SRA

NUMBER WORLDS™

Accelerate Math Success

Placement Test Guide

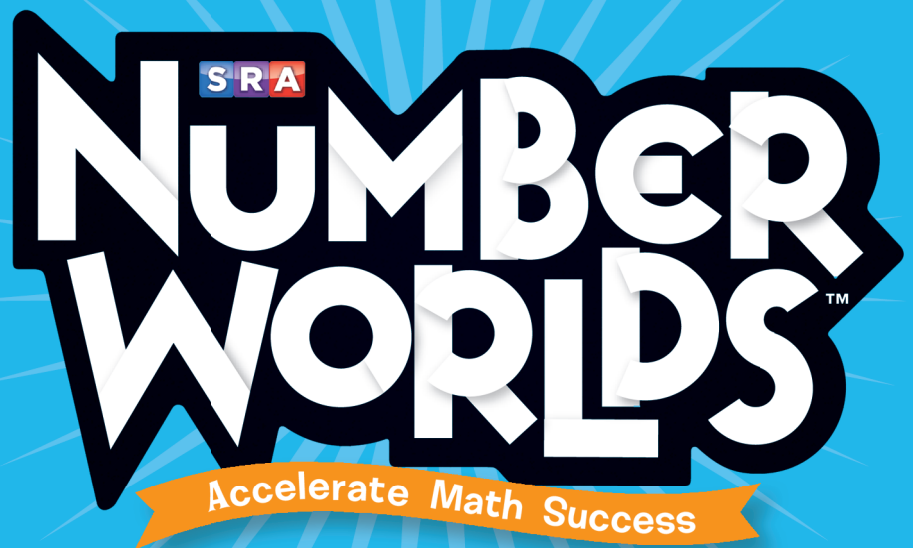McGraw Hill Education

Number Knowledge Test and Placement Tests Overview

As part of the **Number Worlds** program, the Number Knowledge Test was developed to measure a student's conceptual knowledge of number (number sense). The level Placement Tests were created to determine where each student should begin instruction within the **Number Worlds** curriculum. Together, these tests are a valuable first step in assessing students' intuitive knowledge of number and their preexisting knowledge of the Common Core State Standard (CCSS) math skills associated with their grade level. Students' test results can be used to confirm or adjust their future lessons, as well as inform and differentiate instruction within your classroom. If administered at both the beginning and end of an instructional period, the Number Knowledge Test and Placement Tests may also be used to measure the progress and developmental growth of a student over time.

Goals of the Number Knowledge Test

1. To determine if a student is functioning at, above, or below age/grade level in number knowledge

2. To determine which number concepts the student has mastered, which she is struggling with, and which she still needs to learn

3. To assess a student's progress over the instructional period or academic year

4. To determine which **Number Worlds** level Placement Test to start testing with in order to pinpoint the program level in which each student should begin her instruction

Test Design

The Number Knowledge Test is an oral test that is administered individually to each student and requires oral responses. Precise instruction for administering and scoring each item is included along with nine Visual Arrays that test the solidity of a student's understanding of number sense and decrease the likelihood of guessing at a correct response.

Number Knowledge Test   *Visual Array 6*   *Test Record*

The Number Knowledge Test Record allows you to record a variety of data about student responses, including the problem-solving strategies used on key items. The raw test score values calculated on the record can be used to determine a student's developmental age score and its grade level equivalent, as well as the corresponding **Number Worlds** program level for instruction.

Goals of the Placement Tests

1. To function as a critical range test in which only items estimated to be within the student's probable range of math understanding are administered

2. To identify in which level a student should begin her instruction within the **Number Worlds** curriculum

3. To assess a student's preexisting knowledge of the Common Core State Standards (CCSS) associated with a level

4. To assess a student's progress over the instructional period or academic year

Placement Tests in Levels A–C

Number Worlds levels A–C are targeted for use by students in grades Pre-Kindergarten through Grade 1.

Placement Tests for levels B and C are designed to be administered orally and individually to each student by a teacher, classroom aid, or parent helper. The tests at these levels consist of teacher's instructions on the left-hand page and reproducible student test masters on the right-hand page.

