbox activity'):
   - cut off the top right hand corner of each card
   - braille full cells along the top
   - print one of the following letters on each card a, c, g, l, p, x, w
   - braille the letters underneath each print letter
   - using a fine point felt pen print "braille" in the top left hand corner and "read" in the top right hand corner (near the cut off corner)

   Note for dual print/braille users: be sure that the printed letter is bold enough. When using the card cover the print letter with your hand to be sure that the student is only reading the braille letter. If they are unable to decode the braille and they are already familiar with print the bold print can be revealed to provide an additional clue.

2. Load paper in the MB Pro.

3. Be sure that 'hyphenation' is off. The default is automatic (the MB Pro breaks the word and inserts a hyphen); this can be rather confusing for new users. If you select manual line, then you get a Perkins equivalent where the new line key has to be pressed when you are at, or approaching the end of the line.
   *(command)***MAN** *(enter)* "on" *or* "off"
   Note: Repeat the command to turn "off"

4. Turn on synthetic speech. It can only be activated in the *advanced mode*. If you try the following command in the *learn mode* it will say "command error".

   To turn on/off advanced mode:
   *(command)***ADV** *(enter)*

   Activating Synthetic Speech:
   *(command)***SPK** *(space)***S** *(enter)*

5. Go to the speech menu and select "echo letters"
   new line + *space* + **S** (together)

MB Pro will say: "Speech Menu"

E = Echo
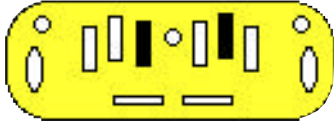
Note: repeat the letter 'E' to select the following:
        "echo letters"
        "echo words"
        "echo both"
        "echo no"

6. When you have finished this activity you can return to *recorded voice* simply by going back to *learn mode.*

   To turn on/off advanced mode:
   (command) **ADV** *(enter)*

7. Set MB Pro to 'double' spacing. We generally use the double spacing setting until grade 2. Regular spacing seems to hamper braille fluency in the early years. When the braille is in compact clumps it can be a tactual challenge to read.
   (command) **LS** *(space)* **2** *(enter)*
   The MB Pro will say "ok" after you select the enter key.

   *Note: use a Nemeth number without a number sign **or** number sign followed by a non-Nemeth number.*

   To return to single line brailling enter -
   (command) **LS** *(space)* **1** *(enter)*

8. Turn 'command' key off. The 'command' key is the round blue key in the centre of the MB Pro. When it is deactivated it cannot be accidentally pressed.
   To deactivate press:
   left function + right function + new line + space (together) = **"command off"**
   (repeat command to turn on)

The last selected setting will be the new default after you turn the power off.

Challenges and tips:
When students are practicing their letters it can be confusing when they create the letter 'b' followed by a space because the MB Pro will say the whole word contraction 'but'. This accidental learning is wonderful when the students know more braille but not when they are learning the alphabet. Using synthetic speech in the advanced mode you can set the MB Pro to "echo letters " and it will avoid this problem.

Step-by-step instructions:

1. Teach the student these braille letters a, c, g, l, p, x, w. Show the letters using the muffin pan and neon balls to indicate the raised braille dots. If possible have students explore the muffin pan both tactually and visually. Have them repeat the name of the letter and the correct dot numbers.

2. Have the student braille the various letters on the MB Pro. The swing cell may be helpful for some letters.

3. When a student has brailled a letter have them tactually check what they have brailled. It is important that they do not rely solely on auditory feedback.

tactile feedback

4. Introduce the 'letter box' activity (this will be a precursor to the word box activity introduced in later lessons).

   Explain that 'letter box' cards will measure how well the student can braille and read various braille letters. Each time the student correctly brailles a letter they get a check mark on the "braille" side of the card (top left hand corner) and every time they correctly identify a braille letter tactually they get a check mark on the "read" side of the card (top right hand). Only one check mark can be added per session, i.e. one on each side of the card. If the student brailles or reads the letter incorrectly they get a line instead of the check mark. The letter becomes a 'Hall of Fame Word' when there are 5 consecutive checkmarks on both sides of the card.

Skills Checklist:

yes   not yet

☐   ☐   Able to braille letters a, c, g, l, p, x, w.

☐   ☐   Able to read braille letters a, c, g, l, p, x, w.

☐   ☐   Spontaneously checks braille - tactually.

☐   ☐   Understands the rules of the 'letter box' activity.

Unit 1
Lesson F: Finger Placement - Scary Sounds

Objectives:
- the student will use appropriate finger positioning when brailling
- the student will build confidence using the MB Pro
- the student will increase fine motor dexterity
- the student will increase brailling speed

Brief Review Of Necessary Skills:
Review the following braille letters a, c, g, l, p, x, w

Equipment and Resources:
- MB Pro
- padded mat
- braille paper
- plastic reverberating microphone

Preparations and Settings:
1. Load paper in the MB Pro.

2. Turn on synthetic speech and set MB Pro to "echo letters"
   Follow the steps outlined in Unit 1, Lesson E.

3. When you have finished this activity you can return to *recorded voice* simply by going back to *learn mode.*

   To turn on/off advanced mode:
   *(command)***ADV** *(enter)*

Challenges and Tips:
Students need to learn appropriate finger placement while brailling. They need to be shown where the fingers need to be places on the MB Pro Keyboard.

Students should also be encouraged to keep their fingers lightly positioned over the braille keys while brailling (brailling speed slows dramatically when the fingers are constantly reacquainting themselves with the braille keyboard).

Learning braille can be cognitively demanding. It is important to provide time for recreational brailling.

Step-By-Step Instructions:
1. Turn on the MB Pro.

2. Model correct finger placement on the MB Pro keyboard. Show how the right thumb operates the spacebar and the left thumb operates the new-line key. Encourage the student to keep their fingers lightly positioned over the braille keys while brailling (except when they are checking their braille).

3. Explain that in this activity they have to create the scariest sounds possible. Let them know that these will not be words but just strings of braille letters that they know and others they have made up. Encourage them to do a long string of letters and when they press the spacebar, they will hear scary sounds.

4. Try brailling some letter combinations as examples.

5. Braille hand-over-hand so that the student has a model of fluent brailling.

reverberating microphone

6. To create added interest, have the student create more scary sounds and place a plastic reverberating microphone next to the MB Pro speaker.

Skills Checklist:

yes   not yet

☐   ☐   Uses appropriate finger positioning while brailling.

☐   ☐   Demonstrates increased fine motor dexterity.

☐   ☐   Demonstrates increased brailling speed.

U n i t

2

Lesson A (Manual Paper Feeding & Ejecting)

Lesson B (Brailling Without Embossing - Speech Only)

Lesson C (Recorded Speech)

Lesson D (Tactile Letter Recognition)

Lesson E (Student's Name)

Lesson F (Classroom Words)

Lesson G (S.N.E.D. Box - 'Letters')

Unit 2
Lesson A: Manual Paper Feeding & Ejecting

Objectives:
- the student will load various types of paper
- the student will manually remove paper
- the student will use the page eject feature
- the student will load a pre -brailled worksheet
- the student will adjust the braille pressure
- the student will use the right and left function keys

Brief Review Of Necessary Skills:
Review the MB Pro keyboard layout including paper lever and margin adjuster.

Equipment:
- MB Pro
- padded mat
- braille paper
- photocopy paper

Preparations and Settings:
1. The manufacturers of the Mountbatten Pro recommend regular photocopy paper (8 1/2" x 11") for single use situations. They recommend braille paper for multiple use situations.

Advantages of using regular photocopy paper:
- reduced embossing pressure lowers the noise level
- more economical
- 8 1/2" x 11" paper fits

Disadvantages of using regular photocopy paper:
- the braille is less durable
- the braille is softer and less crisp to the touch

We use regular 11x11 braille paper during all instructional situations that occur in the Resource Room setting or other settings where the noise factor is not an issue. It is important that the student is exposed to crisp braille output on durable braille paper especially during the early years.

Challenges and Tips:
Loading paper into the MB Pro is a rather demanding fine motor activity, but it is an important skill to master early. It will allow the student to set up the equipment independently. Daily use of the MB Pro will soon reinforce this skill.

It is important that the student does not move the margin adjuster while the paper lever is down. The little rubber roller is fragile and will peel off if the margin adjuster is moved.

Step-By-Step Instructions:
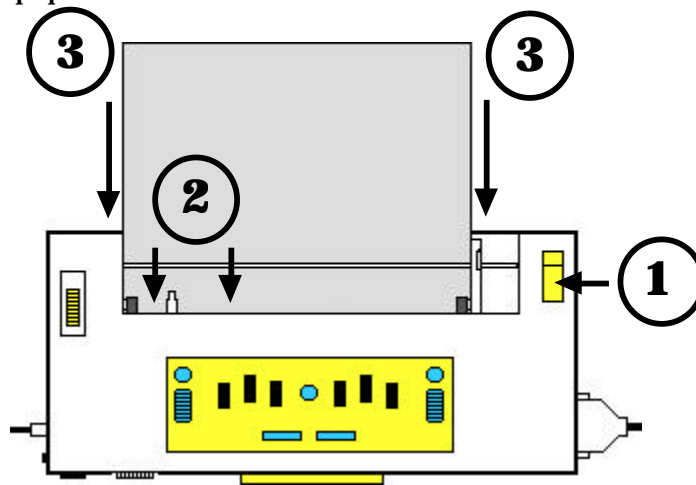There are two ways to load paper into the MB Pro - 'top' or 'back' loading.

A. 'Top' loading:
Top loading is very similar to the Perkins. Have the student follow the following steps. Repeat the activity using both photocopy paper and braille paper.

    1. Open paper lever (paper release).

    2. Insert paper under the embossing head and the paper grip rollers.

    3. Push in the paper.

4. Align the top of the paper with the indented metallic groove.

5. Align the margin adjuster with the edge of the paper. Only move the margin adjuster when the paper grip lever is up as you may damage the small rubber rollers. If the margin adjuster is not aligned correctly the MB Pro will jam during the margin search as the embossing head catches on the edge of the paper.

6. Close paper lever.

7. Turn MB Pro on.
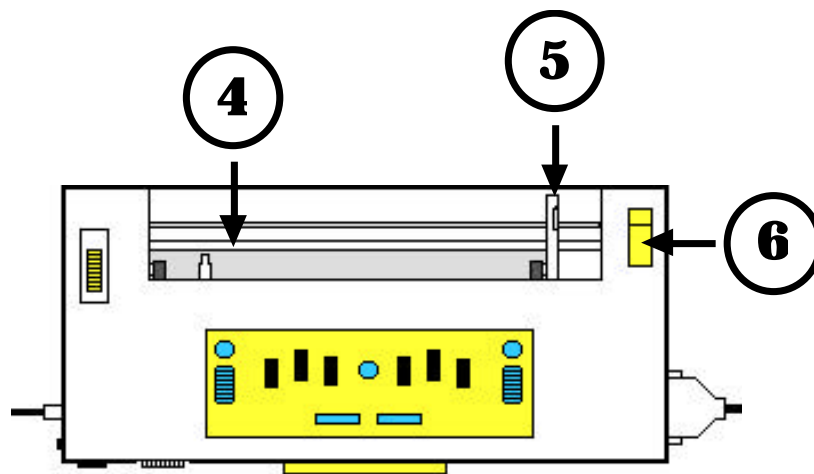
B. 'Back' loading:
Have the student insert paper into the lower back portion of the MB Pro. Push inside until it reappears under the embossing head.
New users usually find it easier to load the paper through the back, as it can be awkward tucking the paper under the embossing head and the paper rollers.
Practice loading both photocopy and braille paper.

C. Decreasing The Braille Dot Pressure:
Inform the student that it is important to adjust the embossing pressure when changing the paper thickness. Have them turn down the embossing pressure when using photocopy paper for classroom situations. The noise level will be drastically reduced and it will cause less disruption for their peers and the teacher.

Show the student the **right function** and the **left function** keys.

command + left function (to decrease pressure)

D. Increasing The Braille Dot Pressure:
 command + right function (to increase pressure)

E. Removing Paper Manually:
Simply have the student open the paper release lever and remove the paper.

F. Automatic Page Eject:
Have the student press both the *new line +enter* simultaneously to automatically eject the paper from the MB Pro.

G. Loading Pre-Brailled Worksheets:

Loading a pre-brailled worksheet is a helpful skill to learn. When a student is loading a blank sheet of paper, top and bottom or front and back are not relevant. If a student is loading a pre-brailled worksheet using the 'back loading' they will need to insert the top of the sheet with the braille face down.

Skills Checklist:

yes   not yet

☐   ☐   Able to load photocopier paper (top loading).

☐   ☐   Able to load photocopier paper (back loading).

☐   ☐   Able to load braille paper (top loading).

☐   ☐   Able to load braille paper (back loading).

☐   ☐   Able to increase the braille pressure.

☐   ☐   Able to decrease the braille pressure.

☐   ☐   Able to remove paper manually.

☐   ☐   Able to remove paper using automatic page eject.

☐   ☐   Able to correctly load a pre-brailled worksheet.

Unit 2

Lesson B: Brailling Without Embossing - Speech Only

Objectives:
> • the student will practice braille letters using speech only

Brief Review Of Necessary Skills:
Review the following braille letters:
> • a, c, g, l, p, x, w

Review braille finger placement and thumb keys.

Equipment and Resources:
> • MB Pro
> • padded mat
> • braille paper
> • letterbox cards
> • muffin pan braille cell
> • swing cell

Preparations and Settings:
1. Create 7 additional letterbox cards b, k, m, q, u, v, y

2. Be sure that you are in *learn mode*. The recorded voice is much clearer for new users.
To turn on/off advanced mode:
*(command)***ADV** *(enter)*

3. You will not be deactivating the embosser, just tricking it. Press *command* key and the MB Pro will think that you are entering a command; there will be speech output but nothing is embossed.

Press the *enter* key to return to regular brailling.

---

4. Create your own 'letter stories' similar to the 'b' (**bee**) story example. Letters c (e.g. a story about visiting the **sea**), i (**eye**), j (a blue -**jay**), t (a story about where **tea** comes from), u (an I like **you** poem), y (the little boy who always said **why?**) etc.

Explain that these letters sound like the actual words but they are spelled differently.

Challenges and Tips:
It may seem odd to list braille paper under 'Equipment and Resources' for a speech only activity, but it is essential, since the MB Pro will not work unless paper is loaded.

Very young braille users who are specifically working with finger placement and the production of individual braille letters, find it helpful to have speech only without embossing. However, tactile feedback is crucial for new braille users so use this feature somewhat sparingly.

Step- By- Step Instructions:
1. Explain to the student that the speech output is often muffled by the sound of the embossing head and that they may miss some auditory feedback.

If possible press the command key before the student starts using the MB Pro (otherwise they may get confused when they start learning the actual commands).

2. Introduce these new braille letters (with braille embossing off) - b, e, k, m, q, u, v and y. Use the muffin pan and the swing cell for support. Also include letters a, c, g, l, p, x and w

Press the 'enter' key to return to regular embossing. Turn on advanced mode (command) **ADV** *(enter)*, *activate synthetic speech (command)* **SPK** *(space)* **S** *(enter) and select "echo letters" in the speech menu.*

3. Using the 'letter box' activity cards *read* and *braille* the same letters (a, b, c, e, g, k, l, m, p, q, u, v, w, x and y). Providing support when necessary, remember to put check marks in the corner of the cards when the student reads or brailles letters independently.

4. 'Letter Stories' form a fun activity for reinforcing various braille letters. You can create your own stories as mentioned in the 'Preparations and Settings'. Turn to the next page for the 'b' **bee** story and 'k' **Kay** poem.

Read the following story and instruct the student to braille the letter 'b' whenever you pause (i.e. when you come across the bee picture).

Benjamin

"This is a story about a very special   . His name is Benjamin   . He is a

very happy   . Benjamin   lives at the edge of the forest in a very cozy

hive. Every day Benjamin   visits the flower garden. He loves to sing 'Don't

Worry   Happy' and 'I 'll   Home For Christmas'. All his   buddies

love to hear Benjamin   sing while doing the

bop. After a busy day in the garden each   slurps a large bowl of

nectar. Before going to bed they say their A,   C's and practice for the

weekly spelling   .

Read the following story and instruct the student to braille the letter 'k' during pauses.

An Alien named   .

Once every day, an alien named   , came out to play. They say   had

a green mask to scare people away. She said, "My name is   and I am going

to take you away".   took me away on a rainy day, to my sad dismay. I sat

with   as I had no say.   crashed on a planet made of hay, but I felt

quite O   .

Skills Checklist:

yes   not yet

☐   ☐   Able to braille letters using speech only

Unit 2
Lesson C: Recorded Speech

Objectives:
> • the student will learn the difference between recorded
>   and synthetic speech.

Brief Review Of Necessary Skills:
Review the following braille letters - a, b, c, e, g, k, l, m, p, q, u, v, w, x and y

Equipment:
> • MB Pro
> • padded mat
> • braille paper

Preparations and Settings:
For Recorded Speech:
1. Set MB Pro to *learn mode (command)* **ADV** *(enter)*.
2. *(command)* **SPK** *(space)* **A** *(enter)* - **"speak all keys"**

For Synthetic Speech:
1. Set MB Pro to *advanced mode (command)* **ADV** *(enter)*.
2. Activate *synthetic speech (command)* **SPK** *(space)* **S** *(enter)*.

Challenges and Tips:
Don't teach the commands yet, these will be covered step by step in a future lesson.

Step-By-Step Instructions:
1. Explain that 'Recorded Speech' is just that - various words and letters have been recorded resulting in natural sounding speech. One is limited to the letters and words that have been recorded. The MB Pro speaks all keyboard keys, functions and commands.

2. Have the student braille using 'Recorded Speech'.

3. Explain that 'Synthetic speech' is computer-generated sound. It provides us with a wider vocabulary but the voice quality is not as clear.

4. Have the student braille using 'Synthetic Speech'.

Skills Checklist:

yes   not yet

☐   ☐   Able to explain the difference between 'recorded'
                    and 'synthetic' speech.

