

Pre-Kindergarten Module 2

Numerals 1-3

Teacher Script

Introduction

- All bracketed text should not be read aloud and is for reference only.
- The questions are not numbered in the student document. However, the questions have been numbered in this document to aid teachers and parents.
- Throughout the script, it is assumed that the student is correct. The teacher may need to go off script if the student does not answer a question correctly.

Section 1: Reading Numeral 1

Section 1 Materials

- Two swing cells (or two muffin tins and balls if you don't have access to swing cells)
- Student Braille Document: GPK-M2-Student-Materials.brf

Section 1 Teacher Note

If you are using a refreshable braille display, ensure that the child knows how to move to the next line of braille. Offer assistance as needed.

Section 1 Teacher Script

All aboard the Nemeth train! Do you remember what sound a train makes? That's right! Choo choo!

Let's explore the numeral 1 in Nemeth!

[Make sure the student is viewing the numeral 1 at the top of page 1.]

1

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Numeral 1 begins with the numeric indicator in the first braille cell and ends with a dot 2 in the second braille cell! All Nemeth numerals are placed in the bottom part of the braille cell.

Now let's use the swing cell. It is your turn to build the numeral 1 with a swing cell. Do you remember the dots that make a numeric indicator? That's right! Dots 3-4-5-6 make a numeric indicator! Chug-chug-chug-chug!

Begin by using the pegs to make the numeric indicator in the first swing cell. Then move to the second swing cell and place a peg in dot 2. Congratulations! You made the numeral 1.

Practice 1.1

Now it is your turn to find the numeral 1 in each line of braille. Remember to keep your hands together and curve your fingers! Move your fingers lightly across the line of braille from left to right and make a sound like a train when you find the numeral 1!

[Five lines of dots 2-5 on page 1 with a numeral 1 inserted in each line.]

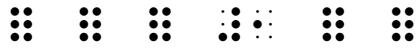
The figure consists of 11 diagrams arranged horizontally, each representing a snapshot of a 2D lattice of particles. The lattice is 4 particles wide and 3 particles high. The diagrams show the movement of particles from left to right, with some particles being added or removed at each step. The sequence starts with a full lattice and ends with a single particle in the top row.

Clickety clack along the rails! You found the numeral 1.

Practice 1.2

Now move your fingers across each line of braille and find the numeral 1 hidden in a line of railroad cars that are really full braille cells!

[Five lines of full braille cells on page 2 with a numeral 1 inserted in each line.]



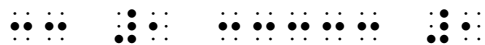
Fun Fact 1

Some trains can go more than 300 miles per hour! That is faster than a race car and a police car!

Practice 1.3

Now there will be more than one numeral 1 on each line of braille. Move your fingers across the line of braille and make a sound like a train when you find each numeral 1!

[Five lines of dots 2-5 on page 3 with a numeral 1 inserted twice in each line.]



Way to go!

Practice 1.4

Let's keep going! Now move your fingers across the line of braille and find all of the numeral 1s hidden in a line of railroad cars. Make a sound like a train each time you find the numeral 1!

[Five lines of full braille cells on page 4 with multiple numeral 1s inserted in each line.]

The figure displays a 5x6 grid of 30 small dot patterns. Each pattern is a 3x3 arrangement of dots, where each dot is either present (black) or absent (white). The patterns in the grid are combinations of the six basic patterns shown in the first row. The patterns are arranged in rows and columns, showing various combinations of the basic patterns. For example, the first row of the grid contains the six basic patterns, while the subsequent rows show combinations of these patterns.

Fun Fact 2

Trains can be powered by steam, diesel fuel, and electricity!

Section 2: Writing Numeral 1

Section 2 Materials

- Braillewriter
- Braille paper
- Two swing cells (or two muffin tins and balls if you don't have access to swing cells)
- Activity 1: in addition to the other materials used in Section 2,
 - One small object that reminds the student of a train and can be glued or stuck onto the paper
 - Glue stick (Alternatives: double-sided tape, sticky tack, glue)

Section 2 Teacher Note

If your student is using a refreshable braille display, explain about the additional keys on the far right and far left.

Section 2 Teacher Script

Now let's have fun with writing! Begin by opening the first swing cell. It contains the numeric indicator. Which dots make the numeric indicator? That's right! Dots 3-4-5-6 make the numeric indicator.