Placement Test, Level B

Placement Tests in Levels D–J

Number Worlds levels D–J are targeted for use by students in Grades 2–8.

At these levels, the Placement Tests consist solely of multiple-choice items. In order to best evaluate the effectiveness of the **Number Worlds** program and prepare the student for future standardized testing, students taking these tests should attempt to take them independently.

Placement Test, Level F

Using the *Number Worlds* Placement Tests

The **Number Worlds** Placement Tests are used to determine in which **Number Worlds** level students should begin their instruction. There is a Placement Test per level in levels B-I (with level A being the level of instruction for students who do not pass Placement Test B and level J being the level of instruction for students who excel on Placement Test I). Every Placement Test assesses students' preexisting knowledge of the Common Core State Standards associated with that level. The items in the tests are arranged from easiest to most difficult. A student's score on a Placement Test will indicate whether or not they need to continue testing at a different level so that the appropriate level of instruction within the program can be determined.

If you have given the Number Knowledge Test to the student, it is recommended that you administer the Placement Test that corresponds to their Raw Test Score on the following Developmental Conversion Chart. If you have not given the student the Number Knowledge Test, locate the student's current grade in the Grade Level Equivalents column, and administer the corresponding level Placement Test. The Grade Level Equivalents cover a range of two grade levels (e.g. K-1). Begin testing with the lower Placement Test. For example, if your student is in the 3rd grade, begin testing with Placement Test E. This will help ensure that children achieve success on the beginning items of this test and provide a baseline measure of the child's math competence.

Developmental Conversion Chart

Raw Test Score	Developmental Age Score (Chronological Age Equivalents)	Grade Level Equivalents	Number Worlds Level
1–6	3–4 years	Preschool	Level A
7–8	4–5 years	PreK-K	Level B
9–14	5–6 years	K–1	Level C
15–19	6–7 years	1–2	Level D
20–25	7–8 years	2–3	Level E
26–28	8–9 years	3–4	Level F
29–30	9–10 years	4–5	Level G
N/A	10–11 years	5–6	Level H
N/A	11–12 years	6–7	Level I
N/A	12–13 years	7–8	Level J

Critical Range Testing

The *Number Worlds* Placement Tests are collectively and individually a critical range test. A critical range test consists of a series of items arranged from easiest to most difficult. A student completes a portion (or range) of items in the test which approximates their abilities. If a student makes several consecutive correct responses, it can be assumed with confidence that the student would also respond correctly to the preceding items, which are easier. Therefore, those items need not be administered. Similarly, when a student makes several incorrect responses, it can be assumed that the student would also not have the capability to correctly answer the subsequent items, which are more difficult.

This progression of difficulty also holds true across levels, so many students will need to be given more than one level's Placement Test in order to assess their current level of understanding. Using a critical range test for assessment is an ideal approach for placement within the program since it is not practical for the teacher to provide a full range of items to all examinees. Only items estimated to be within the student's current probable range of math understanding are administered. This approach saves time in the testing process and prevents the student from becoming overly frustrated.

The items used in the Placement Tests are representative of the content and standards covered within that level. Effort has been taken to use language that should be familiar to most students instead of *Number Worlds* specific terminology. The Developmental Conversion Chart can be used as a guide for determining the appropriate Placement Test with which to begin testing, but generally speaking, you want to underestimate a student's ability because it is preferable that the student has the opportunity to succeed in the beginning of the test-taking process. If your previous experience with a student suggests to you that they will perform below their current grade level, you should begin testing at the level you deem appropriate based on the information contained in the Developmental Conversion Chart.

Placement Tests may also be given at the end of the year (or once the *Number Worlds* curriculum for a given level is completed) and compared to the students' initial scores in order to measure the students' overall progress in their understanding of math concepts and Common Core State Standards.

Placement Tests in Levels A–C

Number Worlds levels A–C are targeted for use by students in grades Pre-Kindergarten through Grade 1. Placement Tests can be used to identify where students should begin within the **Number Worlds** curriculum.

Placement Tests for levels B and C are designed to be administered individually to each student by a teacher, classroom aid, or parent helper. The tests at these levels consist of teacher's instructions on the left-hand page and reproducible test masters on the right-hand page.