Unit 2
Lesson D: Tactile Letter Recognition

Objectives:
- the student will develop tactile sensitivity
- the student will increase their tracking skills
- the student will know that information can be stored in files

Brief Review Of Necessary Skills:
Review 'recorded' and 'synthetic' speech.

Equipment and Resources:
- MB Pro
- padded mat
- 3 sheets of braille paper
- corkboard and pins
- pre-made worksheets:
  - Chicken & Eggs
  - Spiders In The Grass
  - Trees & Beavers

Preparations and Settings:
1. Create the following 3 worksheets, saved as 3 separate files on the MB Pro. The most efficient way to create the worksheets is with the qwerty keyboard.

Please don't teach saving and printing MB Pro files at this time as they are advanced features covered in future lessons.

Starting a new file:
qwerty: *(esc)***BEGIN***(space)***file name'***(end)*

Ending a file:
qwerty: *(esc)***END***(end)*

Copy the following tactile sensitivity sheets and save as MB Pro files. The pages don't need to be brailled exactly as shown. Each sheet should have 7 lines of braille using triple spacing.

Chicken & Eggs:

cccccccccccccccgccccgccccgcccccccc

ccccccgccccccccgccccccccccccgcccgccc

ccccccgccccgccccccccccccccccccccccg

Spiders In The Grass:

aaaaaaaagaaaaaaagaaaagagaaaaaaaaaa

aagaaaaaaaaaaagaaaaagaaaagaaaaaaga

aaaaaaaaaagaaaaaaaaaagaaaaaagaaaaa

Trees & Beavers:

llllllllllclllllllclllclllllllllllllllclllllllllllllllllllllcll

llllllllllllllllllclllllcllllllclllllllllllllclllllllllllllllllll

llllllllllclllllclllllllllllllllllllllllllllllllllclllllllllclllll

Note: Braille the worksheets in front of the student.

Challenges and Tips:
We have all developed a bag of tricks for teaching braille reading and writing - please incorporate these into your MB Pro lessons. These lessons have been developed as guidelines or as starting points for teaching braille reading and writing. It is important to complement these lessons with what you see as particular priorities with the student you are actually working with.

Step-By-Step Instructions:

1. Braille out the 'Chicken & Eggs' worksheet in front of the student. Have the student remove the worksheet from the MB Pro and pin the four corners to a corkboard.
The student has to track across the *'chickens'* to find their *'eggs'*
ccccccccgcccccgcc

2. Braille the 'Spiders In The Grass' worksheet. Have the student remove the worksheet and pin it to the corkboard.
The student has to track across the *'grass'* to find the *'spiders'*
aaaagaaaagaa

3. Braille the 'Trees & Beavers' worksheet. Have the student remove the worksheet and pin it to the corkboard.
The student has to track over the *'trees'* to find the *'beavers'*
llllllllclllllllclllclllll

'The Mangold Developmental Program of Tactile Perception and Braille Letter Recognition' has many similar activities.

Skills Checklist:

yes   not yet

☐   ☐   Displays increased tactile sensitivity.

☐   ☐   Tracks braille with increased proficiency.

Unit 2
Lesson E: Student's Name

Objectives:
> • the student will braille his or her own name

Brief Review Of Necessary Skills:
Review the following braille letters - a, b, c, e, g, k, l, m, p, q, u, v, w, x and y

Equipment:
> • MB Pro
> • padded mat
> • braille paper
> • muffin pan braille cell
> • swing cell
> • 'letter box' cards

Preparations and Settings:
1. Set to *learn mode*.

Challenges and Tips:
Some names will be more challenging than others to braille. If they have contractions in their name, teach them those specific contractions.

Step-By-Step Instructions:
1. Teach the student to braille their name. If the name contains any letters or contractions that have not been taught yet introduce them at this time.
2. Have the student braille their name repeatedly. Have them tactually check what they have brailled.
3. Introduce the concept that words have spaces between them.
4. Continue with the 'letter box' activity

Skills Checklist:
yes   not yet

☐   ☐   • Able to braille his or her own name.

Unit 2

Lesson F: Classroom Words

Objectives:
- the student will encounter braille in their classroom environment
- the student will be involved in creating a set of 'classroom words'

Brief Review Of Necessary Skills:
Review the following braille letters - a, b, c, e, g, k, l, m, p, q, u, v, w, x and y (reading and brailling 'letterbox' activity)

Equipment:
- MB Pro
- padded mat
- blank cards
- tape
- 'letter box' cards

Preparations and Settings:
1. Set up the MB Pro to braille small cards.

Challenges and Tips:
It is often challenging brailling on small cards. See page 20 in the 'Visual Guide' *brailling on small cards.*

It is important to revisit the 'classroom words' on a regular basis.

Step-By-Step Instructions:
It is especially important for visually impaired students to associate words with concrete objects. In the early Primary years label everything!

1. Brainstorm with the student various things found in a classroom - *computer, chalkboard, desk, tap, chair, teacher's desk, coat rack, window, door stereo, bookcase* etc. When they run out of ideas have them tactually search the classroom to look for more 'classroom words'.

2. Braille 'classroom words' onto cards, while modeling braille writing using hand-over-hand. Use contractions if they appear in the word. Interline the cards with bold print letters so that all students can benefit.

3. Have the classroom teacher assist the student in taping the cards to the appropriate areas (it is important to promote activities that directly involve the classroom teacher).

4. As with sighted children learning print, visually impaired students are not expected to actually read the words, but they will see them in context (they can tactually explore the item that the word is attached to for meaning).

Skills Checklist:

yes   not yet

☐   ☐   Able to find and identify some 'classroom words'

Unit 2
Lesson G: S.N.E.D. Box - 'Letters'

Objectives:
- the student will explore items found in the S.N.E.D. Box
- the student will learn to identify some beginning letter sounds

Brief Review Of Necessary Skills:

Review the following braille letters - a, b, c, e, g, k, l, m, p, q, u, v, w, x and y (reading and brailling 'letterbox' activity)

Tour the classroom to look at the 'classroom words'.

Equipment:
- MB Pro
- padded mat
- braille paper
- S.N.E.D. Box
- S.N.E.D. box items (see 'Preparations and Settings')
- 'letter box' cards

Preparations and Settings:

1. Create a S.N.E.D. (**S**omething **N**ew **E**very **D**ay) Box. The box needs to be brightly coloured and covered with interesting textures (something very inviting!). The box should be about the size of a shoebox and the lid needs to be easy to take off.

2. Gather items for the S.N.E.D. Box. These items can range from everyday household items to unique tourist trinkets from Africa e.g. a CD, eraser, can opener, combination lock, star fruit, TV remote, music box, potato peeler, tooth picks, marbles, napkin rings, matchbook, shaving cream, Japanese candy, Bolivian Pan Flute, wicker basket, chop sticks, starfish, Christmas Tree Ornament, hammer, package of seeds, cinnamon stick, screwdriver, light bulb, stapler etc.

I find it helpful to gather 7 items at a time, enough for 1 week of S.N.E.D.'s. Most of these items are found around the house.

One of my students did S.N.E.D.'s for two years and we have never run out of things to put in the box.

3. For the '6 item' S.N.E.D. Box Activity' find objects that start with letters that the student has problems with brailling e.g. a rubber **Snake** for the letter 'S', a **Mitt** for the letter '**M**', a **Wet Wipe** for the letter 'W' etc.

Challenges and Tips:
Fully sighted children are constantly visually observing the world around them, often inadvertently. Students with visual impairments miss out on many of these opportunities. We need to make a conscious effort to bring the visual world to our students. The S.N.E.D. Box is one opportunity to bring items of interest to the attention of our students for exploration and explanation thereby enhancing the student's vocabulary and, general knowledge and understanding of the world they live in.

Over the years our students have thoroughly enjoyed the S.N.E.D. Box.

Step-By-Step Instructions:
What is a S.N.E.D.?
S.N.E.D. stands for **S**omething **N**ew **E**very **D**ay. Learning something new every day is very important. Sometimes we have days full of S.N.E.D.'s and on others there are just a few. A day without a S.N.E.D. is a rather sad day. A day with multiple S.N.E.D.'s can be amazing!

1. Show the S.N.E.D. Box (described in 'Preparations and Settings') to your student. Explain that each day the box will contain something different. It will be like Christmas everyday - you never know what will appear in the box next. Explain that they will tactually explore the item and try to figure out what they are looking at. The S.N.E.D. item will then be discussed.

For this next activity there will be 6 items in the S.N.E.D. Box.

'6 Item S.N.E.D. Box Activity':
2. Ask the student to look at the 6 items in the S.N.E.D. Box.

3. Have them identify the items in the box. Assist if necessary.

4. Discuss the items in the box.

5. The student then has to identify the beginning sound and corresponding letter of each word. Have them braille that letter 5 times. For example they find a Mitt and say the beginning sound MMMMM, then say the letter 'M' and braille it.

Skills Checklist:

yes   not yet

☐   ☐   Able to identify the beginning sound and letter of various words.

U   n   i   t

3

Lesson A (Backspace Delete)

Lesson B (Letter Box Additions)

Lesson C (Braille Lego)

Lesson D (Speed Loading)

Lesson E (Shark Attack - Navigation Activity)

Lesson F (Canada Post Game)

Lesson G (Braille numbers)

Lesson H (Synthetic Speech Menu)
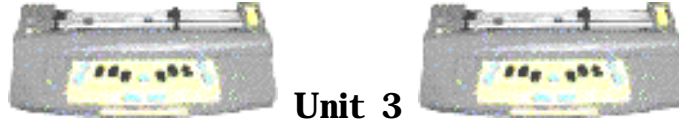
Unit 3
Lesson A: Backspace Delete

Objectives:
> • the student will use the backspace delete feature

Brief Review Of Necessary Skills:
Review the MB Pro keyboard - enter, command, backspace, new line and spacebar.

Review how to load braille paper into the MB Pro.

 Review braille letters - a, b, c, e, g, k, l, m, p, q, u, v, w, x and y (reading and brailling 'letter box' activity)

Equipment and Resources:
> • MB Pro
> • padded mat
> • braille paper
> • print erasers (1 hand held eraser and 1 pencil eraser)
> • 'letter box' cards

Preparations and Settings:
No preparation required.

Challenges and Tips:
The backspace delete feature does not always fully erase the braille. If you braille a letter 'g' (using braille paper) for example and then delete it and replace it with a letter 'f', a faint ghost of dot 5 remains.

Younger children enjoy using the 'backspace delete' feature but often find the results confusing and have difficulty ignoring the braille residue from a previously erased cell. This is not a feature we use very often. To avoid frustration they may want to use another method of erasing such as the 'full braille cell' (two or more 'for' contractions in a row) until they become competent braille users.

Step-By-Step Instructions:

1. Explain that erasers are used to erase pencil. It removes mistakes or things we don't want any more. Show two types of pencil erasers - the hand held type and the erasers found on the end of pencils. Inform the student that we can also erase unwanted braille.

2. Get the student to braille the letter **L**. Say, "Oh, I'm sorry, I wanted a letter **C** not an **L**".

3. Show the student how to erase using the 'backspace delete' feature. Explain that when you make a mistake you can go back a cell and erase it.
Press both the ***backspace + space*** at the same time.

4. Tell them that the hammering sound is the flattening of the braille dots.

5. Have them try brailling and erasing a variety of letters.

Skills Checklist:

yes   not yet

☐   ☐   • Able to erase braille using the backspace delete feature.
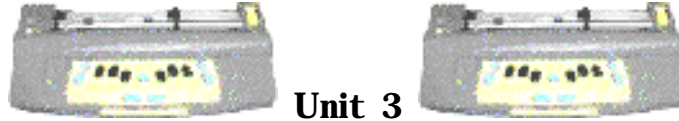
Unit 3
Lesson B: Letter Box Additions

Objectives:
  • the student will braille the alphabet
  • the student will read the braille alphabet

Brief Review Of Necessary Skills:
Review appropriate posture for brailling.

Review the importance of having clean hands for braille. Sticky or dirty hands can interfere with fluent braille reading.

Equipment and Resources:
  • MB Pro
  • padded mat
  • braille paper
  • letter box cards (whole alphabet)

Preparations and Settings:
1. Create the final 10 letter box cards - d, f, h, i, j, n, o, r, s, t and z.

2. Turn on advanced mode **(command)ADV(enter),** activate synthetic speech **(command)SPK(space)S(enter) and** select "echo letters" in the speech menu.

Challenges and Tips:
Most students have difficulty with the following letters or groups of letters:
  • letters **d**, **f**, **h** and **j** (as they are tactually similar)
  • letters **e** and **i** (are often reversed)
  • letters **w** and **r** (are often reversed)
  • the letter **n** (complicated to braille)
  • the letter **z** (complicated to braille and used infrequently)

Unit 3, Lesson F has a special activity for students struggling with letters d, f, h, and j - the Canada Post Game.

It is not important for the student to fully master the alphabet before moving on to reading and brailling words. The letter box activity will be your indicator to which letters they are struggling with.

Step-By-Step Instructions:
1. Introduce the remainder of the braille alphabet - letters d, f, h, i, j, n, o, r, s, t and z. Use the muffin pan and the swing cell for support. Also include letters a, b, c, e, g, k, l, m, p, q, u, v, w, x and y for review.

2. Using the 'letter box' activity cards *read* and *braille* the same letters (a, b, c, e, g, k, l, m, p, q, u, v, w, x and y). Providing support when necessary, remember to put check marks in the corner of the cards when the student reads or brailles letters independently.

Skills Checklist:

yes   not yet

☐   ☐   Able to braille the alphabet.

☐   ☐   Able to read the braille alphabet.
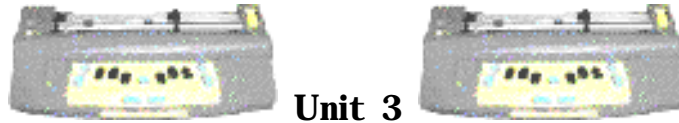
Unit 3
Lesson C: Braille Lego - Optional
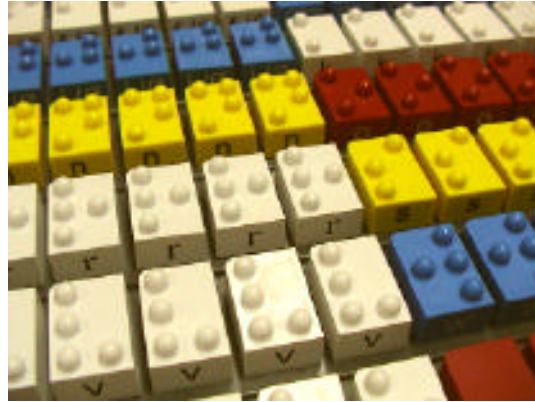
Objectives:
> • the student will be introduced to Tack-Tiles (braille Lego)

Brief Review Of Necessary Skills:
Review the braille alphabet, both reading and brailling.

Equipment and Resources:
> • MB Pro
> • padded mat
> • braille paper
> • 'letter box' cards
> • Tack-Tiles (Braille Lego)

Preparations and Settings:
Note: If your School District does not own a set of Tack-Tiles they can be borrowed from the P.R.C.V.I. (applies to British Columbia Vision Teachers).

1. Set up the braille alphabet on the Lego boards provided.

2. On a separate board display the alphabet at random.

Challenges and Tips:
Tack-Tiles are a wonderful product especially if the student is having difficulty identifying the subtle details of the braille cell tactually.

If a student is struggling to grasp their braille letters start large and reduce the size as their proficiency increases i.e. muffin pan → swing cell→ A.P.H. push cell→ braille Lego→ paper braille.

Step-By-Step Instructions:

Tact-Tiles

Background:
A father of a visually impaired child invented Tack-Tiles. His son was struggling to learn the braille alphabet. One day he was playing Lego with his son and noticed that one of the Lego blocks had six raised dots much like a braille cell. He used a file to remove some of the remaining dots and heat to round off the dots to create a rather crude braille alphabet. The commercial product is now injection molded but still interlocks with regular Lego bricks. Parents like Tack-Tiles as both the letter and the contraction are printed on the front of each Lego tile.

1. Have the students read the braille alphabet.

2. Show the student the second board (alphabet displayed at random). Have them view the letters and start removing letters that they are able to identify.

I understand that not everyone has access to Tack-Tiles, but they can be a very useful resource, especially for teaching simple words and to introduce how to create sentences (using the capital and period tiles).

Skills Checklist:
yes   not yet

☐   ☐   • Able to read the braille alphabet using Tack-Tiles.
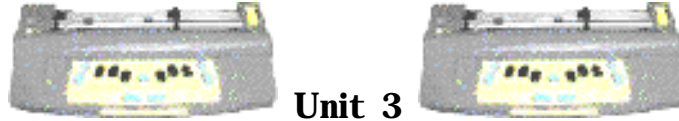
Unit 3
Lesson D: Speed Loading

Objectives:
- the student will load the MB Pro in 40 seconds or less
- the student will use a timer (with support)
- the student will use a graph to plot braille loading speed

Brief Review Of Necessary Skills:
Review the braille alphabet, both reading and brailling.

Equipment and Resources:
- MB Pro
- padded mat
- braille paper
- braille graph paper (tactile graph)
- talking stopwatch (LS &S)
- tactile sticky dots
- primary pencil
- print exercise book - journal (borrow from a peer)

Preparations and Settings:
1. Create a 'Speed Loading Graph' (a simple tactile graph using braille graph paper created on the MB Pro). Each square will stand for 10 seconds. As the student hasn't been exposed to braille numbers and words, create a graph without using labels.

Create the graph with the graphics mode active. **(command)GF(enter)** "on/off"
When the graphics mode is active you can create a row of dots or a shape and the braille cells gap no longer appears.
Specifications (see fig #1 on this page):
- 8 squares down and 10 squares across
- squares should be approximately 2 cm x 2 cm

Save the graph as an MB Pro file titled 'graph'. It will be printed out in front of the student during the lesson.