Practice 2.1

Review how to write the numeric indicator on your braillewriter. Use your ring finger on the left and all three fingers on the right!

Practice 2.2

Now let's finish the numeral 1. Let's open the second swing cell. The only peg is in dot 2. Use your middle finger on the left and none of the fingers on the right. You try it now in the air and then on your braillewriter.

Practice 2.3

Put the two braille cells together and practice writing the numeral 1 in Nemeth using your braillewriter.

Practice 2.4

Write it a few more times. Space one time between your numerals. When you finish writing the numeral 1 several times, move your fingers across the braille and check your work!

Activity 1

You will need a sheet of braille paper, your braillewriter, and one object that reminds you of a train!

Ready, set, go! Write the numeral 1 in Nemeth. Then, glue your one train onto the paper!

Section 3: Reading Numeral 2

Section 3 Materials

- Two swing cells (or two muffin tins and balls if you don't have access to swing cells)
- Student Braille Document: GPK-M2-Student-Materials.brf
- Activity 2
 - Sorting tray with dividers
 - Five flashcards for each numeral from 1-2 shuffled

Section 3 Teacher Note

If you are using hard copy braille, the student can do the following instead of making train sounds whenever they find a numeral 2:

- Stomp a foot
- Underline or circle the numeral 2 with a grease marker or crayon
- Place a small sticker on top of each numeral 2

Section 3 Teacher Script

Way to go! Let's move to the numeral 2 in Nemeth!

[Make sure the student is viewing the numeral 2 at the top of page 5.]

2

Numeral 2 begins with the numeric indicator in the first braille cell and ends with dots 2-3 in the second braille cell!

Let's use the swing cells again. It is your turn to build the numeral 2. Do you remember the dots that make a numeric indicator? That's right! Dots 3-4-5-6 make a numeric indicator! Choo-choo-choo-choo!

Begin by using the pegs to make the numeric indicator in the first braille cell. Then move to the second braille cell and place two pegs in dots 2-3.

Practice 3.1

Now it is your turn to find the numeral 2. Softly move your curved fingers across each line of braille and say "all aboard" whenever you find the numeral 2!

[Five lines of dots 2-5 on page 5 with a numeral 2 inserted in each line.]



Clickety, clickety, clickety, clack along the rails! You found the numeral 2.

Practice 3.2

Now move your fingers across each line of braille and find the numeral 2 hidden in a line of railroad cars.

[Five lines of full braille cells on page 6 with a numeral 2 inserted in each line.]



Practice 3.3

Sometimes a line may have more than one numeral 2. Move your fingers across the next line of braille and find both numeral 2s.

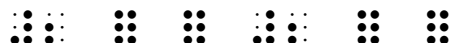
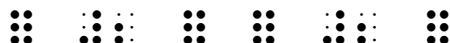
[Make sure the student is viewing the first line of braille on page 7.]



You are on the right track! Way to go!

Practice 3.4

Continue to the next five lines of braille and good luck finding all of the numeral 2s.



You are a math super star!

Practice 3.5

Let's find the numeral 2 again! This time say "ding ding ding" like the signal at a railroad crossing when you find the numeral 2! On some lines you may find lots of numeral 2s.

[Five lines of dots 2-5 on page 8 with one or two numeral 2s inserted in each line.]

The figure consists of 12 diagrams arranged horizontally, each showing a pattern of black dots on a grid. The patterns are as follows:

- Diagram 1: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 2: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 3: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 4: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 5: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 6: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 7: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 8: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 9: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 10: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 11: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).
- Diagram 12: A 3x3 grid with dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3).

Practice 3.6

Let's find more numeral 2s. Say "choo choo" when you find the numeral 2 in each line. Be careful to make sure it is a numeral 2 and not a numeral 1.

[Five lines of dots 2-5 on page 9 with one or more numeral 1s and/or numeral 2s inserted in each line.]

All aboard, math superstar!

Practice 3.7

Let's find some more numeral 2s that are hiding in a line of railroad cars and numeral 1s. Just find the 2s.

[Six lines of full braille cells on page 10 with one or more numeral 1s and/or numeral 2s inserted in each line.]

Practice 3.8

Let's practice reading numerals 1 and 2. Read the numeral at the beginning of each line and find its match on the line of braille.