Placement Test, Level B

Placement Tests B and C contain 8 questions apiece which can be used to assess a student's prior knowledge of the corresponding **Number Worlds** content and Common Core State Standards for those levels. You may repeat questions to the students if necessary, but do not reword them.

- If a student correctly responds to 7 or 8 of the items, continue to assess the student using the next Placement Test up.

- If a student correctly responds to 4–6 items, the student should begin instruction within that **Number Worlds** level.

- If a student correctly responds to only 0–3 items in Placement Test C, continue to assess the student using Placement Test B.

- If a student correctly responds to only 0–3 items in Placement Test B, the student should begin instruction within **Number Worlds** level A.

To gain an even more thorough understanding of a student's conceptual knowledge of number (number sense) at these levels, use the Number Knowledge Test included in this book (pp. 19–32). The Number Knowledge Test was designed to assess central conceptual knowledge typically acquired by children around the ages of 4, 6, 8, and 10 years.

Placement Tests in Levels D–J

Number Worlds levels D–J are targeted for use by students in Grades 2-8. Placement of students at these levels within the **Number Worlds** curriculum should begin by evaluating their success on the reproducible Placement Tests on pages 46–63 of this book.

At these levels, students should attempt to take the test independently. If a student is struggling with reading comprehension of the items, the Placement Tests may be administered by a teacher, classroom aide, or parent helper. In order to best evaluate the effectiveness of the **Number Worlds** program and prepare the student for future testing, students should complete the test on their own.

LEVEL **F**

Name _____ Date _____

Placement Test

Circle the letter of the correct answer.

1. Look at the number. Increase the value of the hundreds digit by 3. What would the new number be?

24, 516

A 24,519
B 24,546
C 27,216
D 24,816

2. $936 - 478 =$
A 458
B 542
C 452
D 448

3. Which problem will have an answer less than 500?
A $1162 - 584$
B $267 + 294$
C $1,427 - 986$
D $143 + 406$

4. What is the value of b in this equation?
$b + 9 = 15$
A 7
B 6
C 3
D 5

52 Level F **Placement Test**

Name _____ Date _____

LEVEL **F**

Circle the letter of the correct answer.

5. What is the range of a set of numbers?
A the number that appears most often in the set
B the highest number
C the difference between the lowest and highest number
D the number in the set that appears only one time

6. $63 \div 9 =$
A 6
B 8
C 4
D 7

7. Which answer matches this problem?
The temperature at four o'clock was 85°. By nine o'clock that night, it was 63°. How much did the temperature drop?

A $85 + 63 =$
B $85 - 63 =$
C $85 + 4 - 63 =$
D $9 - 4 =$

Placement Test Level F **53**

Placement Test, Level F

Placement Tests D–I contain 10 questions apiece which can be used to assess a student's prior knowledge of the corresponding **Number Worlds** content and Common Core State Standards for those levels. Ideally, a student should get most of the items correct in the level in which they are placed.
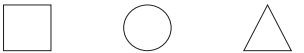
- If a student correctly responds to 8–10 of the items, continue to assess the student using the next Placement Test up.

- If a student correctly responds to 8–10 of the items in Placement Test I, the student should begin instruction within **Number Worlds** level J.

- If a student correctly responds to 4–7 items, the student should begin instruction within that **Number Worlds** level.

- If a student correctly responds to only 0–3 items, continue to assess the student using the next Placement Test down.

Name _____ Date _____

Placement Test

Circle the letter of the correct answer.

1. Which answer is the same as $8 + 6 + 9$?

    A 8 tens and 6 ones

    B 6 tens and 9 ones

    C 2 tens and 3 ones

    D 3 tens and 8 ones

2. Look at the squares. How many groups of tens and ones are there?

    A 6 tens and 6 ones

    B 2 tens and 4 ones

    C 3 tens and 6 ones

    D 5 tens and 4 ones
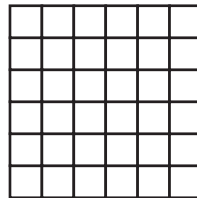
3. What shape is missing from this pattern?