Speed Loading Graph
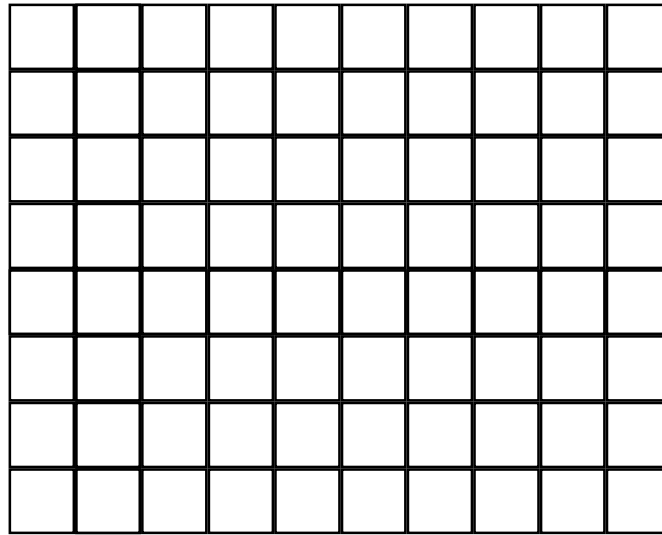
(fig. #1)

Challenges and Tips:
Graphing can be a challenging concept to grasp, however, this activity was designed as an exposure exercise. Students enjoy applying the tactile dots and trying to beat their previous loading speed.

Step-By-Step Instructions:
1. Without telling the student, time how long it takes your student to load paper into the MB Pro.

2. Tell them that you timed their MB Pro loading speed e.g. "It takes you 1 minute and 35 seconds to load your brailler".

3. Explain that it's very important to load their MB Pro as quickly as possible so they are ready for brailling. Show them a print exercise book - journal. Using hand-over-hand show them how other children just need to pick up a pencil and open their journals to the next available page. As a braille user they need to be aware that setting up their brailler is more complicated and therefore takes more time so they need to be very proficient at loading it.

4. Show them a talking timer. Show them how to start timing, stop timing and reset the timer. The timer will be used to record their loading speed.

5. Braille out the speed-loading graph (MB Pro file 'graph').

   MB Pro: *(command)***PR** *(space)***GRAPH** *(enter)*

6. Explain that the graph will be used to record the brailler loading speed.

7. With support they can apply tactile stickers to the graph. This is a wonderful activity for developing their fine motor skills, but they may need help applying the first few dots. If the first timed loading takes 1 minute and 10 seconds, have the student place 7 stickers in the first column (see fig. #2 on the next page).

Note: tactile dots ◯ represent 10 second increments. Each column represents a 'speed loading' session.

Speed Loading Graph (sample of completed graph)
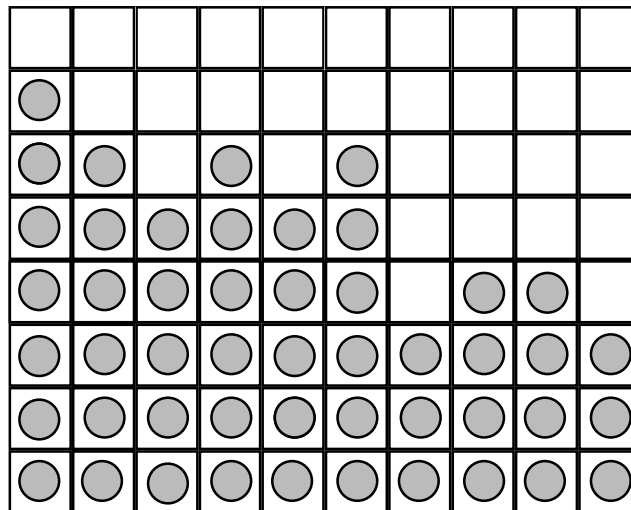
fig. #2

Skills Checklist:

yes   not yet

☐   ☐   Able to load the MB Pro in 40 seconds or less.

☐   ☐   Able to start, stop and reset a talking timer.

☐   ☐   Able to use a graph to plot braille loading speed

Unit 3
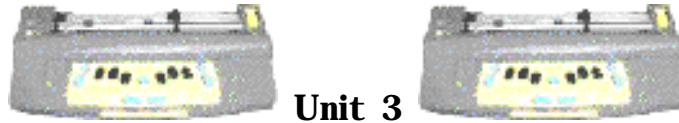
Lesson E: Shark Attack - Navigation Activity

Objectives:
- the student will learn how to navigate (forwards, backwards, down-a-line and up-a-line)
- the student will learn how to use automatic page eject

Brief Review Of Necessary Skills:
Review the backspace delete feature.

Equipment and Resources:
- MB Pro
- padded mat
- 11 x 11 braille paper

Preparations and Settings:
The preparation for this activity will be done in front of the student (if the paper is removed from the MB Pro the braille will not line up correctly with the embossing head for erasing).
See 'Step-By-Step Instructions' for details.

Step-By-Step Instructions:
Shark Attack is a fun activity designed to teach MB Pro navigation.

1. Show the student how to navigate:

forwards - *spacebar*   backwards - *backspace*
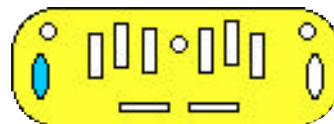
up-a-line (same cell) -
backspace +new line

down-a-line (same cell) -
new line +spacebar
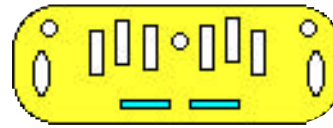
start a new line - *enter*
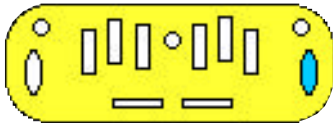
2. Review the backspace delete feature -
backspace+spacebar

3. Have the student insert a new sheet of braille paper (11 x 11).

4. Braille the letter 'g' ⠛ about 12 times in various areas of the braille page (in front of your student). Explain that these are little fish swimming in the ocean.

5. Centre the embossing head on the page before starting. Explain that you are a very hungry great white shark and you want fresh fish for supper. Explain that once you know how to move around and swim you can start eating the fish.

6. Have them navigate to 1 cell in front of the fish and backspace delete to gobble up the fish.

There are other variations of the same game:
*• **The Star Catcher Game** - students have to catch as many stars as possible (braille the letter 's' ⠎ for star). Set an auditory timer for 2 minutes and then count the consumed stars, fish or sheep.*

• ***The Hungry Wolf Game*** - *the hungry wolf wants to eat some tasty sheep (the fat wooly sheep are represented by a 'full cell' ⠿). Vary the number of sheep to increase or decrease the difficulty.*

Reminder: to enable the student to successfully delete the braille <u>don't</u> eject the paper after you have created the fish, stars or sheep, otherwise the embossing head will not line up correctly.

7. Have the student use the automatic page eject feature to remove their braille page.
eject page - *new line +enter*

Skills Checklist:

yes   not yet

☐   ☐   Able to navigate forwards.

☐   ☐   Able to navigate backwards.

☐   ☐   Able to move down a line.

☐   ☐   Able to move up a line.

☐   ☐   Able to remove a page using the automatic page eject

            feature.

Unit 3
Lesson F: Canada Post Game

Objectives:
- the student will read and braille the letters d, f, h and j

Brief Review Of Necessary Skills:

During an orientation and mobility activity visit an actual mailbox for some hands-on learning. Ask the student if they know what a mailbox is used for and provide any missing information. Explain what happens to an envelope when it is mailed home. Have them mail a prepared envelope to their own home. Show them the stamp and explain that their address is also on the envelope.

Equipment and Resources:
- MB Pro
- braille paper
- padded mat
- muffin pan braille all
- braille 'letter' addressed to the student
- Mini Canada Post Mail boxes
- Mail Cards
- fruit leather

Preparations and Settings:

1. Create a braille note:
- print the student's address on the envelope including a return address
- braille the student's name on the envelope
- braille the student's name on a small card
- attach a package of 'fruit leather' to the card
- print a message " I hope you enjoy this fruit leather"

2. Create small mail cards (braille letters d, f, h, j - 7 of each letter). Interline the cards to assist with visual identification.
Cut off the top right corner to identify the top. The cards need to be small enough to post into your mailboxes.

3. Create four small Canada Post mailboxes. Paper fasteners can be used so the students can pull down the mail slot. Depending on your creative abilities you can attach elastic bands to create an automatically closing mail slot. Create a slot on the outside of the mailbox for the letter that needs to be mailed in each mailbox (see the photographs below). *Anne Wadsworth originally shared this idea on the B.C. Vision Teacher's List Serve. Thanks Anne it was a helpful suggestion!*

Challenges and Tips:
The challenges in this activity will be more for the Vision Teacher than the student. The mailboxes can be rather difficult to create. The end results are well worth the effort though, because most students will be enthusiastic and highly motivated to mail their braille letters.

Step-By-Step Instructions:
1. Visit a mailbox in the community, providing a tactile orientation.

2. Have the student mail a prepared letter to themselves. Show them the braille name on the outside of the envelope. Inform arrive at their house over the next two days. Have them open the mail slot and drop in the envelope.

3. Have the student tactually explore one of the mini mailboxes and show them how to mail a 'braille letter'.

4. Explain to your student that braille letters d, f, h and j are often tricky to learn because they 'look' very similar.

5. Review braille letters 'd' and 'f'.

6. Mix up the 'd' and 'f' family mail and show them the unsorted pile of letters.

7. Set up two mailboxes, one marked with the letter 'f' and the other with the letter 'd'. Get them to sort the mail into the correct slot. Review the results with the student after all 14 letters have been mailed.

As the student becomes proficient add a third mailbox and have the 'h' family 'move to town'. Later you can add a fourth mailbox and have the 'j' family move as well.

Depending on your student is needs the letters i and e can also be practiced using the mailbox game.

Skills Checklist:

yes   not yet

☐   ☐   Can consistently read the letter 'd'.

☐   ☐   Can consistently braille the letter 'd'.

☐   ☐   Can consistently read the letter 'f'.

☐   ☐   Can consistently braille the letter 'f'.

☐   ☐   Can consistently read the letter 'h'.

☐   ☐   Can consistently braille the letter 'h'.

☐   ☐   Can consistently read the letter 'j'.

☐   ☐   Can consistently braille the letter 'j'.

Unit 3
Lesson G: Braille Numbers

Objectives:
> • the student will braille numbers the 1, 2, 3, 4, 5, 7, and 10

Brief Review Of Necessary Skills:
Not for this activity.

Equipment and Resources:
> • MB Pro
> • padded mat
> • braille paper
> • number cards
> • Tack-Tiles
> • muffin pan braille cell
> • swing cell

Preparations and Settings:
1. Create the following number cards (1, 2, 3, 4, 5, 7, and 10).
Just like the cards created for the 'letterbox' activity.

Challenges and Tips:
Except for brailling their names this will be the first activity that involves brailling in consecutive braille cells. Complex spatial relationships occur between braille cells. Reading a braille letter 'b' on its own is much easier to decode than a number sign 'b' = 2.

When the braille is larger it is easier for the student to tactually explore the relationship between braille cells. Tack-Tiles (braille Lego) works very well.

Step-By-Step Instructions:
1. Introduce the number sign using the muffin pan followed by the swing cell and if available Tack-Tiles (braille Lego).

2. Have them braille a number sign followed directly by the letter 'c'. When they press the spacebar the MB Pro will let them know that they have just brailled the number 3. Explain that the letter 'c' is the third letter in the alphabet.
- **a** (1), **b** (2), **c** (3), **d** (4), **e** (5), **f** (6)
When a number sign is placed in front of the letter 'c' it then becomes a number 3.

3. Ask them to braille the number 2. Get them to verbalize the 2nd letter of the alphabet - **a** (1), **b** (2), **c** (3), **d** (4), **e** (5)

4. Also teach numbers 1, 4, 5, 7, and 10.

5. The number 10 will be more of a challenge to teach (explain that 10 is a **1** followed by a **0** (let the student know the letter 'j' is zero in braille).

6. Add the number cards to the 'letter box' cards and apply the same rules i.e. student need five consecutive check marks under 'reading' and 'brailling' before the card is retired as a 'Hall-Of-Fame' number.

When students start reading braille numbers they may say "number sign 3" or "number 5", this can be helpful at first but they should quickly learn to say "3" or "5" and know that the number sign is silent.

Skills Checklist:

yes   not yet

☐   ☐   Able to braille numbers 1, 2, 3, 4, 5, 7, and 10

Unit 3
Lesson H: Synthetic Speech Menu

Objectives:
- the student will know how to open the Speech Menu
- the student will know how to adjust speech settings
- the student will know how to exit from the Speech Menu

Equipment and Resources:
- MB Pro
- padded mat
- braille paper

Preparations and Settings:

Synthetic speech can only be activated in the *advanced mode*. If you try the following command in the learn mode it will say "command error".

To turn on/off advanced mode:
*(command)***ADV***(enter)*

Activating Synthetic Speech:
*(command)***SPK***(space)***S***(enter)*

Step-By-Step Instructions:

1. Explain how to activate the Speech Menu:
new line + space + **S** (together)
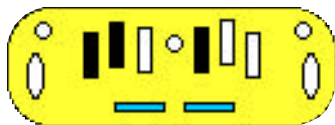
MB Pro will say: "Speech Menu"

2. Have them practice with the following adjustments and find a comfortable setting.

softer
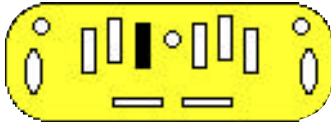
louder
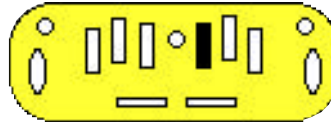
slower
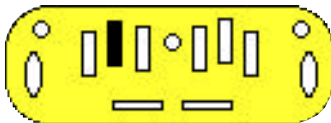
faster

lower
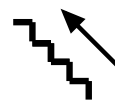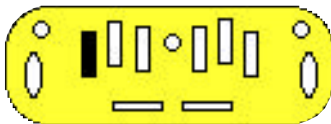
higher
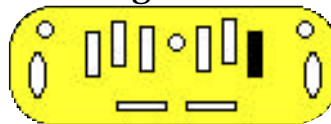
3. It is helpful if the student is aware of the following Speech Menu settings. The **highlighted setting** is the most appropriate for a beginning student.

When a letter is repeated i.e. the letter 'P' for Punctuation you move through a list of options

P = Punctuation
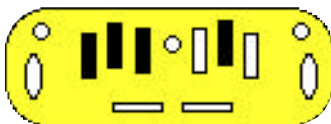
- **"some"**
- "none"
- "most"

E = Echo
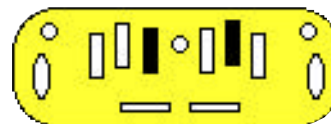
- "echo letters"
- "echo words"
- **"echo both"**
- "echo no"

N = Numbers
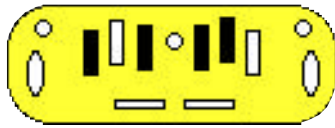
- **"numbers spoken as words"**
- "numbers spoken as digits"

K = Speak Capital Letters
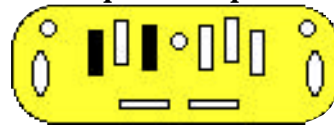
- "cap no"
- **"cap yes"**

S = Spaces
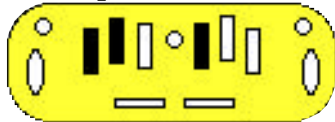
- **"speak spaces yes"**
- "speak spaces no"

C = Commands
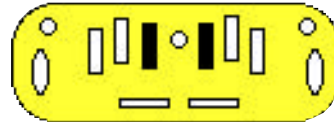
- **"speak commands yes"**
- "speak commands no'

The "speak commands" feature is helpful for younger students who require auditory feedback while brailling commands.

Please see the MB Pro Visual Guide for a complete list of Speech Menu options.

4. Have the student 'exit' from the Speech Menu:

E + *space* **(together) = "Exit"**

Skills Checklist:

yes   not yet

☐   ☐   Able to open the Speech Menu.

☐   ☐   Able to adjust speech settings.

☐   ☐   Able to exit from the Speech Menu.

U n i t

4

Lesson A (Chorded Commands)

Lesson B (Whole Word Contractions)

Lesson C (Overstrike)

Lesson D (Word Box)

Lesson E (MB Pro Commands)

Lesson F (Create A File/Brailling A File)

Lesson G (Braille Number Additions)

Lesson H (Learn Mode & Advanced Mode)

Lesson I (Synthetic Speech)

Lesson J (Nonsense Words)
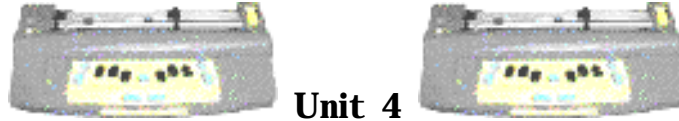
Unit 4
Lesson A: Chorded Commands

Objectives:
- the student will improve their fine motor skills by using both their fingers and thumb for keyboard entry (chording)
- the student will learn a variety of chorded commands

Brief Review Of Necessary Skills:
Review the navigation activity (Unit 3, Lesson E).

Equipment and supplies:
- MB Pro
- padded mat
- braille paper

Challenges and Tips:
Brailling chords can be tricky for young children still developing their fine motor skills. They are expected to use their fingers and right thumb all at once to complete a successful chord command.

Step-By-Step Instructions:

1. Explain that with most computer technology (this includes the MB Pro) there is more than one way to do something. The MB Pro has a series of chorded commands much like 'quick keys' on the computer. Some of the navigation commands that were taught in Unit 3, Lesson E have chorded commands that accomplish the same task.

2. Explain that a chorded command is a space bar and a specific letter pressed simultaneously. Teach the student the following chorded commands. Provide a hand-over-hand demonstration for the first two chorded commands.
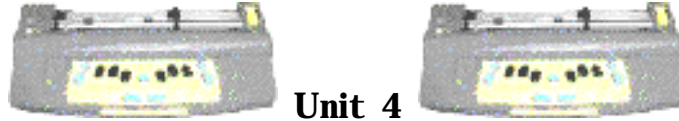
c chord   **carriage return**

f chord   **line feed** *(down 1 line)*

r chord   **reverse line** *(up 1 line)*

t chord   **tab** *(pre-set to move forwards 5 braille cells)*

b chord   **back tab** *(pre-set to move backwards 5 braille cells)*

p chord   **page eject** *(auto page removal)*

Please refer to the 'MB Pro Visual Guide' or the Quantum manuals to view other chorded commands. Use caution with
__h__ chord as it starts brailling the whole 'help summary'.