[Make sure the student is viewing the four lines of braille on page 11.]

Way to go, Nemeth superstar!

Practice 3.9

Let's try some more.

[Make sure the student is viewing the five lines of braille on page 12.]

Activity 2

Use your flashcards to practice reading the numerals 1 and 2. Place all of the numeral 1s in one stack and place all of the numeral 2s in another stack.

Fun Fact 3

Trains are built to transport people or cargo along rail tracks.

Section 4: Writing Numeral 2

Section 4 Materials

- Braillewriter
- Braille paper
- Two swing cells (or two muffin tins and balls if you don't have access to swing cells)
- Activity 3: in addition to the other materials used in Section 4,
 - Two objects that remind the student of a train and can be glued or stuck onto the paper
 - Glue stick (Alternatives: double-sided tape, sticky tack, glue)

Section 4 Teacher Script

Now let's have fun with writing! Go back to the first swing cell. It contains the numeric indicator. Which dots make the numeric indicator? That's right! Dots 3-4-5-6 make the numeric indicator. Since it is closed, open the swing cell.

Practice 4.1

Use your ring finger on the left and all three fingers on the right to write the numeric indicator on your braillewriter.

Practice 4.2

Now let's finish the numeral 2. Open the second swing cell. The pegs are in dots 2-3. Use your middle and ring fingers on the left and none of the fingers on the right. You try it now in the air and then on your braillewriter.

Practice 4.3

Put the two cells together and practice writing the numeral 2 in Nemeth using your braillewriter. Space one time between your numerals.

When you finish writing the numeral 2 several times, move your fingers across the braille and check your work!

Activity 3

You will need a sheet of braille paper, your braillewriter, and two objects that remind you of a train!

Ready, set, go! Write the numeral 2 in Nemeth. Then, glue your two trains onto the paper!

Fun Fact 4

Trains were first created more than 200 years ago!

Section 5: Reading Numeral 3

Section 5 Materials

- Two swing cells (or two muffin tins and balls if you don't have access to swing cells)
- Student Braille Document: GPK-M2-Student-Materials.brf

Section 5 Teacher Script

Next stop is the numeral 3 in Nemeth.

[Make sure the student is viewing the numeral 3 at the top of page 13.]

3

Numeral 3 begins with the numeric indicator in the first braille cell and ends with dots 2-5 in the second braille cell! All Nemeth numerals are placed in the bottom part of the braille cell.

Now let's use the swing cells to build the numeral 3. Do you remember the dots that make a numeric indicator? That's right! Dots 3-4-5-6 make a numeric indicator! Ding-ding-ding-ding!

Begin by using the pegs to make the numeric indicator in the first braille cell. Then move to the second braille cell and place pegs in dots 2-5. Congratulations! You made the numeral 3.

It is your turn to find the numeral 3 in each line of braille, but before we begin, tell me at least 2 helpful hints for reading braille! Did you include hands together, curved fingers, and lightly glide your fingertips across the braille from left to right?

Practice 5.1

Now move your fingers across the line of braille and say "all aboard" like a conductor when you find the numeral 3!

[Five lines of dots 2-5 on page 13 with a numeral 3 inserted in each line.]

The figure consists of 10 sub-diagrams arranged in a single row. Each sub-diagram shows a grid of dots, with some dots being black and others white. The first 9 sub-diagrams show a growing cluster of black dots, starting from a single dot and expanding to a 3x3 square. The 10th sub-diagram shows a more complex, irregular pattern of black dots, with some dots appearing to be in the background or foreground, creating a 3D effect.

Good job, train conductor! You found the numeral 3 in each line.

Practice 5.2

Now find the numeral 3 hidden in a line of railroad cars.

[Five lines of full braille cells on page 14 with a numeral 3 inserted in each line.]

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Practice 5.3

Sometimes a line of braille may have more than one numeral 3. Track the next two lines of braille and find the numeral 3s.

[Make sure the student is viewing the first two lines of braille on page 15.]

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Fun Fact 5

Trains that carry cargo are typically powered by a locomotive that pulls from the front.

Practice 5.4

Okay, train conductor, continue to the next line of braille on the page and find all of the numeral 3s.

[Five lines of dots 2-5 on page 15 with two numeral 3s inserted in each line.]

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What does a train whistle sound like? Wwwwwooooo!

