

## GOALS OF LEVEL:

### MK1

**Goal:** Level MK1 aims to introduce students to numbers with a variety of exercises. On completing this level, students will be able to read and recite numbers up to 10 and recognize patterns of dots up to 10 without counting each one individually.

**Helpful tips:** Parental involvement at this level is important to a child's success. We strongly suggest that parent count with his/her child on a daily basis to develop his or her desire to count. Praise the child when he or she finishes the daily worksheets.

Pg 1-10	Learning Objective: Recognize numbers 1 – 3
Pg 11-20	Learning Objective: Recognize numbers 1 – 5
Pg 21-30	Learning Objective: Recognize numbers 1 – 5
Pg 31-40	Learning Objective: Recognize numbers 1 – 6
Pg 41-50	Learning Objective: Recognize numbers 1 – 7
Pg 51-60	Learning Objective: Recognize numbers 1 – 8
Pg 61-70	Learning Objective: Recognize numbers 1 – 9
Pg 71-80	Learning Objective: Recognize numbers 1 – 10
Pg 81-90	Learning Objective: Number of Dots 1-10 Part I
Pg 91-100	Learning Objective: Number of Dots 1-10 Part II

**Notes for Instruction:**

1. There is **no Standard Time** for Level MK1. When deciding whether or not to advance students, Instructors should compare the ability of students to the stated goals of each section of the level, and to the goals of the level as a whole.
2. The aim of the level is for students to **count numbers**. Therefore, it is not necessary for students to include the object name when counting. For example, with the illustration of bees, student should say “one, two,....” and not “one bee, two bees,.....”
3. **Counting:**
  - i. For young students, demonstrate how to count aloud and have them follow your example.
  - ii. Have students point to the pictures or numbers when counting them.
  - iii. Guiding students’ fingers to point at the pictures as they count will help.
  - iv. Students should say only one number per picture.
  - v. As students point to the number, have students **recite** the number. Have students observe the number of dots that correspond to the number.
  - vi. Have students place a mark in the “I did it” circle when students have finished each page.

- vii. The goal of the level is to read and recite numbers up to 10 and recognize patterns of dots up to 10. Students are **not required to write numbers**.

However, students may trace numbers with their finger or pencil if they want. In page 23p, 36s, 78p students can write the number of each item found in the picture or they could draw a line connecting each number to the item.

- viii. If students can say the number of objects immediately, it is not necessary to have them count them out one by one. Praise students who can count pictures or recite numbers by themselves. Give extra praise to students who can say the number of objects instantly, without counting.

#### 4. **Coloring exercise:**

- i. Coloring exercises help students develop fine motor skills enabling them to write numbers. It will also help students recognize numbers. When students are doing coloring exercises, have them recite numbers that they are coloring.
- ii. Do not criticize students who have difficulty staying within the line when coloring. To develop fine motor skills, encourage students to engage in activities such as cutting paper with scissor, play dough, beads and coloring at home.

## 5. Exercises with Lines:

- i. Students develop their sequencing and pencil-control skills by drawing lines in this section, while at the same time improving their awareness of numbers and number sequence.
- ii. Have students say the numbers aloud as they draw the lines.
- iii. Some students may be writing for the first time. Make sure that they are holding the pencil correctly, and help them by guiding their hand.
- iv. For students who have trouble gripping pencil, using a “grip guide” or a preschool pencil will help.

## 6. Number of Dots:

81 – 90 counting up to 7 dots

91-110 counting up to 10 dots

- i. In worksheet 81-110, have students count the dots out loud initially. Praise students who can recognize the number of dots without counting.
- ii. By the end of the level, students should not be counting the dots one by one to come up with the total number of dots. Instead student should be able to recognize the number of dots without counting. Recognizing dots pattern will help students with their addition skill. If students answers are slow initially, you can help students by simply telling them the total number of dots. This will help them memorize dot pattern.

However, it will be necessary to assign repetition to increase the speed and independence of the students' response.

7. **Instruction:**

- i. Read instruction to students. Go over symbol (=), (<), (>)

8. **Example:**

- i. Encourage students to **study example** (e.g. page 9s, 10p) will help students build good habit.

9. Completing **supplementary activities** will smooth the progress of students in MK1.

Supplementary activities that PEL recommends at the center:

- i. **number board 1-20**

Benefits:

Number board will help with number reciting, number recognition and reading, understanding of number relationships and eye-hand coordination.

Routine:

- a) show student how to place the number piece
- b) Hand the pieces to the student in numerical order, starting with 1-5 and increasing. Eventually student is to pick up number in random order. If needed, use the side of board with numbers to scaffold.
- c) Have the student recite each number
- d) Gradually increase the level of independence

- e) Time student once he/she can easily place 1 to 20
- f) The goal is to be able to complete 20 number board in 6 - 8 minutes

Supplementary activities that PEL recommends at home:

i. **Singing songs**

Benefits: Increase vocabulary, memory and concentration.