Skills Checklist:

yes   not yet

☐   ☐   Able to ***carriage return*** using a chorded command.

☐   ☐   Able to move ***down 1 line*** using a chorded command.

☐   ☐   Able to move ***up 1 line*** using a chorded command.

☐   ☐   Able to ***tab*** using a chord command.

☐   ☐   Able to ***back tab*** using a chord command.

☐   ☐   Able to ***page eject*** using a chorded command.

☐   ☐   There is a noticeable improvement in fine motor dexterity.

Unit 4
Lesson B: Whole Word Contractions

Objectives:
- the student will learn all of the whole word braille
  contractions

Brief Review Of Necessary Skills:

Review the braille alphabet both reading and brailling - 'letter box' activity. It is expected that the student knows how to read and write most the braille alphabet.

Equipment and supplies:
- MB Pro
- padded mat
- braille paper
- flashcards - whole word contractions
- 'letter box' cards

Preparations and Settings:

1. Create a set of cards - 'whole word' contractions.

b = but	**j** = just	**r** = rather	**y** = you
c = can	**k** = knowledge	**s** = so	**z** = as
d = do	**l** = like	**t** = that	
e = every	**m** = more	**u** = us	
f = from	**n** = not	**v** = very	
g = go	**p** = people	**w** = will	
h = have	**q** = quite	**x** = it	

2. Set the MB Pro to 'learn mode'

Challenges and Tips:
Now the student can identify most braille letters, they will move on to a stage which is less of a tactile and more of a memory challenge: b = but, c = can etc. The 'whole word' contractions **'z'** for **as** and **'x'** for **it** can be quite challenging to learn because the contraction letter does not match the first letter of the word. These are usually the last two 'whole word' contractions learned, but with repetition the student soon memorizes the contractions.

Step-By-Step Instructions:
1. Demonstrate how bulky braille can be. Show them a novel such as 'Harry Potter And The Goblet Of Fire' first in print and then the all the volumes in the braille version (stack all 10 braille volumes on a pile on the student's desk). Show them that even though the books are brailled on both sides of the page, the volumes it still take up a lot of space.

2. Explain how braille would take up even more space if it didn't contain contractions (or short cuts to brailling various words). Words that are used a lot are represented by single letters e.g. "like" is just a letter "L" in braille. Explain that these contractions are called 'whole word' contractions.

3. Teach them all of the 'whole word' contractions: B = but, c = can, d = do, etc. When the student brailles a letter 'b', followed by a space, the MB Pro contraction "but" is spoken.

4. Have them memorize all of the 'whole word' contractions.

Skills Checklist:

yes   not yet

☐   ☐   Can recall all of the whole word contractions.

Unit 4
Lesson C: Overstrike

Objectives:
> • the student will use the overstrike feature to erase and
>   replace braille

Brief Review Of Necessary Skills:
Review the backspace delete feature
Press both the *backspace + space* at the same time.

Equipment and Resources:
> • MB Pro
> • padded mat
> • braille paper

Preparations and Settings:
No preparation required.

Challenges and Tips:
The 'overstrike' feature does not always fully erase the previous braille. As I mentioned earlier, younger children often find the results confusing and have difficultly ignoring the braille residue from a previously erased cell, therefore this is not a feature we use very often with our new braille users.

Step-By-Step Instructions:

1. Explain that there is a quicker way to delete and replace a braille letter (instead of 'backspace delete' followed by another backspace and then the correct letter).

2. Show the student how to erase using the 'overstrike' feature. Explain that you can erase a letter and replace it with one keystroke.
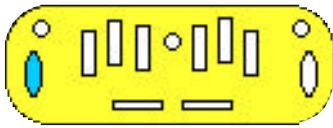
 + the braille correction

Press the *backspace* key and the braille correction at the same time (e.g. erase a letter 'b' and replace it with a letter 's').

3. Have them erase and replace various braille letters using 'overstrike'.

Skills Checklist:

yes   not yet

☐   ☐   Able to erase and replace braille using the overstrike feature.
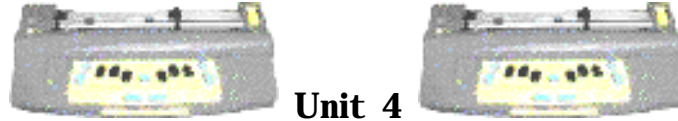
Unit 4
Lesson D: Word Box

Objectives:
- the student will be introduced to the 'word box' activity
- the student will learn how to braille the following words -
  all, ball, hall, call, tall, fall, we *and* me

Brief Review Of Necessary Skills:
Review the following:
- braille numbers 1, 2, 3, 4, 5, 7, and 10
- whole word contractions

Equipment and Resources:
- MB Pro
- padded mat
- braille paper
- braille/print word box cards

Preparations and Settings:
Incorporate any uncompleted 'letter box' cards into the new 'word box' activity

Word Box Cards:
Introduce braille words in the order that works best for your student. The list words will vary depending on:
a) what the teacher is covering in the classroom (colour words for example),
b) the braille contractions being focused on by the Vision Teacher and
c) the student's need to know a variety of high frequency words (such as Dolch and Fry words). The list of words provided in these lesson plans only serves as a guide - adapt the lists to suit your specific needs.

1. Create a series of braille/print flash cards ('word box'):
Reminder:
- cut off the top right hand corner of each card
- braille full cells along the top
- braille first in **G2 braille** (three spaces) then in **G1 braille**
- interline the braille word using a black felt pen
- underline the contracted portion of the word using a red felt pen
- using a fine point felt pen print "braille" in the top left hand corner and "read" in the top right hand corner
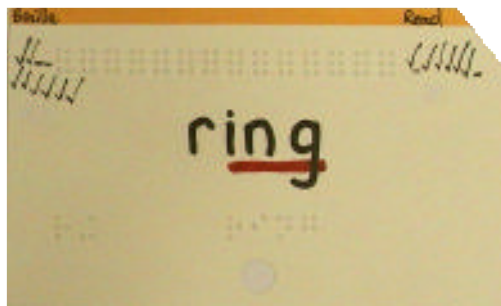
'word box' card

2. Braille the following words: all, ball, hall, call, tall, fall, we *and* me.

3. Make sure that the MB Pro is still set to 'double' spacing.
*(command)***LS** *(space)***2** *(enter)*
The MB Pro will say "ok" after you select the enter key.
Use a Nemeth number without a number sign.

4. Set the following:
Word wrap is still off.
*(command)***WW** *(enter)* **"on"** or **"off"**

Turn on advanced mode.
*(command)***ADV** *(enter)*

Activating Synthetic Speech:
*(command)***SPK** *(space)***S** *(enter)*

Go to the speech menu and select "echo both"

new line + space + S (together)

It is important that the MB Pro speaks both the individual characters and the complete word.

Challenges and Tips:
To help demystify braille contractions, usually for parents and classroom teachers, we underline the contracted portion of the braille word (the printed interlined word). This indicates which words or parts of words contain contractions.

Step-By-Step Instructions:
1. Teach the student the following braille words:
all, ball, hall, call, tall, fall, we *and* me

2. Have the student braille the words on the MB Pro. When the student has brailled a word have them tactually check what they have brailled. It is important that they do not rely solely on auditory feedback.

3. Introduce the 'word box' activity. Explain that they have graduated to 'word box'. If words have contractions they will first be brailled in G2 braille and then in G1 braille.

Review Word Box Rules:
Word Box cards will measure how well the student can braille and read various words. Each time the student correctly brailles a word they get a check mark on the "braille" side of the card (top left hand corner) and every time they correctly identify a braille word tactually they get a check mark on the "read" side of the card (top right hand). Only one check mark can be added per session, i.e. one on each side of the card. If the student brailles or reads the word incorrectly they get a line instead of the check mark. The word becomes a 'Hall of Fame Word' when there are 5 consecutive checkmarks on either side of the card.

Skills Checklist:
yes   not yet

☐   ☐   Able to braille and read the following words: all, ball, hall, call, tall, fall, we *and* me.
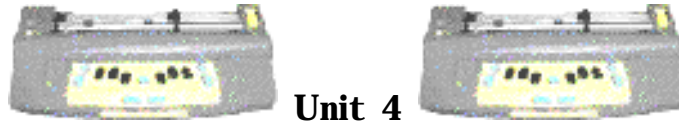
Unit 4
Lesson E: MB Pro Commands

Objectives:
> • the student will learn how to enter various commands

Brief Review Of Necessary Skills:
Review the location of the *command* and *enter* keys.

Equipment and Resources:
> • MB Pro
> • padded mat
> • braille paper

Preparations and Settings:
No preparation required for this lesson.

Challenges and Tips:
If the student makes an error entering a command they can simply press the command key to start again.

Step-By-Step Instructions:
1. Explain that when you send a command to the MB Pro you are basically telling it what to do e.g. turn on advanced mode or turn off synthetic speech.

2. Let the student know that every command starts with the *'command'* key and ends with the *'enter'* key.
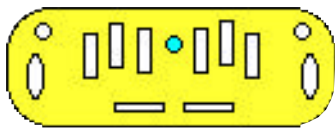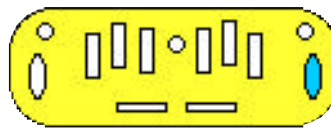
start   end

3. Have the student switch between 'learn mode' and 'advanced mode' *(command)* **ADV** *(enter).* Explain that if they repeat the command they can jump from one mode to the other. Unit 4, Lesson h will cover the difference between these two modes.

Advanced Mode On/Off:
(command) **ADV** *(enter)*
(MB Pro will say *"advanced mode on"*)

(command) **ADV** *(enter)*
(MB Pro will say, *"advanced mode off"*)

Skills Checklist:

yes   not yet

☐   ☐   Able to successfully complete an MB Pro command.
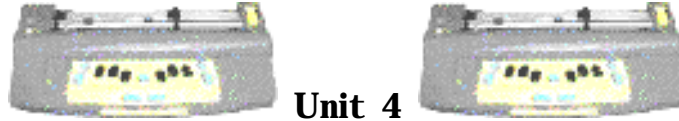
Unit 4
Lesson F: Creating A File/Brailling A File

Objectives:
- the student will create an MB Pro file
- the student will emboss a saved MB Pro file

Brief Review Of Necessary Skills:
Remind the student that every command starts with the *'command'* key and ends with the *'enter' key*.

Equipment and Resources:
- MB Pro
- padded mat
- braille paper
- paper file folder
- non-slip rubber mats

Preparations and Settings:
1. Set Speech Menu to 'speak letters'.

2. Create an MB Pro file titled 'ball' containing the following words:

all	ball	call	tall	fall	hall	ball	call	all
ball	hall	fall	tall	tall	call	ball	all	fall
hall	fall	tall	call	all	hall	fall	call	hall

Challenges and Tips:
Many children with visual impairments are startled by loud or unexpected sounds. Warn them before brailling out saved files as this is a noisy activity.

Step-By-Step Instructions:

1. Inform the student that the MB Pro has a memory, much like his or her own memory. The MB Pro can save many pages of braille in electronic files. Show a real file folder containing various sheets of paper. Explain that an MB Pro file is just like this paper file. Mention that we can give these files names (a name that lets us know what is inside). A story about 'Max The Cat' could be in a file labeled "cat".

2. Have the student braille out the saved file "ball" (see 'Preparations and Settings').

Embossing a saved file:
*(command)***PR***(space)***BALL***(enter)*

3. Have the student use page eject and place the braille paper on a non-slip reading mat. Have them read the words.

4. Have the student create a file named 'abc' (get them to braille the alphabet with spaces and without commas). Explain that they should only use Grade 1 braille when brailling commands. File names can have up to 16 characters including numbers but no spaces.

Starting a new file:
*(command)***BEGIN***(space)***file name'***(enter)*

a b c d e...

Ending a file:
*(command)***END***(enter)*

5. Have them braille and emboss the alphabet. Repeat and emboss four more times.

Embossing a saved file:
*(command)***PR***(space)***ABC***(enter)*

6. Show them a faster way to print multiple copies.

Embossing multiple copies:
*(command)***MPR** *(space)***5** *(space)***ABC** *(enter)*
This command will produce five copies of the alphabet.

Skills Checklist:

yes   not yet

☐   ☐   Able to create an MB Pro file.

☐   ☐   Able to emboss a saved MB Pro file.

Unit 4
Lesson G: Braille Number Additions

Objectives:
> • the student will braille the numbers 6, 8, and 9

Brief Review Of Necessary Skills:
Review the number sign.
Review numbers 1, 2, 3, 4, 5, 7, and 10

Equipment and Resources:
> • MB Pro
> • braille paper
> • number cards

Preparations and Settings:
1. Create the following number cards (6, 8 and 9).

Step-By-Step Instructions:
1. Introduce numbers 6, 8 and 9.

2. Review numbers 1 to 10 (brailling and reading).

3. Add all of the number cards to the 'word box' cards and apply the same rules i.e. the student needs five consecutive check marks under 'reading' and 'brailling' before the card is retired as a 'Hall-Of-Fame' word.

Skills Checklist:

yes   not yet

☐   ☐   Able to braille numbers 6, 8 and 9.
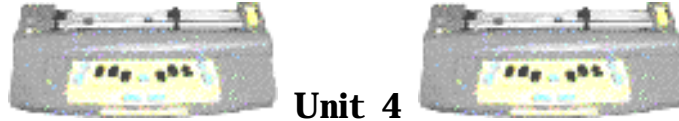
Unit 4
Lesson H: Learn Mode & Advanced Mode

Objectives:
- the student will learn the difference between learn mode
  and advanced mode

Brief Review Of Necessary Skills:

Remind the student that every command starts with the *'command'* key and ends with the *'enter' key*.

Review how to turn advanced Mode On/Off:
*(command)***ADV** *(enter)*
(MB Pro will say *"advanced mode on"*)

*(command)***ADV** *(enter)*
(MB Pro will say, *"advanced mode off"*)

Equipment and Resources:
- MB Pro
- padded mat
- braille paper

Preparations and Settings:

None for this lesson.

Step-By-Step Instructions:

1. Inform the student that when we received our MB Pro it was set to learn mode. For new users this is the best setting.

2. Explain to the student what the MB Pro can do in learn mode:

- **In learn mode** the Mimic port is always active. Just plug-in the Mimic and turn it on.

• **In learn mode** every key talks. This is very useful for new users. When the student raises and lowers the paper lever it will tell them "paper lever up" and "ok" when it is down.

• **In learn mode** the MB Pro is a braillewriter only.

• **In learn mode** there is only recorded speech. It is a digitally recorded human voice. The voice is easy to understand. Recorded speech is also available in advance mode.

• **In learn mode** the command key can be turned off. This is helpful during class demonstrations when their sighted peers are exploring the MB Pro.

(Press all of the following keys at the same time: *new line + space + right function + left function* and the command key will be turned off. Press these four keys again and the command key will be reactivated).

 'off'   **'on'**

3. Explain to the student what the MB Pro can do in advanced mode:

• **In advanced mode** the braille translation feature is active. Back Translation turns MB Pro braille into print (ink printer). Forward Translation turns print (from the qwerty keyboard) into braille.
• **In advanced mode** the PC keyboard produces Grade 1 and Grade 2 braille *(in learn mode only Grade 1 braille)*

• **In advanced mode** there is a choice of recorded or synthetic speech.
• synthetic speech (computer voice)
• pitch and rate can be adjusted
• unlimited vocabulary

• **In advanced mode** there is a speech editor. This is similar to the edit feature on the Braille 'n Speak (auditory editing).

• **In advanced mode** you can use ink printers.

• **In advanced mode** you can connect and communicate with other computers.

Skills Checklist:

yes   not yet

☐   ☐   Can explain three features available in the learn mode.

☐   ☐   Can explain three features available in the advanced mode.

Unit 4
Lesson I: Synthetic Speech

Objectives:
>   • the student can move from recorded speech in the 'learn
>   mode' to synthetic speech in 'advanced mode'

Brief Review Of Necessary Skills:
Remind the student that every command starts with the *'command'* key and ends
with the *'enter' key*.

Review the Speech Menu (Unit 3, Lesson H)

Equipment and Resources:
>   • MB Pro
>   • padded mat
>   • braille paper

Preparations and Settings:
Set the MB Pro to 'learn mode'.

Challenges and Tips:
It is much less challenging for the student if settings such as *advanced mode with
synthetic speech,* are configured by the Vision Teacher and are automatically
active on start-up. However it is helpful if the students know some basic settings.
If your student feels overwhelmed revisit this lesson later.

Step-By-Step Instructions:
1. Explain that they will be changing from the **recorded** speech to the **synthetic**
speech.

2. Ask the student to listen carefully when they turn on the MB Pro. Have them
tell you what mode is active (learn or advanced?).

3. If you have set up the equipment as mentioned in the 'Preparation and Settings' section they should say "Learn Mode".

4. Have them switch to 'advanced mode'. They should already know this command. *(command)***ADV** *(enter)*

5. Have them turn on synthetic speech. *(com)***SPK** *(space)***S** *(enter)*

6. Explain how to return to recorded speech in the learn mode. They simply go back to learn mode - recorded speech is the only speech option available in learn mode.
 *(command)***ADV** *(enter)*

Skills Checklist:

yes   not yet

☐   ☐   Able to move from learn mode to advanced mode.

☐   ☐   Able to activate synthetic speech.

☐   ☐   Able to return to learn mode and recorded speech.
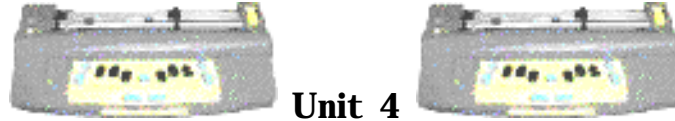
Unit 4
Lesson J: Nonsense Words

Objectives:
> • the student will participate in a 'free brailling' activity

Brief Review Of Necessary Skills:
None for this activity.

