



Instructional Routines for Mathematics Intervention

The purpose of these mathematics instructional routines is to provide educators with materials to use when providing intervention to students who experience difficulty with mathematics. The routines address content included in the grades 2-8 Texas Essential Knowledge and Skills (TEKS). There are 23 modules that include routines and examples – each focused on different mathematical content. Each of the 23 modules include vocabulary cards and problem sets to use during instruction. These materials are intended to be implemented explicitly with the aim of improving mathematics outcomes for students.

Instructional Routines for Mathematics Intervention

MODULE 8

Subtraction of Whole Numbers



Module 8: Subtraction of Whole Numbers

Mathematics Routines

A. Important Vocabulary with Definitions

| Term | Definition |
|------------------------|--|
| algorithm | A procedure or description of steps that can be used to solve a problem. |
| compare | To find the difference between two sets. |
| computation | The action used to solve a problem. |
| difference | The result of subtracting one number from another number. |
| equal sign | The symbol that tells you that two sides of an equation are the same, balanced, or equal. |
| hundreds column | The column with digits in the hundreds place. |
| minuend | The number from which another number is subtracted. |
| minus sign | The symbol that tells you to subtract. |
| ones column | The column with digits in the ones place. |
| regroup/trade/exchange | The process of exchanging 1 ten for 10 ones, 1 hundred for 10 tens, 1 thousand for 10 hundreds, etc. |
| separate | To start with a set and take away from that set. |
| subtract/subtraction | To compare two sets or to separate from a set. |
| subtrahend | The number to be subtracted. |
| tens column | The column with digits in the tens place. |

B. Background Information

Background Information:

If your focus is on the conceptual understanding of subtraction, see *Module 7: Concepts of Subtraction*. This module, *Module 8*, focuses on subtraction computation of whole numbers. As you focus on computation, continue to emphasize subtraction as separating and subtraction as comparing because students will see these concepts within word problems.

For learning computation with subtraction, we recommend presenting problems vertically. Some students may require explicit instruction on translating a horizontal problem (e.g., $124 - 83$) to the vertical presentation (see below). Depending upon the algorithm, leave enough space above or below the problem for students to complete their written work.

Module 8: Subtraction of Whole Numbers

Problem Sets

- A. Two- and one-digit numbers without regrouping (5)
- B. Two- and one-digit numbers with regrouping (5)
- C. Two-digit numbers without regrouping (20)
- D. Two-digit numbers with regrouping (20)
- E. Three- and two-digit numbers without regrouping (5)
- F. Three- and two-digit numbers with regrouping (5)
- G. Three-digit numbers without regrouping (10)
- H. Three-digit numbers with regrouping (10)

A.

68

8

-

A.

43

-

2

A.

89

- 1

A.

$$\begin{array}{r} 96 \\ - 5 \\ \hline \end{array}$$

A.

$$\begin{array}{r} 38 \\ - 7 \\ \hline \end{array}$$

B.

$$\begin{array}{r} 61 \\ - 5 \\ \hline \end{array}$$

B.

93

- 6

B.

45

-

8

B.

58

-

9

B.

63

-

4

c.

$$\begin{array}{r} 74 \\ - 31 \\ \hline \end{array}$$

c.

84

- 11



c.

$$\begin{array}{r} 85 \\ - 70 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 97 \\ - 65 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 30 \\ - 20 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 91 \\ - 30 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 99 \\ - 38 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 55 \\ - 30 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 57 \\ - 10 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 98 \\ - 74 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 73 \\ - 32 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 85 \\ - 35 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 75 \\ - 62 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 77 \\ - 15 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 56 \\ - 26 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 65 \\ - 24 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 60 \\ - 30 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 97 \\ - 24 \\ \hline \end{array}$$

c.

98

- 40



c.

$$\begin{array}{r} 69 \\ - 31 \\ \hline \end{array}$$

D.

80

- 24



D.

$$\begin{array}{r} 72 \\ - 15 \\ \hline \end{array}$$

D.

$$\begin{array}{r} 60 \\ - 58 \\ \hline \end{array}$$

D.

75

- 46



D.

$$\begin{array}{r} 98 \\ - 79 \\ \hline \end{array}$$

D.

$$\begin{array}{r} 96 \\ - 77 \\ \hline \end{array}$$

D.

54

- 46



D.

$$\begin{array}{r} 80 \\ - 61 \\ \hline \end{array}$$

D.

$$\begin{array}{r} 31 \\ - 18 \\ \hline \end{array}$$

D.

$$\begin{array}{r} 71 \\ - 49 \\ \hline \end{array}$$

D.

$$\begin{array}{r} 66 \\ - 59 \\ \hline \end{array}$$

D.

26

- 19



D.