Routine:

Parents could sing to their child or they could sing together.

ii. **Reciting Numbers**

Benefits: Increase understanding of number sequence

Routine:

a) Recite numbers while pointing to objects in worksheets.

b) Recite numbers in everyday activities.

c) Once reciting forward is mastered, try reciting backwards.

iii. Activities such as **cutting paper with scissor, play dough, beads, coloring**

Benefits: Improve fine motor movement

Routine: Incorporate the above activities in a child routine

## **MK2**

**Goal:** On completing Level MK2, students will be able to read, recite and write numbers up to 20, recognize patterns of numbers up to 20.

**Helpful Tips:** Parental involvement at this level is important to a student's success. In worksheet 61 - 100, student counts up to 20 dots in group. Pattern recognition will increase students' math awareness. In worksheet 101 - 110, encourage students to recognize patterns in the exercise. As always, praise and encouragement will motivate.

Pg 1-10	Learning Objective: Number writing 1 – 3
Pg 11-20	Learning Objective: Number writing 4 – 6
Pg 21-30	Learning Objective: Number writing 7 – 8
Pg 31-40	Learning Objective: Number writing 9 – 10
Pg 41-50	Learning Objective: Number writing to 10, Dot recognition to 10
Pg 51-60	Learning Objective: Number writing 15, Dot recognition to 15 Number counting to 20
Pg 61-70	Learning Objective: Number writing to 20, Dot recognition to 20 Number counting to 30
Pg 71-80	Learning Objective: Number writing to 20, Dot recognition to 20 Number counting to 40
Pg 81-90	Learning Objective: Number writing to 20, Dot recognition to 20 Number counting to 40

Pg 91-100 Learning Objective:  
Number writing to 20, Dot recognition to 20  
Number counting to 50

Pg 101-110 Learning Objective:  
Critical Thinking

### **Notes for Instruction:**

1. Before starting MK2, students should do sufficient coloring and fine motor skills exercises so that the muscles in their hands are strong enough to hold a pencil and be able to apply sufficient pressure. For students who have trouble gripping pencil, using a "grip guide" or a preschool pencil will help.
2. There is **no Standard Time** for Level MK2. When deciding whether or not to advance students, Instructors should compare the ability of students to the stated goals of each section of the level, and to the goals of the level as a whole.
3. **Worksheet 1-40**
  - i. The stroke order for writing numbers from 1 to 10 are shown in worksheet 1 to 40. Instructors do not need to be overly strict about writing numbers neatly. However, it is important to ensure that the **stroke order** is follow.
  - ii. As student writes the number, have student **recite** the number. Have student observe the number of dots that correspond to the number.
  - iii. **Missing numbers exercise:** (e.g. 16p, 17s, 27s, 28s) Ask student to refer to the number key on the bottom of page if needed.
  - iv. **Number sequence exercise:** (e.g. 20p, 20s, 26p etc.) Have student refer to previous page with number sequence if need to.

4. **Worksheet 41-50:** Pg. 41-50 is a review of writing numbers 1-10 and recognizing number of dots up to 10. Have students practice until they can instantly recognize the number of dots up to 10. It is important for students to develop this skill before they advance to worksheet 51 where the number of dots increases to 15.
  
5. **Worksheet 51-100:**
  - i. Students gradually practice writing numbers to 20 by worksheet 100.
  
  - ii. Instant recognition of dot patterns up to 20 is not a requirement, although it is desirable.
  
  - iii. Students will recite up to 50 by end of worksheet 100.
  
  - iv. Concept of 10 is introduced starting in worksheet 51. Counting by ten will help student with addition skills.
  
  - v. Connect numbers by drawing line: Students practice drawing lines by connecting numbers. These line drawing exercise start with gradual curve (64P) to sharp turns at corners (e.g. 65p). Have students stop at the corners to accurately follow the sharp turns.
  
6. **Worksheet 101-110:** Critical Thinking  
These exercise introduce pattern recognition and critical thinking. Give subtle hints for students who are having problem.
  
7. **Supplementary activities:**  
Continue with number boards at the center. By end of the level, students should be able to complete 30 number board in 3 – 5 minutes.

## MK3

**Goal:** Level MK3 aims for students to master numbers writing to 50, counting numbers to 60 and dots recognition. MK3 further develop students work skills, sense of numbers and recognition of patterns.

**Helpful Tip:** Have students recite numbers aloud as they write numbers will help them with number sequencing.

Pg 1-10	Learning Objective: Number Writing to 20
Pg 11-20	Learning Objective: Number Writing to 20 Number counting to 40
Pg 21-30	Learning Objective: Number Writing to 30 Number counting to 40
Pg 31-40	Learning Objective: Number Writing to 30 Number counting to 50
Pg 41-50	Learning Objective: Number Writing to 40 Number counting to 50
Pg 51-60	Learning Objective: Number Writing to 40 Number counting to 50
Pg 61-70	Learning Objective: Number Writing to 40 Number counting to 60
Pg 71-80	Learning Objective: Number Writing to 50 Number counting to 60
Pg 81-90	Learning Objective: Number Writing to 50