Equipment and Resources:
> • MB Pro
> • padded mat
> • braille paper

Preparations and Settings:
Set the MB Pro to 'learn mode'.

Challenges and Tips:
Some students want things to be brailled correctly and sound normal. Have them relax and enjoy the funny and strange words they create.

Step-By-Step Instructions:
1. Have the student go to advanced mode, turn on synthetic speech, go to speech menu, and set to "echo both"

2. Explain that this will be a fun activity where they can do some free brailling. By using a variety of letters in strange combinations they can create nonsense words (words that don't mean anything). When they press the space bar the word will be spoken. Encouraged them to create words that sound funny e.g.
suboo kayplock   rhtee   spagggellck

Your students will come up with better words than these. It is obvious that these nonsense words are structured. Our students will braille much more innovative words.

Skills Checklist:

yes   not yet

☐   ☐   Able to relax and enjoy the activity.

U n i t

5
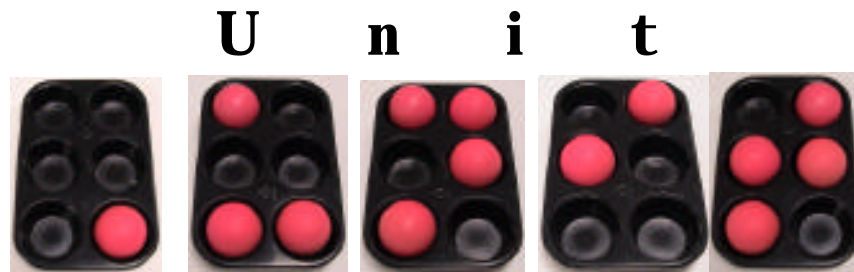
Lesson A (Tactile Awards)

Lesson B (Ghost Brailling/Word Box Additions)

Lesson C (Qwerty Keyboard - Grade 1 Braille)

Lesson D (MB Pro Commands Using The Qwerty)

Lesson E (Braille Number Additions)

Lesson F (Centering Braille)

Unit 5
Lesson A: Tactile Awards

Objectives:
- the student will emboss various pre-made tactile awards

Brief Review Of Necessary Skills:
Review brailling a saved file. (Unit 4, Lesson F)

Equipment and supplies:
- MB Pro
- padded mat
- braille paper

Preparations and Settings:
1. Create the following tactile awards: tree, heart, happy face, maze, birthday cake and alien. Make an individual file for each tactile image and give each file a simple name i.e. cake instead of birthday cake and happy instead of happy face.

Sample images are provided on the following pages.

tree
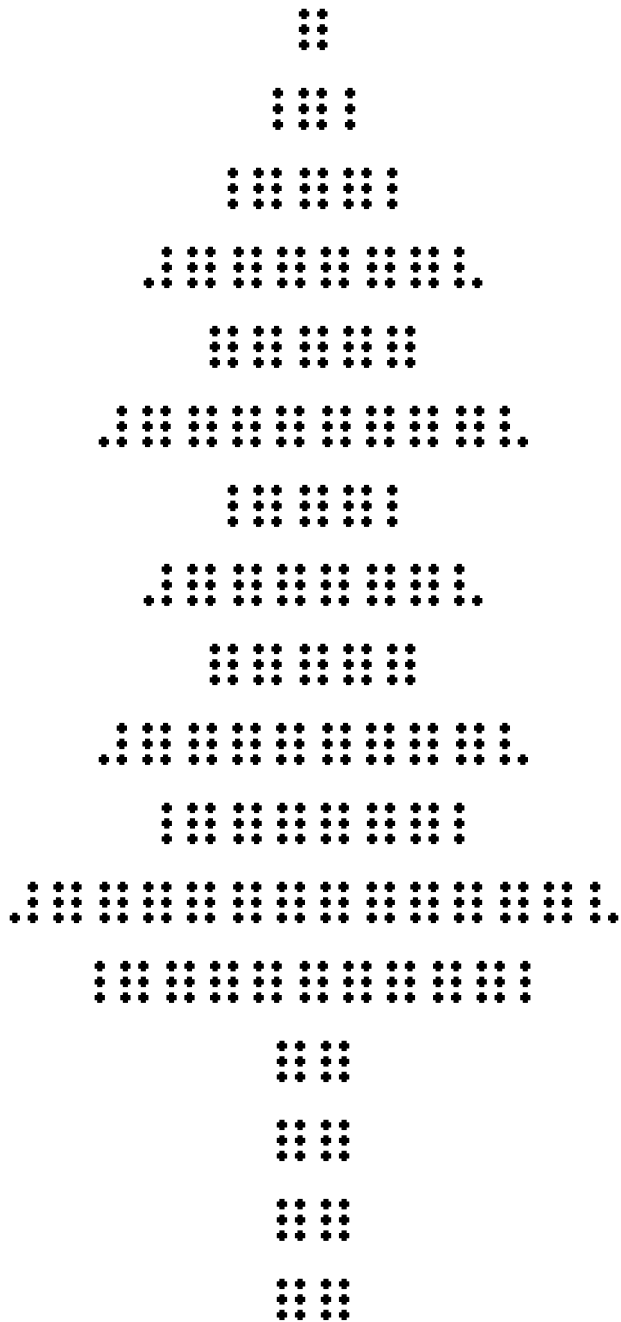
heart
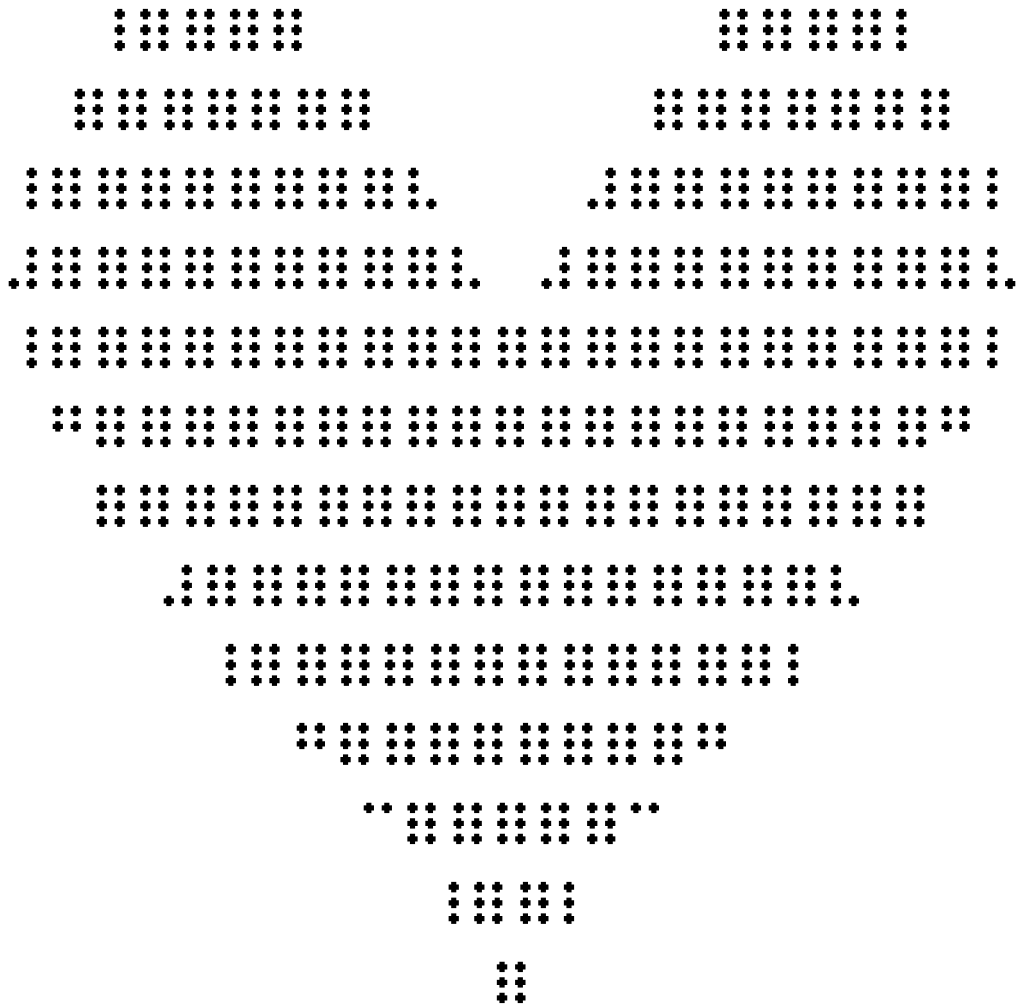
birthday cake
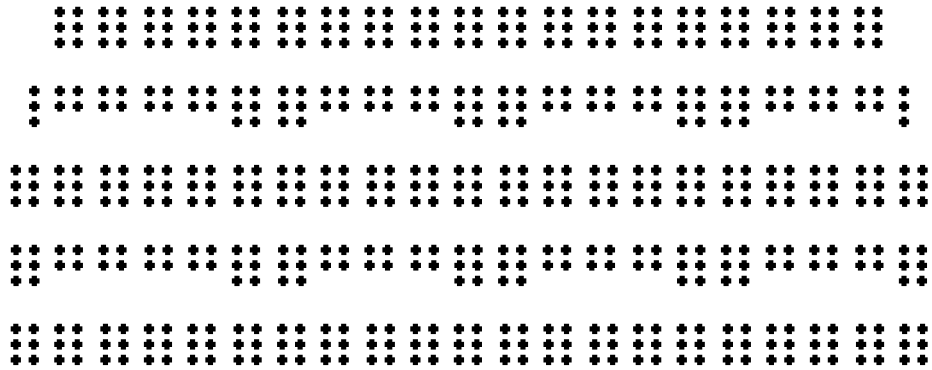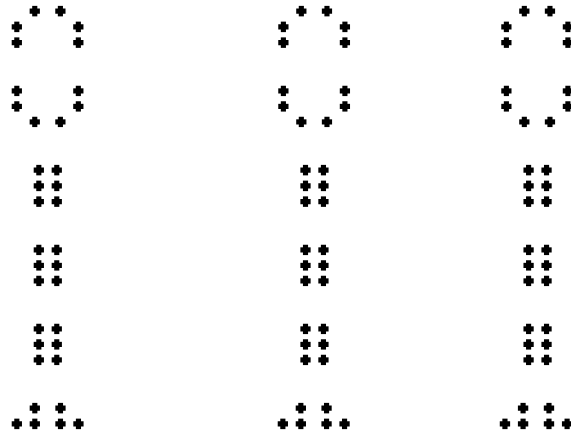
maze
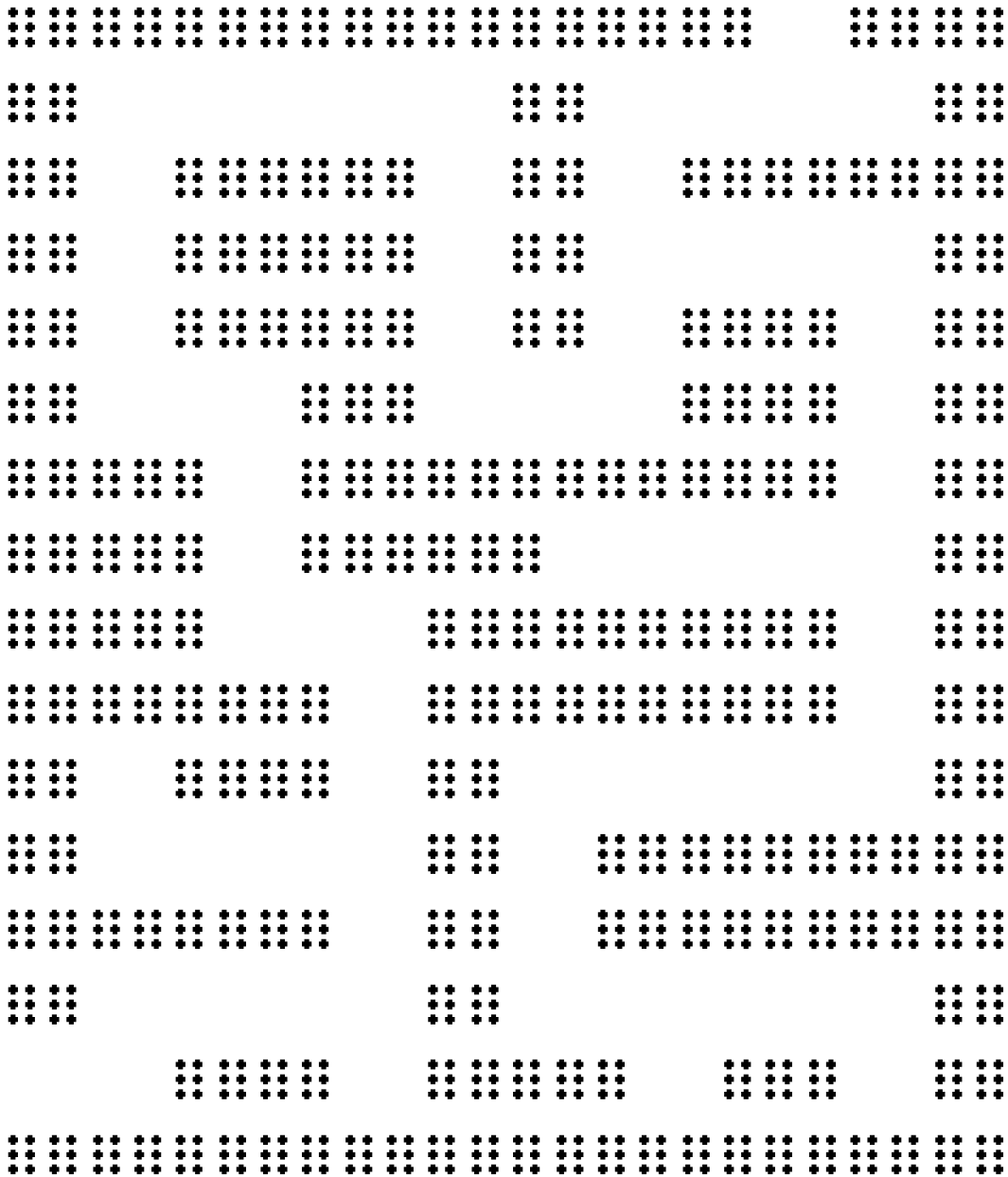
happy face
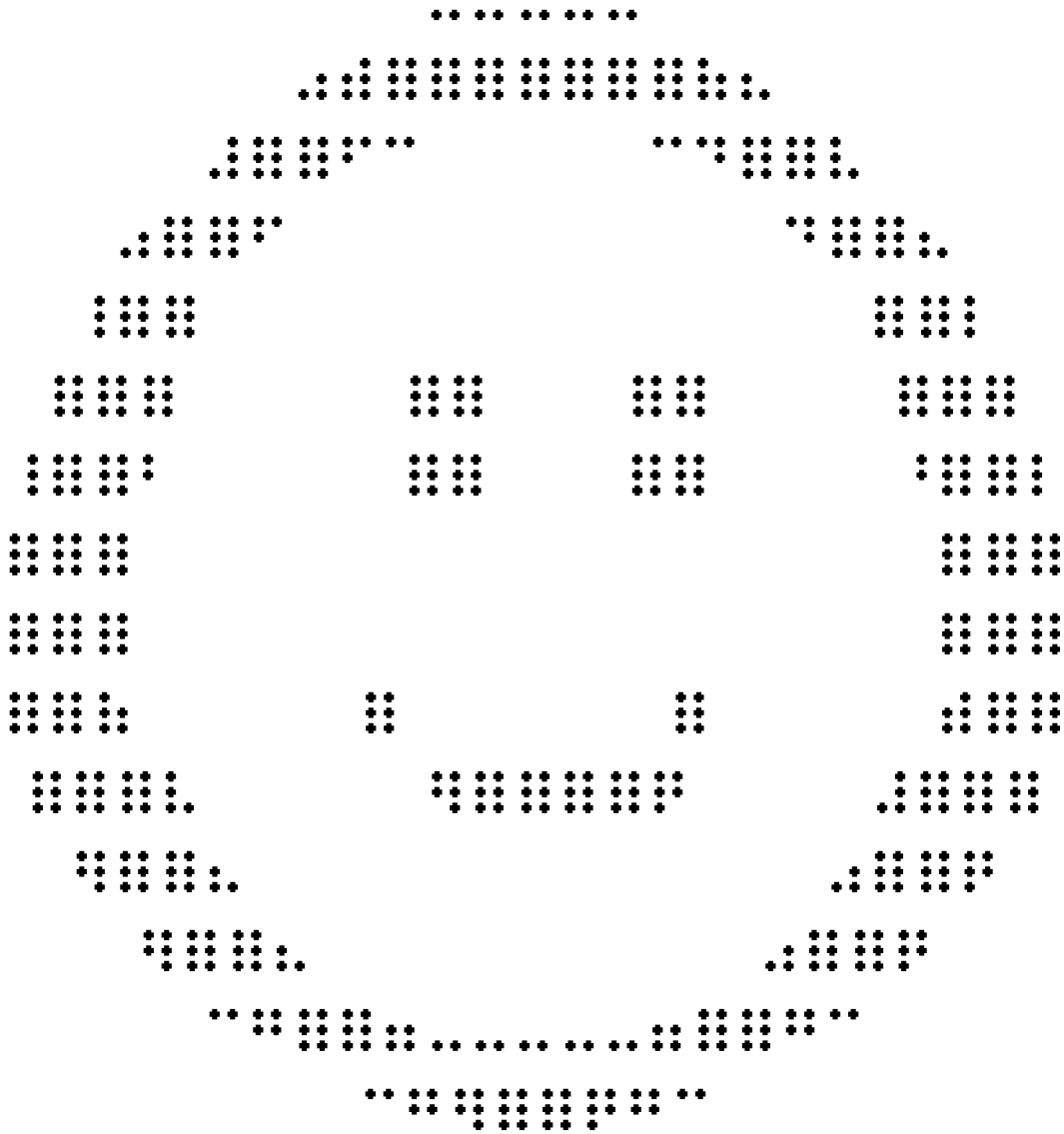
alien
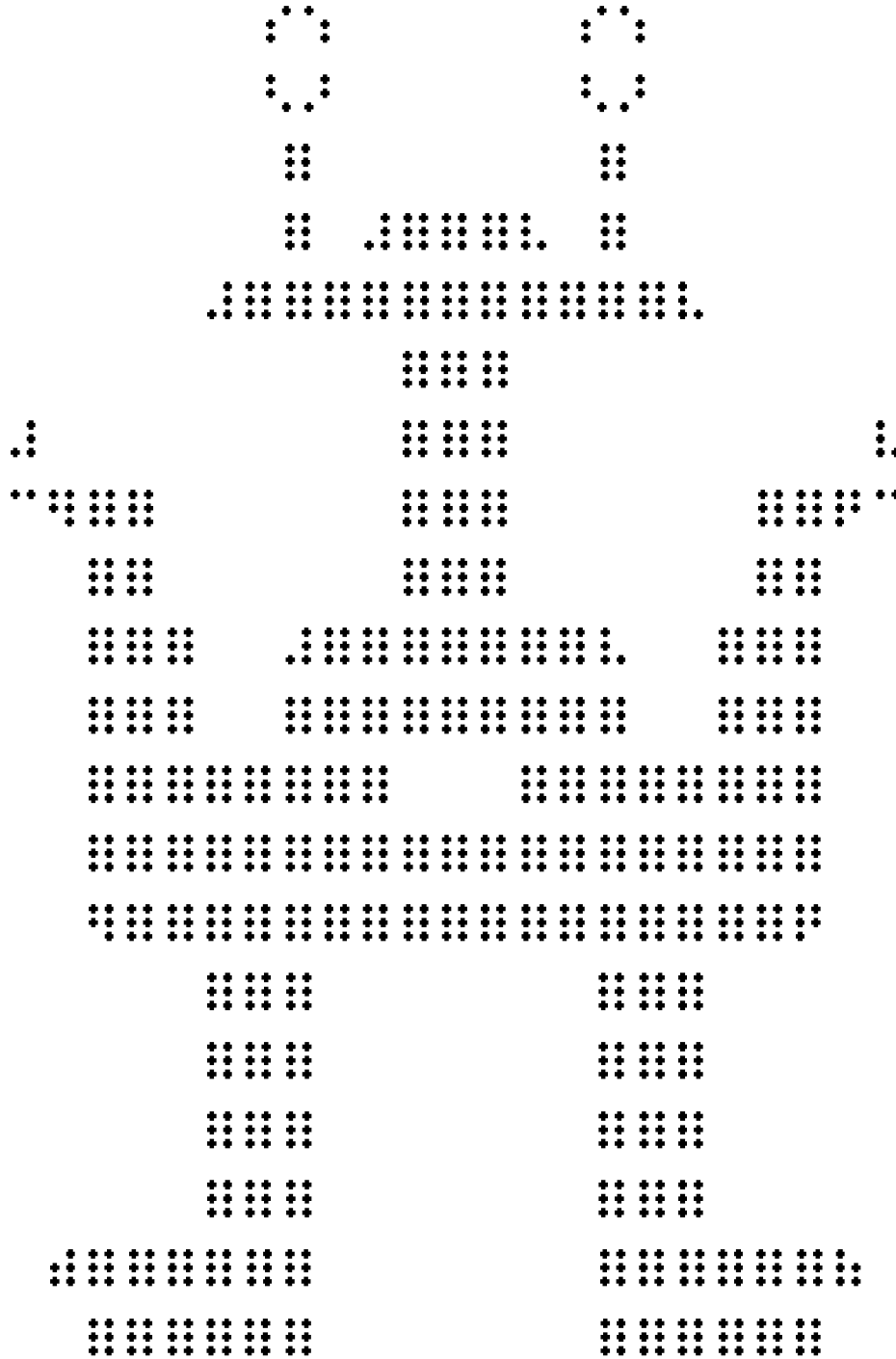
Challenges and Tips:
If the student is brailling their tactile award onto braille paper it can be rather noisy. They may want to do the embossing in a Resource Room setting or during more active times in the classroom such as centre time.