Practice 5.5

Let's move our fingers lightly over the braille and find the numeral 3s that are hiding in a line of railroad cars.

[Five lines of full braille cells on page 16 with two numeral 3s inserted in each line.]

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Practice 5.6

Let's find the numeral 3 again! This time say "wwwwooo" like the train whistle when you find the numeral 3! On some lines you find only 1 numeral 3 and on other lines you may find lots of numeral 3s.

[Six lines of dots 2-5 on page 17 with one or two numeral 3s inserted in each line.]

The diagram shows 16 test items arranged in a grid. The first 15 items are in a 3x5 grid, and the 16th item is in a separate 2x2 grid. Each item is represented by a set of dots forming a pattern.

Fun Fact 6

Some people in the United States travel on a train to go to work each day!

Practice 5.7

Sometimes a line will have more than one numeral. Find the numeral 3 in each line. Say "tickets please" like a conductor when you find the numeral 3 in each line. Be careful to make sure it is a numeral 3 and not a numeral 1.

[Five lines of dots 2-5 on page 18 with one or more numeral 1s and/or numeral 3s inserted in each line.]

Way to go, train conductor!

Practice 5.8

Move your fingers lightly over the braille and find some more numeral 3s that are hiding in a line of railroad cars and numeral 1s. Be sure to find only the numeral 3s.

[Six lines of full braille cells on page 19 with one or more numeral 1s and/or numeral 3s inserted in each line.]

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Fun Fact 7

America's first steam train lost a race to a horse.

Section 6: Writing Numeral 3

Section 6 Materials

- Braillewriter
- Braille paper
- Two swing cells (or two muffin tins and balls if you don't have access to swing cells)
- Activity 4: in addition to the other materials used in Section 6,
 - Three objects that remind the student of a train and can be glued or stuck onto the paper
 - Glue stick (Alternatives: double-sided tape, sticky tack, glue)

Section 6 Teacher Script

Time for writing! Let's go back to the first swing cell. It contains the numeric indicator. Which dots make the numeric indicator? That's right! Dots 3-4-5-6 make the numeric indicator. Since it is closed, open the swing cell. This will help you know where your fingers will go!

Practice 6.1

Use your ring finger on the left and all three fingers on the right to write the numeric indicator on your braillewriter.

Practice 6.2

Now let's finish the numeral 3. Let's open the second swing cell. The pegs are in dots 2-5. Use your middle finger on both hands. You try it now in the air and then on your braillewriter.

Practice 6.3

Put the two cells together and practice writing the numeral 3 in Nemeth using your braillewriter.

Practice 6.4

Now practice writing 3 several times using your braillewriter. Space one time between your numerals. When you finish writing your numerals several times, move your fingers across the braille and check your work!

Activity 4

You will need a sheet of braille paper, your braillewriter, and three objects that remind you of a train!

Write the numeral 3 in Nemeth. Then, glue your three trains onto the paper!

Section 7: Review

Section 7 Materials

- Student Braille Document: GPK-M2-Student-Materials.brf
- Activity 5
 - Three objects
 - Bin or bucket
 - Braillewriter
 - Braille paper

- Activity 6
 - Timer
 - Five flashcards for each numeral from 1-3 shuffled

Section 7 Teacher Script

Practice 7.1

Let's practice reading numerals 1, 2, and 3.

[Make sure the student is viewing the two lines of braille on page 20.]

Activity 5

Place 3 objects in a bin or bucket. Select one or more of the objects. Then count the items and braille the Nemeth numeral. Afterwards place the objects back in the bin or bucket. Now have a teacher or a friend select some objects. Then count the items and braille the Nemeth numeral!

That was great counting and writing, train conductor!

Practice 7.2

Next, read the numeral at the beginning of each line and find its match on the line of braille. Make a sound like a train when you find the match! Choo choo choo!

[Make sure the student is viewing the six lines of braille on page 21.]

[illegible]

Way to go, Nemeth superstar!

Practice 7.3

Let's try some more.

[Make sure the student is viewing the six lines of braille on page 22.]

Activity 6

Use your flashcards to practice reading the numerals 1-3. Once you can read all of the numerals correctly, go back and time how quickly you can read the numerals! Do you think you can read the numerals even quicker? If so, try one more time! Good luck, train conductor!

Now you are ready for the next train stop: module 2 check-up! Thank you for all of your hard work!