Pg 91-100 Learning Objective:  
Critical Thinking Part I

Pg 101-110 Learning Objective:  
Critical Thinking Part II

### **Notes for Instruction:**

1. There is **no Standard time** for Level MK3. When deciding whether or not to advance students, Instructors should compare the ability of students to the stated goals of each section of the level, and to the goals of the level as a whole.
2. The **development of concentration** is an important goal for Level MK3. To develop concentration, try assigning students more sheets of easier work rather than fewer sheets of hard work.
3. **Number Writing:**  
In MK 3, students continue to sharpen their number sequencing and number writing skills. By page 90, students will be writing up to 50. Students are to write missing numbers in the blank space of the number chart and not in boxes with pictures (see page 1s).
4. **Number Counting:**  
Students will count up to 60 by end of the level. Praise students if they can count beyond 60 although this is not the study objective of MK3.
5. **Number Sense Exercises:**  
Exercises on different dots pattern in page 4s, 9s, 13p, 13s, 17s, 18p, 18s, 39s, 40p and 40s reinforces number sense and pre-addition skills.
6. **Pattern Recognition:**  
Exercises on pattern recognition help students develop critical thinking appears on page 5s, 20p.
7. **Shapes:**  
Concept of square, rectangle, circle, triangle is introduced in pages 14s, 15p, 15s, 19p and 19s.

8. Worksheet 91-110: **Critical Thinking**

These exercise introduce pattern recognition and critical thinking. Give subtle hints for students who are having problem.

9. **Supplementary activities:**

Continue with number board at the center. When students can complete the 30 number board within 1-2 minutes, move them to 50 number board. By end of the level, students should be able to complete 50 number board in 3-5 minutes.

## **MK4**

**Goal:** On completing Level MK4, students will be able to write numbers up to 130, read and recite numbers up to 150. Students will be able to count by 2, 3, 4, 5 and 10.

**Helpful Tip:** Have students recite numbers aloud as they write numbers will help them with number sequencing.

Pg 1-10      Learning Objective:  
Review Number Writing to 30  
Number counting to 50

Pg 11-20     Learning Objective:  
Number Writing to 50

Pg 21-30     Learning Objective:  
Number Writing to 70  
Number counting to 70

Pg 31-40     Learning Objective:  
Number Writing to 90  
Number counting to 100

Pg 41-50     Learning Objective:  
Number Writing to 110  
Number counting to 120

Pg 51-60     Learning Objective:  
Number Writing to 130  
Number counting to 150

Pg 61-70     Learning Objective:  
Count by 2

Pg 71-80     Learning Objective:  
Count by 3, count by 4

Pg 81-90     Learning Objective:  
Count by 5

Pg 91-100 Learning Objective:  
Count by 10

Pg 101-110 Learning Objective:  
Dots Pattern

### **Notes for Instruction:**

1. There is **no Standard time** for Level MK4. When deciding whether or not to advance students, Instructors should compare the ability of students to the stated goals of each section of the level, and to the goals of the level as a whole.
2. The **development of concentration** is an important goal for Level MK4. To develop concentration, try assigning students more sheets of easier work rather than fewer sheets of hard work.
3. **Worksheet 1-60: Number Writing**
  - i. In MK 4, students continue to sharpen their number sequencing and number writing skills. By page 60, students will be writing up to 130.
  - ii. Students are to write missing numbers in the blank space of the number chart and not in boxes with numbers preprinted (see page 7s). Students are expected to write number on box where number is given as a guide (see page 7s).
  - iii. Have students recite numbers aloud as they write numbers will help them with number sequencing.
  - iv. If students have problem remembering number sequence, you can scaffold by asking them to refer to previous page.

#### **4. Worksheet 61 – 100: Counting by 2, 4, 5 and 10**

- i. Worksheet 61 introduces counting by 2:  
For students who can say the number of objects immediately, it is not necessary to have them count out one by one. Some students may need to count the objects one by one. After some practice, go over counting by 2's with them.
- ii. Worksheet 71 introduces counting by 3 and 4:  
See (i) above for instructional tips.  
In page 80s: students are ask what pattern did they notice. If students did not notice the connection between 2's and 4's, tell them that 4's is double of 2's.
- iii. Worksheet 81 introduces counting by 5:  
See (i) above for instructional tips.  
In page 86p, the concept of counting by 5 is used to complete the number on the clock.  
In page 87s, 88p, 88s and 90p, the concept of counting by 5 is used to count nickel.
- iv. Worksheet 91 introduces counting by 10:  
See (i) above for instructional tips.  
In page 95p: the concept of counting by 10 is used to complete the number on the clock.  
In page 95s, 96p and 97p: the concept of counting by 10 is used to count dime.  
In page 98p: students are ask what pattern did they notice. If students did not notice the connection between 5's and 10's, tell them that 10's is double of 5's.  
In page 99s, 100p, 100s: the concept of ten more is introduced.

#### **5. Worksheet 101-110:**

Worksheet 101 – 110 reinforces number of dots, double facts and pre-addition skills.

**6. Supplementary activities:**

Continue with number board at the center. When students can complete the 50 number board within 1-2 minutes, move them to 100 number board. By end of the level, students should be able to complete 100 number board in 10-12 minutes.