Step-By-Step Instructions:
1. Explain that these tactile awards will be provided occasionally when they have been working hard.

2. As they need practice brailling saved files they may choose two different tactile awards.

3. Provide a list of available awards: tree, heart, happy face, maze, birthday cake and alien. Assist with spelling when necessary.

4. Have the student emboss two of the following saved files:

*(command)***PR** *(space)***TREE** *(enter)*

*(command)***PR** *(space)***HEART** *(enter)*

*(command)***PR** *(space)***HAPPY** *(enter)*

*(command)***PR** *(space)***MAZE** *(enter)*

*(command)***PR** *(space)***CAKE** *(enter)*

*(command)***PR** *(space)***ALIEN** *(enter)*

Skills Checklist:

yes   not yet

☐   ☐   Able to emboss selected tactile awards - with spelling support provided.
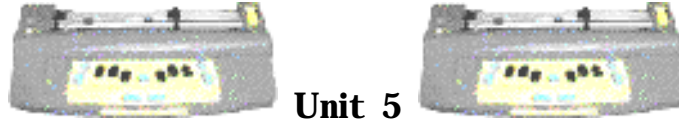
Unit 5
Lesson B: Ghost Brailling/Word Box Additions

Objectives:
- the student will learn to read and braille the following
  words: cat, rat, mat, sat, fat, bat, king, ring, wing, sing,
  dog, mom, dad, I *and* also

Brief Review Of Necessary Skills:
Review the Word Box cards.

Equipment and supplies:
- MB Pro
- padded mat
- braille paper
- qwerty keyboard
- 'word box' cards
- muffin pan braille cell
- swing cell

Preparations and Settings:
1. Create the following Word Box cards: cat, rat, mat, sat, fat, bat, king, ring, wing, sing, dog, mom, dad, I *and* also.

Set up for part A:
- set to *'advanced mode'*
  MB Pro: *(command)***ADV** *(enter)* – "on" or "off"

- set speech to "echo both"
  new line + ***space*** + **S** (together)
  'e' for echo

Set up for Part B:
2. Quietly link the qwerty keyboard to the MB Pro (best to do this when the student is out of the room). DON'T tell the student that the keyboard is connected.

3. Set up the qwerty keyboard to produce G2 braille (forward translation). Commands on the qwerty keyboard start with the '**escape**' key and end with the '**enter**' key.

- turn on *'forward translation'* for G2 braille output
  qwerty*: (esc)***FE***(end)* – "on or "off"

- set speech to "echo no"
  new line + *space* + **S** **(together)**
  'e' for echo

It is important that the MB Pro does not speak for this activity.

Challenges and Tips:
If your student is particularly sensitive and scares easily you may want to tone down the ghost story.

Step-By-Step Instructions:
Part A:
1. Explain the following:
"The school has been having problems with ghosts. Suddenly, without warning, computers turn on and words appear on the screen. Usually this happens in the middle of the night, but sometimes it occurs when the student is sitting right next to the computer. The principal has asked us all to be on the lookout for strange happenings. As far as we know there have been no ghosts brailling on our MB Pro. Maybe it's because not many ghosts know how to braille!"

2. Teach them how to <u>braille</u> the new Word Box words. Start with the 'at' words. Have them braille 'at'. Ask them if they know any words that end with 'at'. If they say "cat" have them sound it out "c-a-t" and then attempt to braille the word.
cat, rat, mat, sat, fat, bat

3. Using the muffin pan and the swing cell introduce the braille contraction 'ing'. Ask them if they know any 'ing' words. If they say "sing" have them sound it out "s-i-n-g" and then attempt to braille the word.
king, ring, wing, sing

4 Also teach them how to braille: dog, mom, dad, I *and* also.

Part B:
5. Using the qwerty keyboard, have a little fun with your student.

Note: when you have typed the word, press **'enter','enter'** *to send the braille to the MB Pro. Normally it will automatically send the braille across when the buffer is full (after 80 characters) but that is not what we want for this activity.*

Teacher: "We are now going to ..."
quietly type in 'bat' (enter/enter)
For dramatic effect, interrupt yourself with your own brailling.

They will suddenly hear some braille appear on the MB Pro.

Teacher: "Did you braille that?"
Student: "No"

Teacher: "What does it say?"
Student: "b-a-t" (provide support if necessary)

Teacher: "It must be the ghost. Wow! He does know braille!"

quietly type in 'cat' (enter/enter)

Teacher: "Did you braille that?
Student: "No"

Teacher: "It must be that ghost again! What does it say?"
Student: "c-a-t" (provide support if necessary)

Teacher: "Ghost's like bats and ghosts like cats"

6. If they haven't already figured out your little scam, explain that you were just **'pulling their leg'** (it is a good idea to start using and explaining idioms from an early age as they can often be perplexing to children with visual impairments). Show them the attached qwerty keyboard.

7. Finish the 'reading' portion of Word Box using the qwerty while the student reads from the Mountbatten. Be sure to put the appropriate check marks and lines on the actual Word Box cards.

A useful feature of Word Box is that you are quickly alerted when a student is having difficulty reading or brailling a specific word. We had one student who had a great deal of difficulty reading the word 'red' - tactually the 'ed' was read as an 'n'. The check marks with lots of lines prompted us to review the contraction in detail.

Skills Checklist:

yes   not yet

☐   ☐   Able to read the following words: cat, rat, mat, sat,
                fat, bat, king, ring, wing, sing, dog, mom, dad, I, also

☐   ☐   Able to braille the following words: cat, rat, mat, sat,
                fat, bat, king, ring, wing, sing, dog, mom, dad, I, also
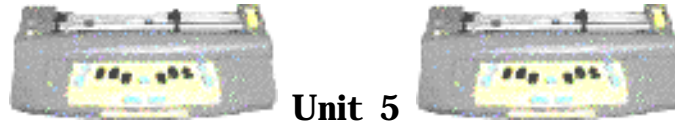
Unit 5

Lesson C: Qwerty Keyboard - Grade 1 Braille

Objectives:
- the student will be introduced to the qwerty keyboard
- the student will braille letters using the qwerty keyboard
- the student will attach the qwerty keyboard to the MB Pro

Brief Review Of Necessary Skills:

Review the location of the qwerty port on the MB Pro (back right-hand-side of the unit).

Equipment and supplies:
- MB Pro
- padded mat
- braille paper
- qwerty keyboard
- bold print stick-on keys
- an old typewriter

Preparations and Settings:

1. Set to 'learn mode'.

2. Attach bold print keys to the keyboard (*'Stick-On Keytop Enlargers' LS & S.*). This may assist your student depending on their visual acuity and will be helpful for other sighted primary students in future activities.

'Stick-On Keytop Enlargers' LS & S

While the letters are still on the sheet, braille a raised dot on the letters 'f' and 'j' to assist with home row alignment. Then stick the letters on the keys.

Challenges and Tips:
Not applicable for this activity.

Step-By-Step Instructions:
1. Explain that there are many more keys on a print keyboard - one for each letter. Let them know that qwerty keys are not in alphabetical order. It is called a qwerty keyboard because these letters are all in a row on the upper right side of the keyboard. Using hand-over-hand type in q-w-e-r-t-y.

The keys were laid out this way because typewriters (they looked a bit like the Perkins Brailler) had little hammer heads that made print. These would jam if the keys weren't in a certain arrangement. Find an old typewriter for tactile exploration.

2. Have the student attach the qwerty keyboard and turn on the MB Pro.

3. Explain that the keyboard is ready for brailling (G1 braille). It will braille and say any letters that are pressed.

4. Have the student braille various letters (spacing after each letter to enable tactile review). Have them explore the qwerty keyboard including: spacebar, enter, esc and end keys. Depending on your student's attention span and interest level, show them the home row finger placement. The focus of this lesson however is primarily an exposure to the qwerty keyboard and how it works with the MB Pro.

Skills Checklist:

yes   not yet

☐   ☐   Able to braille letters using the qwerty keyboard.

☐   ☐   Able to attach the qwerty keyboard to the MB Pro.
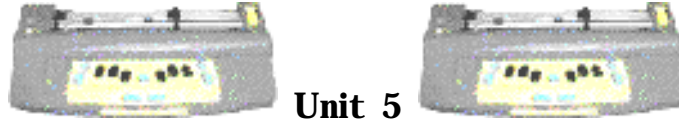
Unit 5
Lesson D: MB Pro Commands Using The Qwerty Keyboard

Objectives:
> • the student will send commands using the qwerty keyboard

Brief Review Of Necessary Skills:
Review how to send commands using the MB Pro.

Equipment and Resources:
> • MB Pro
> • padded mat
> • braille paper
> • qwerty keyboard
> • felt dots

Preparations and Settings:
On the qwerty keyboard attach small felt dots to the 'escape' and 'end' key, to assist in entering commands.

Challenges and Tips:
Students will have difficulty locating specific letter keys on the qwerty keyboard, so use hand-over-hand to assist them.

Although our students will not be using the qwerty keyboard very much in the early years, it is helpful if they are aware of how commands are sent using the qwerty. They can share this knowledge with sighted peers, the classroom teachers, substitute T.A.'s and parents.

Step-By-Step Instructions:
If the student makes an error entering a command they can simply press the escape (esc) key to start again.

1. Let the student know that every qwerty command starts with the *'esc'* key and finishes with the *'end'* key.

2. Have the student switch between 'learn mode' and 'advanced mode'
*(esc)***ADV** *(end)*

3. In 'advanced mode' have them turn synthetic speech on.
*(esc)***SPK** *(space)***S** *(end)*

4. Have them change to recorded speech.
*(esc)***SPK** *(space)***R** *(end)*

There is a strange quirk if you are using an IBM brand keyboard: avoid pressing the 'shift' key, as the MB Pro will need re-setting. This does not seem to be a problem with the cheaper no-name brand keyboards.

Skills Checklist:

yes   not yet

☐   ☐   Able to send commands on the qwerty (with keyboard assistance).
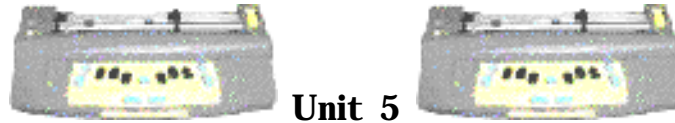
Unit 5
Lesson E: Braille Numbers - Additions

Objectives:
- the student will braille numbers 10, 100, 1000 and 1000000
- the student will set the MB Pro to 'speak digits'
- the student will set the MB Pro to 'speak numbers'

Brief Review Of Necessary Skills:
Review the number sign.

Review the numbers 1 to 10.

Review how to send MB Pro commands.

Equipment and Resources:
- MB Pro
- braille paper
- number cards

Preparations and Settings:
1. Create the following number cards (100, 1000 and 1000000).

2. Set to synthetic speech *(command)* **SPK** *(space)* **S** *(enter).*

Step-By-Step Instructions:
1. Introduce the numbers 100, 1000 and 1000000. Show them the number cards.

2. Explain that the MB Pro can speak numbers in different ways. Numbers can be spoken as words i.e. "one hundred" **or** numbers can be spoken as digits i.e. "one-zero-zero".

3. Have the student open the Speech Menu.
new line + *space* + **S** (together)

4. Show them how we change the way numbers are spoken. Press the letter 'n' for numbers (there are two choices, press 'n' again to hear the other option) -
"numbers spoken as words" or **"numbers spoken as digits"**

5. Have the student braille various numbers using both the 'word' and 'digit' options. See if they can create other numbers, such as 101 or 2000 etc.

Skills Checklist:

yes   not yet

☐   ☐   Able to braille numbers 100, 1000 and 1000000.

☐   ☐   Can set the MB Pro to 'speak digits'.

☐   ☐   Can set the MB Pro to 'speak numbers'.
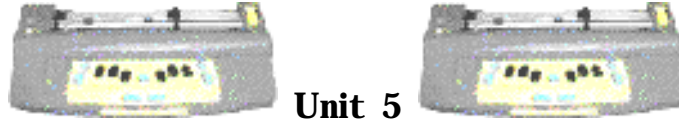
Unit 5
Lesson F: Centering Braille

Objectives:
> • the student will learn how to centre braille

Equipment and supplies:
> • MB Pro
> • padded mat
> • braille paper

Preparations and Settings:
Not necessary for this activity.

Step-By-Step Instructions:
1. Explain that they will learn how to centre braille. Inform them that when centered the brailled line has an equal amount of space on either side - the letters are 'in the middle'.

2. Explain that there are certain times when the braille needs to be centered e.g. a title page.

3. Have the student move to cell 1 to centre correctly.

Centering On/Off:
MB Pro: *(command)* **CE** *(enter)* - "on" or "off"

Have them braille the words 'mom' and 'dad'. Explain that when they press the *new line* key the line will be brailled and automatically centered.

4. Have them turn centering off and braille the same words.
MB Pro: *(command)* **CE** *(enter)* - "on" or "off"

Get them to tactually check the placement of both lines so they can clearly see the effect of centering.

5. Have the student turn the centering feature back on and braille the words 'ball', 'call' and 'hall' *(new line)* key.

Have them turn off centering when they are finished with the lesson.

Skills Checklist:

yes   not yet

☐   ☐   Able to centre braille.

U n i t

6

Lesson A (Whole Word Sentences)

Lesson B (Tabs)

Lesson C (Nemeth Sums)
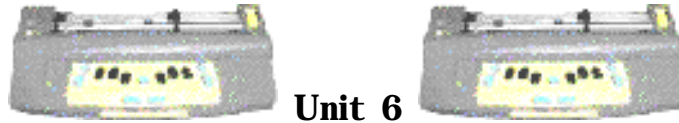
Unit 6
Lesson A: Whole Word Sentences

Objectives:
- • the student will read simple sentences
- • the student will braille capitals and periods
- • the student will tactually identify capitals and periods

Brief Review Of Necessary Skills:
Review how to centre braille (from Unit 5, Lesson F).

Equipment:
- • MB Pro
- • padded mat
- • braille paper
- • muffin pan braille cell
- • swing cell
- • anti slip mat

Preparations and Settings:
1. Create the following braille sentences saving the information as an MB Pro file titled 'ball':

I like you.	I have a ring.	People like you.
I like mom.	I have a bat.	I like people.
I like dad.	I have a ball.	I can sing.
I like my dog.	I like cats.	