    A

    B

    C

    D

Name _____ Date _____

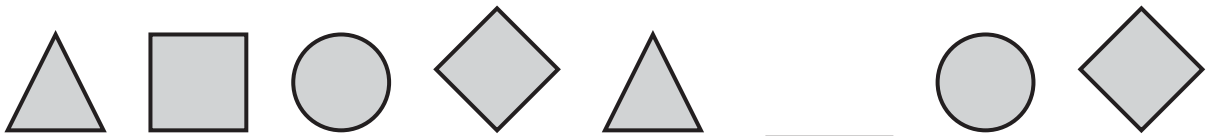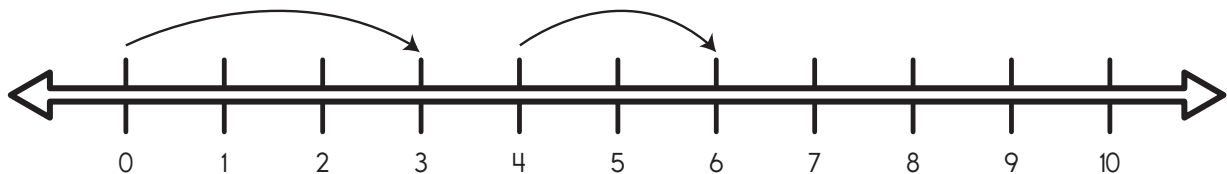Circle the letter of the correct answer.

4. What number goes in the box to make the problem correct?

$\boxed{} + 14 = 19$

A 6   **B** 8

C 7   **D** 5

5. Look at the number line. If the rule continues, where will the arrow land on the next hop?

A 7   **B** 9

C 10   **D** 13

6. Which answer is an equation?

A $9 = 3 = 6$

B $2 + 4 + 7$

C $7 - 2 + 7$

D $8 + 3 = 11$

7. Pat saw 5 fish and 3 turtles in a pond. Then 2 frogs hopped into the pond. How many things in all were in the pond?

A 10   **B** 8

C 12   **D** 7

Name _____ Date _____

Circle the letter of the correct answer.

8. Which equation matches this problem?

There were 9 birds in a tree. All of them flew away.
How many birds were left in the tree?

A $9 + 1 = 10$ **B** $9 - 9 = 0$
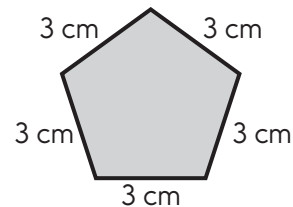
C $4 + 5 = 9$ **D** $9 + 0 = 9$
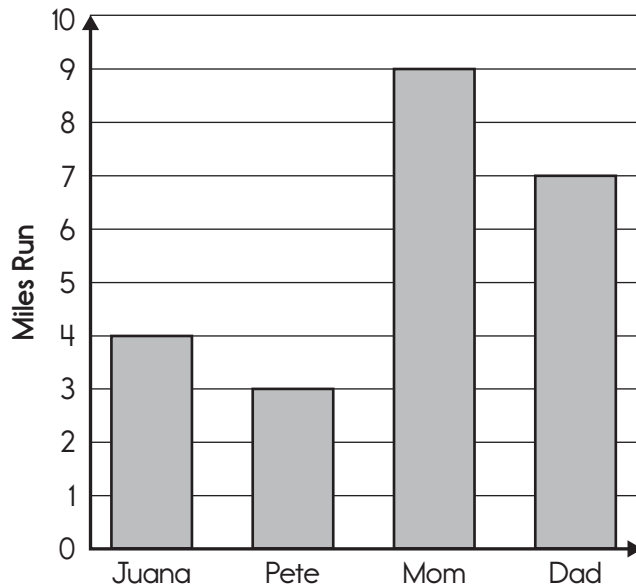
9. What is the perimeter of this shape?

A 15 cm   **B** 5 cm

C 8 cm   **D** 12 cm

3 cm   3 cm
3 cm   3 cm
3 cm

10. Look at the graph. How many miles did Mom run?

Miles Run — Juana, Pete, Mom, Dad

A 7   **B** 9

C 6   **D** 10

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