20

- 16



D.

$$\begin{array}{r} 96 \\ - 19 \\ \hline \end{array}$$

D.

$$\begin{array}{r} 77 \\ - 18 \\ \hline \end{array}$$

D.

$$\begin{array}{r} 75 \\ - 27 \\ \hline \end{array}$$

D.

56

- 49



D.

$$\begin{array}{r} 78 \\ - 49 \\ \hline \end{array}$$

D.

$$\begin{array}{r} 91 \\ - 47 \\ \hline \end{array}$$

D.

$$\begin{array}{r} 65 \\ - 57 \\ \hline \end{array}$$

E.

195

— 63



E.

694

- 20



E.

384

- 21



E.

499

- 18



E.

750

- 20



F.

172

- 63

F.

621

- 12



F.

735

- 69



F.

943

- 51



F.

238

- 54



G.

747

- 115



G.

509

- 301



G.

773

- 142

G.

578

- 427



G.

685

- 502



G.

$$\begin{array}{r} 961 \\ - 151 \\ \hline \end{array}$$

G.

323

- 111



G.

897

- 530

G.

888

- 184



G.

350

- 240



H.

675

- 328



H.

582

- 153



H.

$$\begin{array}{r} 580 \\ - 321 \\ \hline \end{array}$$

H.

777

- 168

H.

612

- 223

H.

202

- 247



H.

583

- 108



H.

490

- 177



H.

464

- 215

H.

609

- 134

Module 8:

Subtraction of Whole Numbers

Vocabulary Cards

algorithm

compare

computation

difference

equal sign

hundred column

minuend

minus sign

ones column

regroup/trade/exchange

separate

subtract/subtraction

subtrahend

tens column

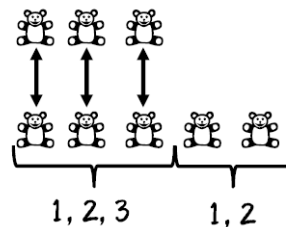
algorithm

A procedure or description of steps that can be used to solve a problem.

compare

To find the difference between two sets.

$$5 - 3 = 2$$



computation

The action used to solve a problem.

difference

The result of subtracting one number from another number.

$$6 - 4 = 2$$

2 is the **difference**

equal sign

The symbol that tells you that two sides of an equation are the same, balanced, or equal.

$$12 - 8 = 4$$

= is the equal sign

hundreds column

The column with digits in the hundreds place.

In the number **423**, **4** is in the hundreds place.

minuend

The number from which another number is subtracted.

$$9 - 4 = 5$$

9 is the **minuend**

minus sign

The symbol that tells you to subtract.

$$9 - 4 = 5$$

- is the **minus sign**

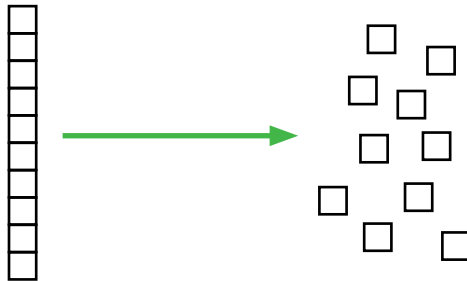
ones column

The column with digits in the ones place.

In the number 423, 3 is in the ones place.

regroup/trade/exchange

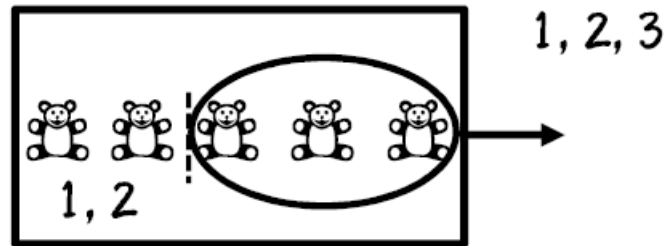
The process of exchanging 1 ten for 10 ones, 1 hundred for 10 tens, 1 thousand for 10 hundreds, etc.



separate

To start with a set and take away from that set.

$$5 - 3 = 2$$

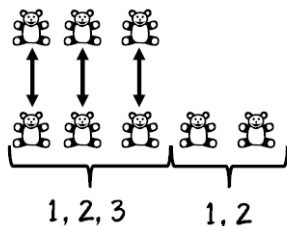


subtract/subtraction

To compare two sets or to separate from a set.

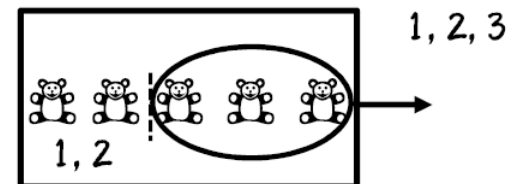
To compare two sets

$$5 - 3 = 2$$



To separate from a set

$$5 - 3 = 2$$



subtrahend

The number to be subtracted.

$$9 - 4 = 5$$

4 is the **subtrahend**

tens column

The column with digits in the tens place.

In the number 4**2**3, **2** is the in the **tens column**.