Step-By-Step Instructions:
1. Introduce the concept of capitals and periods. Use the muffin pan or swing cell for support if necessary.

2. Have the student emboss the saved file 'ball'. Have them remove the brailled page, place on an anti slip mat and read the sentences.

3. Have the student braille the sentences they have just read. Get them to read one sentence at a time and then transfer it across to the MB Pro.

Skills Checklist:

yes   not yet

☐   ☐   Able to read simple sentences.

☐   ☐   Able to braille capitals and periods.

☐   ☐   Able to tactually identify capitals and periods.
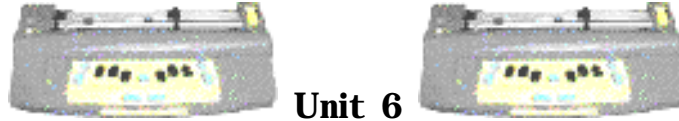
Unit 6
Lesson B: Tabs

Objectives:
- the student will learn the concept of left and right
- the student will learn the location of the right and left tab keys
- the student will learn how to tab (right and left)

Brief Review Of Necessary Skills:
Review the MB Pro keyboard layout. Have the student name the specific keys. Explain that there are two other keys that have not been discussed yet; they will be covered in this lesson.

Equipment:
- MB Pro
- padded mat
- braille paper

Preparations and Settings:
Not for this activity.

Challenges and Tips:
No apparent challenges for this activity.

Step-By-Step Instructions:
1. Ask the student to hold up their right hand and then their left hand, help students out if they have trouble identifying them. Ask them to show you the right side of the paper and then the left side of the paper.

2. Show the student the right and left tab keys on the MB Pro keyboard. Explain what a tab does (it moves a set number of spaces forwards and backwards).

3. Demonstrate both right and left tabs. Explain that this is a quick way to jump along the line (compared to pressing the space bar repeatedly).

4. Have the student explore the tab keys.

Skills Checklist:

yes   not yet

☐   ☐   Able to point to the left side of the page.

☐   ☐   Able to point to the right side of the page.

☐   ☐   Able to locate the left tab key.

☐   ☐   Able to locate the right tab key.

☐   ☐   Able to explain what a tab key does.
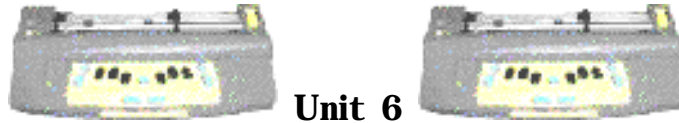
Unit 6
Lesson C: Nemeth Sums

Objectives:
- the student will learn that speech output should be deactivated during Nemeth activities
- the student will learn Nemeth numbers 1 to 10
- the student will learn the Nemeth plus sign
- the student will braille sums horizontally
- the student will braille sums vertically

Brief Review Of Necessary Skills:
Review literary numbers 1 to 10.
Review the 'ing' sign.

Equipment and Materials:
- MB Pro
- padded mat
- braille paper
- pre-brailled math samples
- muffin pan braille cell
- swing cell

Preparations and Settings:
1. Braille the following three sample horizontal math problems:

2+3=   7+1=   3+3=

2. Braille the following four vertical math problems:

$$\begin{array}{cccc} 2 & 7 & 3 & 4 \\ +3 & +1 & +3 & +2 \\ \hline \end{array}$$

Challenges and Tips:
This lesson covers a great deal of information, especially if this is the student's first exposure to the Nemeth Code. If it seems overwhelming to the student teach horizontal and vertical sums in separate lessons.

It is assumed that students are involved in an academic math program and are exposed to Nemeth math on a regular basis. The primary focus of this activity is not the introduction of basic Nemeth skills but to inform the student that speech needs to be deactivated on the MB Pro during Nemeth activities.

Step-By-Step Instructions:
1. Explain that speech needs to be turned off for braille math.
Have them set speech to "echo no".

2. Using a muffin pan show the student the letter 'c'. Ask them what happens when we braille a number sign in front of the 'c'. Hopefully they will reply a "3" or "number 3". Have them move the dots lower in the braille cell (dots 2, 5). Explain that they have just created a Nemeth 3 or a three used in math. Get them to braille a Nemeth 3 number.

3. Teach the other Nemeth numbers, using the muffin pan and swing cell if necessary.

4. Explain that they will be learning how to set up a Nemeth sum both horizontally (brailled across the page) and vertically (the numbers are brailled underneath each other).

Horizontal Sums - braille the sum 3+2=
 • explain that number signs are used in horizontal sums
 • inform them that the 'ing' contraction is used as the plus
   sign in Nemeth
 • discuss appropriate spacing
 • explain two how to braille the equals sign

Have the student braille three more simple addition sums:

2+2=   1+2=   3+1=

Have the student read the three pre-brailled horizontal sums (See 'Preparations and Settings').

5. Explain how vertical sums are brailled.

Vertical Sums - braille the sum 3+2=
- explain that number signs are <u>not</u> used in vertical sums
- inform them that the numbers have to be lined up directly underneath each other
- discuss the placement of the plus sign
- explain how to braille the separation line

Have the student braille four more simple sums:

1	2	3	7
+4	+1	+3	+1
-----	-----	-----	-----

Have the student read the four pre-brailled vertical sums (See 'Preparations and Settings').

6. When they have completed this activity have them reset the speech to "echo both".

Skills Checklist:

yes   not yet

☐   ☐   • Able to deactivate speech output.

☐   ☐   • Able to resume speech output.

☐   ☐   • Able to braille Nemeth numbers 1 to 10.

☐   ☐   • Able to braille the Nemeth plus sign.

☐   ☐   • Able to braille horizontal sums.

☐   ☐   • Able to braille vertical sums.

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7

Lesson A (Printing - Back Translation)

Lesson B (Emergent Readers)

Unit 7
Lesson A: Printing - Back Translation

Objectives:
- the student will attach the ink printer to the MB Pro
- the student will send a command so that the MB Pro will recognize the ink printer
- the student will set triple line spacing
- the student will create a printed copy of what they are brailling

Brief Review Of Necessary Skills:
Review the location of the MB Pro printer ports (serial or parallel).
Provide a basic orientation to the printer.

Equipment:
- MB Pro
- padded mat
- braille paper
- print printer
- white printer paper

Preparations and Settings:
1. Set the MB Pro to Advanced Mode.

Challenges and Tips:
The printer power cord needs to be attached to live electrical outlets by an adult. This is an important skill for our students to learn but not at this early age when they are still developing their motor skills and have limited safety awareness.

Step-By-Step Instructions:
There are times when the Teaching Assistant or Vision Teacher is unavailable to set up things like the ink printer. If students can set up the printer on their own it provides them with an increased level of independence.

1. Have the student attach the ink printer to the MB Pro.

The printer power cord needs to be attached by an adult.

2. Load paper into both the MB Pro and the ink printer. Set the printer to on-line.

3. In order for the MB Pro to communicate with the printer have the student enter the following command:

*(command)***BCK** *(enter)*
back translation - braille to print

4. Show the student how to set the MB Pro to triple spacing, the triple spacing will occur on the ink printout as well.

*(command)***LS** *(space)***3** *(enter)*

This is helpful for young children who are not creating large volumes of braille and classroom teacher who want to see what they have brailled in a timely manner. Many of the new 'line printers' do not provide instant feedback of what is printed because the paper is still inside the printer (unlike the old ImageWriter printers etc.). Triple spacing will allow the paper to pass through the printer more quickly providing faster print feedback.

5. Reset the MB Pro to braille every other line.
*(command)***LS** *(space)***2** *(enter)*

Skills Checklist:

yes   not yet

☐   ☐   Able to attach the ink printer to the MB Pro.

☐   ☐   Able to set triple spacing.

☐   ☐   Able to create a printout of a brailled page.

Unit 7
Lesson B: Emergent Readers

Objectives:
- the student will be exposed to especially brailled emergent readers with tactile pictures to assist with their decoding
- the student will braille and read their own emergent readers

Equipment:
- MB Pro
- padded mat
- braille paper
- emergent readers (see Preparations and Settings)
- durable pre-cut card (for creating readers)
- rubber cement glue
- hot glue gun and glue sticks
- supplies for creating tactile pictures

Preparations and Settings:
Talk to the classroom teacher to find out which emergent readers are being read in the classroom. Find out how many emergent readers are typically available to students in their classroom. We should aim to have the same number of brailled emergent readers for our students.

1. Create a large number of brailled emergent readers, with tactile pictures for 'context clues'.

2. Using the durable card (it stands up well to abuse in the primary classrooms), braille the following two mini readers. Each page should have one line of braille and a tactile picture.
Use regular braille paper, cut the sentences to size and adhere with rubber cement.

We used to use Braille Label but for younger children the plastic feel of the braille makes it harder to read. I believe that crisp, clean braille dots created on standard braille paper are the best option for early braille users.

Pattern Reader 1	*Pattern Reader 2*
I like cats.	I have arms.
You like cats.	I have legs.
I like dogs.	I have eyes.
You like dogs.	I have lips.
I like mice.	I have hair,
You like mice,	And I am six.
I like birds.	
You like birds,	
And we all like pets.	

3. Coil the books.

Challenges and Tips:
Time: the production of these 'in house' especially adapted emergent readers can be very time consuming. It can take many months to produce 20 or 30 books. There are very few commercially produced emergent readers available for children with visual impairments. Our students require 'context clues' in the form of tactile images, much like a sighted child that glances at pictures to assist them with decoding.

Step-By-Step Instructions:
1. Show the student a variety of emergent readers. Explain that tactile pictures are there to help them with their braille reading.

2. Explain that they will be creating their own little readers. Have them braille and read *Pattern Reader 1.*

Pattern Reader 1

I like cats.	**I like** *(milk).*
You like cats.	**You like** *(juice).*
I like dogs.	**I like** *(apples).*
You like dogs.	**You like** *(bananas).*
I like mice.	**I like** *(rice).*
You like mice.	**You like** *(buns).*
I like birds.	**I like** *(beets).*
You like birds,	**You like** *(corn),*
And we all like pets.	**And we all like** *(food).*

3. Have the student complete endings to 'I like' & 'You like'. To get the creative juices flowing read the other 'I like, You like' sample to the student. Explain that they will first need a category such as: toys, school, zoo etc.
Steer the student away from words containing complicated contractions.

4. Have the student braille the sentences using the MB Pro (leaving extra space around the sentences so they can be cut).

5. The student hands the sentences over in the correct order while the Vision Teacher/Teaching Assistant glues the braille onto the durable card.
We use rubber cement because any residue can be rubbed away leaving a clean finish!

6. Creating the tactile images will be a team effort. Have the student describe what type of tactile pictures they want for each page. An adult will use the hot glue gun to firmly attach the finished picture.

7. Other mini readers can be created using the same steps. Show them the *Pattern Reader 2* sample.

Pattern Reader 2
I have arms.
I have legs.
I have eyes.
I have lips.
I have hair,
And I am six.

Have the student create his or her own 'I have' theme such as:
- items in their bedrooms
- different types of clothes
- things found in their home

Skills Checklist:

yes   not yet

☐   ☐   Able to read some emergent readers.

☐   ☐   Able to braille and read their

U n i t

8

Lesson A (Word Box Additions)

Lesson B (Graphics Mode/Braille Boxes)
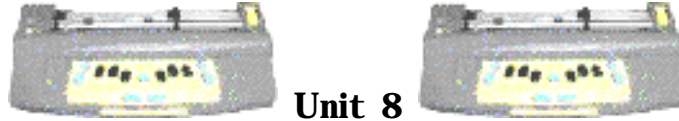
Unit 8
Lesson A: Word Box Additions

Objectives:
- the student will learn how to read and braille the following words - red, green, blue, black, pink, here, yellow, brown, she, one, two, three, four, five, six, seven, eight, nine, ten, and, the, this *and* well

Equipment:
- MB Pro
- padded mat
- braille paper
- braille/print word box cards

Preparations and Settings:

1. Braille these additional Word Box cards: red, green, blue, black, pink, yellow, brown, here, she, one, two, three, four, five, six, seven, eight, nine, ten, and, the, this *and* well

2. Make sure that the MB Pro is still set to 'double' spacing.
*(command)***LS** *(space)***2** *(enter)*

3. Set the following:

Word Wrap off.
*(command)***WW** *(enter)* **"on"** or **"off"**

Advanced Mode on.
*(command)***ADV** *(enter)*

Synthetic Speech on.
*(command)***SPK** *(space)***S** *(enter)*

Go to the speech menu and select "echo both"

Challenges and Tips:

Many of these new Word Box words contain contractions. It may take many lessons before the student can successfully read and braille the words. Revisit the Skills Checklist to add check marks when they become 'Hall-Of-Fame' words.

Step-By-Step Instructions:
1. Teach the student the following <u>braille</u> words using Word Box: red, green, blue, black, pink, yellow, brown, here, she, one, two, three, four, five, six, seven, eight, nine, ten, and, the, this *and* well.

2. Have the student <u>read</u> the Word Box words. Applying check marks and lines on the cards when appropriate.

Skills Checklist:

yes   not yet

☐   ☐   Able to read and braille the following words: red,
                green, blue, black, pink, yellow, brown, here, she, one,
                two, three, four, five, six, seven, eight, nine, ten,
                and, the, this *and* well.
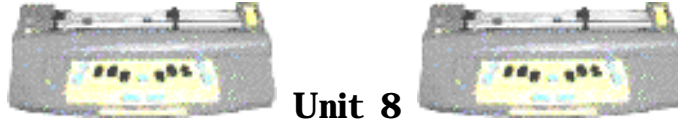
Unit 8
Lesson B: Graphics Mode/Braille Boxes

Objectives:
- the student will explore the graphics mode
- the student will learn how to create braille boxes

Equipment:
- MB Pro
- braille paper

Preparations and Settings:

1. With the graphic mode off, create a page containing three braille boxes (various sizes).

- letter 'p' for the top left
- letter 'c' along the top
- contraction 'th' for the top right
- letter 'l' down the left side
- dots 4,5,6 down the right side
- letter 'v' for the lower left
- contraction 'com' along the bottom
- contraction 'ble' for the lower right

2. With the graphic mode on, create another page containing three braille boxes (various sizes).

*(command)***GF** *(enter)* "on" and "off"

Challenges and Tips:

Be sure that your student turns off the graphics mode when they finish drawing. The braille is almost unreadable when created in the graphics mode.

Step-By-Step Instructions:

1. Explain that the MB Pro has a special graphics mode for drawing. The small space between the braille cells is removed creating smooth flowing lines.

2. Show the student the two pages of braille boxes (see Preparations and Settings), first without the graphics mode and then with the graphics mode active. Have them view the difference.

3. Explain how to activate the graphics mode.
*(command)***GF** *(enter)* "on" and "off"

4. Have the student create a variety of braille boxes.
- letter 'p' for the top left
- letter 'c' along the top
- contraction 'th' for the top right
- letter 'l' down the left side
- dots 4,5,6 down the right side
- letter 'v' for the lower left
- contraction 'com' along the bottom
- contraction 'ble' for the lower right

5. When you have completed the lesson turn off the graphics mode.
*(command)***GF** *(enter)* "on" and "off"

Skills Checklist:

yes   not yet

☐   ☐   Able to create braille boxes.

☐   ☐   Able to turn graphics mode 'on' and 'off'.

U n i t

9

Lesson A (Qwerty - Grade 2 Braille)

Lesson B (Word Box Additions)

Lesson C ('Braille-Read-Spell' Contraction Checklist)

Unit 9
Lesson A: Qwerty - Grade 2 Braille

Objectives:
- the student will set up the qwerty keyboard for G2 braille
- the student will read braille produced by a sighted peer

Brief Review Of Necessary Skills:
Review the location of the qwerty port on the MB Pro and how to attach the keyboard.
Remind the student that when the qwerty is attached (in either Learn Mode or Advanced Mode) the MB Pro produces G1 braille.

Equipment:
- MB Pro
- padded mat
- braille paper
- qwerty keyboard

Preparations and Settings:
None for this activity.

Step-By-Step Instructions:
1. Have the student set the MB Pro to Advanced Mode.

2. Explain that the following command needs to be entered to obtain G2 braille from the qwerty keyboard. This command will not work in the 'Learn Mode'.
*(command)***FE** *(enter)* "on" or "off"

3. Have the student press a variety of qwerty keys. They will notice that the keys say their names "c-a-t" but there is no braille embossing. Explain that the MB Pro has a buffer (an electronic storage area or holding pen) and when the 'enter' key is pressed twice the braille is translated and the buffer is emptied. The buffer will automatically empty after 80 characters have been typed.

4. Using the qwerty keyboard have a sighted peer type various simple sentences. *Create these sentences based on which contractions your student can successfully read.*

5. As the sentences are produced, have our student read the braille back to the sighted peer.
The keyboard sound can be deactivated as in Unit 5, Lesson B

> • set speech to "echo no"
>   *new line + space +* **S** **(together)**
>   'e' for echo

6. Let the student know that the qwerty keyboard producing G2 braille is a wonderful way for friends and teachers to leave braille messages. It is also a great for promoting print and braille users to work cooperatively on assignments.

Skills Checklist:

yes   not yet

☐   ☐   Able to set up the qwerty keyboard for G2 braille.

Unit 9
Lesson B: Word Box Additions

Objectives:
- the student will learn how to read and braille the following
    words - blind, bus, at, am, how, has, little, Monday,
    or, Sunday, Saturday, see, said, Thursday, today,
    tonight, yes, your, are, aunt, always, after, again, boy, bell,
    big, brother, book, could, child, day, house, grandpa,
    grandma, mother, father, love, friend, name, our, of,
    orange, over, sister, some, still, soon, stop, start, to,
    Tuesday, there, they, them, then, uncle, under, work,
    Wednesday, would, with and young.

Why these specific words? *This was an actual list of Word Box words used by one of my students. These words were a combination of words being taught in the classroom, Dolch & Fry high frequency words and words containing specific braille contractions. Please substitute a relevant list of words that pertain to your student.*

Equipment:
- MB Pro
- padded mat
- braille paper
- braille/print word box cards

Preparations and Settings:
1. Braille these additional Word Box cards: blind, bus, at, am, how, has, little, Monday, or, Sunday, Saturday, see, said, Thursday, today, tonight, yes, your, are aunt, always, after, again, boy, bell, big, brother, book, could, child, day, house, grandpa, grandma, mother, father, love, friend, name, our, of, orange, over, sister, some, still, soon, stop, start, to, Tuesday, there, they, them, then, uncle, under, work, Wednesday, would, with and young.

2. Make sure that the MB Pro is still set to 'double' spacing.
(command) LS (space) 2 (enter)

3. Set the following:

Word Wrap off.
(command)***WW** *(enter)* **"on"** or **"off"**

Advanced Mode on.
(command)***ADV** *(enter)*

Synthetic Speech on.
(command)***SPK** *(space)***S** *(enter)*

Go to the speech menu and select "echo both"

Step-By-Step Instructions:
1. Teach the student the following <u>braille</u> words using Word Box:
blind, bus, at, am, how, has, little, Monday, or, Sunday, Saturday, see, said, Thursday, today, tonight, yes, your, are aunt, always, after, again, boy, bell, big, brother, book, could, child, day, house, grandpa, grandma, mother, father, love, friend, name, our, of, orange, over, sister, some, still, soon, stop, start, to, Tuesday, there, they, them, then, uncle, under, work, Wednesday, would, with and young.

2. Have the student <u>read</u> the Word Box words. Apply check marks and lines on the cards when appropriate.

Skills Checklist:

yes   not yet

☐   ☐   Able to read and braille the following words - blind,bus, at, am, how, has, little, Monday, or, Sunday, Saturday, see, said, Thursday, today, tonight, yes, your, are aunt, always, after, again, boy, bell, big, brother, book, could, child, day, house, grandpa, grandma, mother, father, love, friend, name, our, of, orange, over, sister, some, still, soon, stop, start, to, Tuesday, there, they, them, then, uncle, under, work, Wednesday, would, with and young.

Unit 9
Lesson C: 'Braille- Read- Spell' Contraction Checklist

Objectives:
- the student will learn to spell some contracted words
- the student will learn about the Contraction Checklist

Brief Review Of Necessary Skills:
Not for this activity.

Equipment:
- MB Pro
- padded mat
- braille paper
- Word Box Hall-Of-Fame cards
- 'Braille-Read-Spell' Contraction Checklist (see Preparations and Settings)
- washable felts (red, green and blue)

Preparations and Settings:
1. Create a 'Braille-Read-Spell' Contraction Checklist.
Make a list of all 180 braille contractions, cutting and pasting from the 'braille contraction cheat sheets'. Following the contractions make three columns of check boxes titled: 'Braille', 'Read' and 'Spell'. Laminate the completed sheet.

'Braille-Read-Spell' Contraction Checklist

Challenges and Tips:
The checklist is primarily intended for Vision Teachers and Teaching Assistants and therefore is a print document. Progress can be verbalized to the student, or, if time allows, create a tactile version of the Contraction Checklist so the student can more closely monitor their progress.

Step-By-Step Instructions:
1. Explain to the student that it is important to know how contracted words are spelled. Reading and brailling the words is only 2/3 of the puzzle. Mention that when they start using a computer keyboard, the letters of printed words are keyed separately i.e. the letter 'k' is the whole word contraction for knowledge in G2 braille but on a qwerty keyboard they will have to know how the word is spelled 'k-n-o-w-l-e-d-g-e'.

2. Explain that you have created a 'Braille-Read-Spell' Contraction Checklist and as they learn various contractions the checklist will be used to plot their progress. Hall-Of-Fame words will be cross-referenced against the chart.

3. Show the student the laminated checklist and the washable felts. Explain that differently coloured checkmarks will appear on the chart when they have mastered the brailling, reading and spelling of the various contractions.
> • red felt - brailling
> • green felt - reading
> • blue felt - spelling

Let the student know that the 'Contraction Checklist' will be updated once a month.

4. Start the Word Box activity as usual.

5. Add any Hall-Of-Fame words to the Contraction Checklist. At this time ask the student if they are able to spell the word. Many words such as 'not', 'it', 'so' etc. can easily be sounded out; other words that are more complicated and they are unable to spell can be added to their regular class spelling list.

Skills Checklist:

yes   not yet

☐   ☐   Able to spell some contracted words.

☐   ☐   Able to describe the purpose of the 'Braille-Read-Spell' Contraction
               Checklist.

U n i t

1 0

Lesson A (Auto Feed)

Lesson B (Community Awareness Booklets)

Lesson C (S.N.E.D. Box - Words)

Lesson D (MB Pro Directory)

Lesson E (Deleting A File)

Lesson F (Multi-Strike)

Unit 10
Lesson A: Auto Feed

Objectives:
- the student will learn how to use the automatic feed
  feature

Equipment:
- MB Pro
- padded mat
- braille paper

Preparations and Settings:
Not for this activity.

Challenges and Tips:
The automatic feed feature can be a rather demanding fine motor challenge. If the student is experiencing difficulty, return to the activity in a few months.

Step-By-Step Instructions:
1. Explain that the automatic feed feature can only be used after a page eject *new line +enter.*

2. Inform the student that the paper release key needs to remain closed after a page eject, otherwise the auto feed feature will <u>not</u> work.

3. Have the student align the paper under the embossing head and snug against the grip rollers.

4. Press *right function +enter* to achieve the automatic feed.
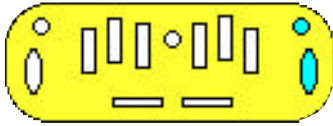
It is important to start feeding the paper into the MB Pro as soon as the rollers start moving, otherwise the braille embossing head will not correctly line up at the top of the page.

Skills Checklist:

yes   not yet

☐   ☐   Able to use the automatic feed feature.

Unit 10
Lesson B: Community Awareness Booklets

Objectives:
- the student will be involved in creating tactile community awareness booklets
- the student will learn to respect braille/tactile books
- the student will understand the difference between a fast food restaurant and one with table service
- the student will learn how to take simple dictation (with spelling and contraction assistance)

Equipment:
- MB Pro
- padded mat
- braille paper
- hot glue gun
- durable cardboard (for tactile books)
- condiments: ketchup, salt, pepper, creamers, napkins, wrapped toothpicks, wrapped mints, restaurant bills etc.
- real coins
- craft foam

Preparations and Settings:
1. Cut the durable card to size (approximately 30cm x 20cm) and pre-punch each sheet for cerlox coiling (cut and prepare approximately 14 pages).

2. Take your student out for lunch twice over two days. First, have them eat at a restaurant with table service; next time, have meal at a fast food restaurant. After each meal have the student discuss all of the steps involved in ordering the meal such as:
- how was the meal ordered?
- how did the meal get to the table?
- where were you when you paid for the meal?

Discuss any missing steps or details with the student.

3. Write a print version of the text that will be used for 'Community Awareness' books. This will be dictated to the student during the lesson. Try to avoid words that contain complex braille contractions.
See 'Step-By-Step Instructions' for more details.

Challenges and Tips:
Try to keep tactile books from getting too bulky. Spread the tactile pictures around the page so that when the book is coiled it is fairly even.

Step-By-Step Instructions:
1. Explain that the student will be creating 'Community Awareness' books using the MB Pro. These books will compare a table service restaurant to a fast food restaurant (one titled 'Fast Food' and the other titled 'Table Service'.

2. Review the procedures for eating at fast food restaurants:
- walk up to the counter and order the meal
- pay for the meal
- meal arrives quickly (fast food)
- pickup condiments
- carry the food (on a tray) to an available table
- eat the meal
- take the tray to a garbage bin
- remove garbage and stack the tray

3. Review the procedures for eating at restaurants with table service:
- find a table or wait to be seated
- 'look' at the menu
- order the meal
- wait for the meal
- eat the meal
- ask for the bill
- pay for the meal at the table or take the payment to the cashier

4. Explain that each page of the book will contain one step in the 'restaurant routine'.

5. The student will take braille dictation from the Vision Teacher (read from prepared print text - see ' Preparations and Settings'). Provide spelling and contraction support when necessary.

6. Discuss with your student which tactile picture should be attached. Use a hot glue gun to firmly attach the images.

Suggestions:
     <u>fast food</u>:

    • **Condiment Area:** glue down various condiments such as ketchup, salt, pepper, creamers, napkins etc.

    • **Paying:** a child's hand cut from craft foam holding change.

- **Food & Drink:** cut off the front 1/3 of a pop cup and lid (hot glue cup, lid and straw to the page).

- **Garbage Bin:** The student brought back some food wrappers and squashed them to make the garbage. The garbage can flap was made with black card and a paper fastener.

Suggestions:
Table Service:

• **Waitress:** Create a face using pantyhose and cotton balls, attach craft eyes, mini pompom nose and a washer for the mouth; brailled speech can come from her mouth saying "Hello"

• **Table Items:** the salt & pepper shakers can be made from clear film containers (cut off front 1/3, glue salt and pepper to the tops), create a low relief napkin holder, a bowl of creamers and sugar packages.

The bill.

> • **Bill:** glue a bill, mints (wrapped) and toothpicks on a piece
> of dark card

These ideas are just to get you started, I am sure that you will create your own unique books. I wanted to share this activity as our students had so much fun sharing their books with peers and family members.

Other similar 'community awareness books' can be created. It is helpful if they directly relate to their O&M activities.

Skills Checklist:

yes   not yet

☐   ☐   Has created two tactile community awareness booklets.

☐   ☐   Can describe the difference between fast food restaurants and table

            service restaurants.

☐   ☐   Able to take simple dictation (with support).

Unit 10
Lesson C: S.N.E.D. Box – Words

Objectives:
- the student will braille the name of the items found in the S.N.E.D. Box.

Brief Review Of Necessary Skills:
If the S.N.E.D. Box (S.N.E.D. stands for **S**omething **N**ew **E**very **D**ay) is not yet part of the student's daily routine refer back to Unit 2, Lesson G to review the concept of the S.N.E.D. Box.

Equipment:
- MB Pro
- padded mat
- braille paper
- S.N.E.D. Box
- S.N.E.D. Box items (see 'Preparations and Settings')

Preparations and Settings:
1. Find 7 S.N.E.D. items that will be interesting to your student. Try to avoid long complicated words that contain difficult contractions.

Step-By-Step Instructions:
1. Place 7 S.N.E.D. items in the box.
2. Have the student identify the items, assisting them if necessary. Discuss the items.
3. Have the student braille the name of the item, providing support if necessary.

Skills Checklist:

yes   not yet

☐   ☐   Able to braille the names of various items found in the S.N.E.D. Box.

Unit 10
Lesson D: MB Pro Directory

Objectives:
      • the student will utilize the MB Pro file directory

Brief Review Of Necessary Skills:
Review how to create a file.
Starting a new file:
*(command)***BEGIN***(space)***file name'***(enter)*

I have a cat.

Ending a file:
*(command)***END***(enter)*

Remind them they should only use Grade 1 braille when brailling commands. File names can be up to 16 characters including numbers but no spaces.

Equipment:
      • MB Pro
      • braille paper

Preparations and Settings:
1. Delete a number of unnecessary files so that the student is not overwhelmed by a lengthy brailled directory. Be sure not to delete any important files such as the tactile awards.

 *(command)***DEL***(space)***file name'***(enter)*
You must be outside the file to delete.

Step-By-Step Instructions:
1. Explain that the MB Pro has a list of file names that are stored in its memory. It is called a directory. We have a directory in case we forget the name of a file or we want to view the list of saved files.

2. Have the student braille out a list of current files.

*(command)***DIR***(enter)*
The directory also provides information on the size of each file.

3. Have them read through the list of files. Explain that any of these files are ready to be embossed.

4. Have the student create a file titled 'ggg' (tactually this will be easy for them to locate on a brailled directory list). Get them to braille the sentence "I have a cat."

5. Get them to braille out another directory list and locate the file 'ggg'.

Skills Checklist:

yes   not yet

☐   ☐   Able to braille a copy of the MB Pro file directory.

Unit 10
Lesson E: Deleting A File

Objectives:
> • the student will learn how to delete MB Pro files

Brief Review Of Necessary Skills:
Review how to braille out a directory of MB Pro files.

Equipment:
> • MB Pro
> • padded mat
> • braille paper

Preparations and Settings:
1. Create three files titled 'www', 'lll' and 'ccc'. Braille the word 'hello' in each file (just to give the files some content - these will be for the student to erase).

Challenges and Tips:
Be careful students don't accidentally delete important files. Younger students should be encouraged to check with the Vision Teacher before deleting any files.

Step-By-Step Instructions:
1. Have the student create a directory of MB Pro files.
*(command)***DIR***(enter)*

2. Explain to the student that there are three files that need to be deleted 'www', 'lll' and 'ccc'

3. To delete a file they will have to enter the following command:
*(command)***DEL***(space)***file name'***(enter)*

4. When they have deleted all three files have them create a file and then erase it. Have them title the file 'hello', they can also braille the word 'hello' in the file.

Skills Checklist:

yes   not yet

☐   ☐   Able to delete MB Pro files.

Unit 10
Lesson F: Multi-Strike

Objectives:
- the student will learn how to use the multi-strike
  feature

Equipment:
- MB Pro
- padded mat
- braille label
- embossing foil
- clear overhead plastic
- heavy thermoform plastic

Preparations and Settings:
Not for this activity.

Challenges and Tips:
Explain that the multi-strike feature is only to be used for thick paper like braille label, foil or heavy thermoform plastics. When the hammer pressure is set to maximum (multi-strike 4) the embossing head will be exposed to unnecessary wear-and-tear if you are using regular photocopy paper.

Step-By-Step Instructions:
1. Explain that multi-strike is used when brailling on heavy paper such as Braille Label or heavy plastic. Also explain that there are four settings from 1 (default) up to 4 that relate to the number of hammer strikes hitting each dot.

2. Using regular embossing pressure have the student braille their name on braille label. Have them tactually explore what they have created.

3. Using the multi-strike feature at four times the regular hammer pressure, have them braille their name a second time and tactually observe the crisper braille dots.
*(command)**MS** (space)**4** (enter)* - highest setting

4. Have the student braille on a variety of thicker braille paper and plastics such as heavy thermoform plastic, foil and clear overhead plastic. Have the student adjust the hammer pressure to suit the material being embossed, between 1 (default) to 4.

5. After the lesson have the student reset to the single strike default.
MB Pro: *(command)**MS** (space)**1** (enter)* - back to default

Skills Checklist:

yes   not yet

☐   ☐   Able to use the multi-strike feature.

Resource List

The following is a list of helpful resources and tools that will assist in teaching the MB Pro to new users:

Resources created by the Vision Teacher:
• letter box cards (braille alphabet flash cards - interlined)
   (see Unit 1, Lesson E for details)

• S.N.E.D. (Something New Every Day) box - made by Vision Teacher -
   (see Unit 2, Lesson G for details)

• Mail Boxes (postal game)
   (see Unit 3, Lesson F for details)

• word box cards (high frequency words - interlined)
   (see Unit 4, Lesson D for details)

• tactile awards (these are saved as braille files on the MB Pro)
   (see Unit 5, Lesson A for details)

• a set of early emergent readers (brailled with tactile pictures) - such as the Sunshine books, by Ginn Publishing.
   (see Unit 7, Lesson B for details)

• Contraction Checklist (a laminated sheet to record the student's knowledge of all 180 braille contractions (three columns -reading/brailling/spelling used with washable felts **(blue** *for reading,* **red** *for brailling and* **green** *for spelling)*
   (see Unit 9, Lesson C for details)

Suppliers: Wall Mart, Canadian Tire, Dollar Stores etc.
- muffin pan (6) (black for contrast)
- 6 neon orange foam balls (to represent the braille cells in the muffin pan)
- padded mat for MB Pro, to reduce the noise level (a tight
- weave carpet with bound edges) try your local carpet shop
- corkboard (desk top size)

Supplier: LS & S Group Inc. (www.lssgroup.com)
- bold print stickers for the qwerty keyboard (only apply the 3 letter rows, space, shift, enter, esc and backspace) - this will assist primary students using the qwerty.
- *'Stick-On Keytop Enlargers' Item #: 223-312-0149*
- talking stopwatch (the Voice Craft stopwatch counts down in 10 second increments - excellent product!)

Supplier: Supplies found in most schools.
- photocopy paper (8 1/2 x 11)
- pushpins

Suppliers: P.R.C.V.I. (www.prcvi.org) **or** Exceptional Teaching Aides (www.exceptionalteaching.com)
- 'The Mangold Developmental Program of Tactile Perception and Braille Letter Recognition'

Supplier: A.P.H. (www.aph.org)
- braille swing cell
- braille push cells
- Patterns: The Primary Braille Reading Program

Supplier: American Thermoform Corporation (www.atcbrleqp.com)
- braille label

Supplier: Howe Press (617-924-3490)
- non-slip rubber mats (to place under MB Pro while brailling and also used for braille reading)
  These mats can also be placed under braille paper. This avoids slippage on smooth surfaces while the student is reading braille.

Supplier: C.N.I.B. (Vancouver Access Shop 1-800-888-9090)
- braille paper (11 x 11)

Supplier: Radio Shack, Wall Mart or your local electronics shop.
- 2 headphones (one for the student and the other for the Vision Teacher/Teaching Assistant).
- A 'Y' jack (to connect the two headphones to the port).

Supplier: Local Toy Shop or Dollar Store
- plastic reverberating microphone (this non electronic toy   microphone echoes when you speak into it). When it is placed next to the MB Pro speaker it sounds cool! It can be used for the scary sounds activity (Unit 1, Lesson F) and to motivate students during some word box activities).

Supplier: Independent Living Aids, Inc. (www.independentliving.com)
- tactile sticky dots (used for braille graph) Unit 3, Lesson C

Other Helpful Learning Resources:

Supplier: Modern World Data Ltd (www.modern-world-data.com)
- MB Pro dust cover

Supplier: Los Olvidados Ltd. (www.tack-tiles.com)
- Tack - Tiles (braille Lego)