



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 13

Concepts of Division



Module 13: Concepts of Division

Mathematics Routines

A. Important Vocabulary with Definitions

Term	Definition
divide/division	To separate into equal groups or among groups.
dividend	The number to be divided.
division sign	The symbol that tells you to divide.
divisor	The number the dividend is divided by.
equal groups	Groups with the same number of objects or items in each group.
equal sign	The symbol that tells you that two sides of an equation are the same, balanced, or equal.
partitive division	A way of dividing where you share items into a pre-determined number of groups.
quotative division	A way of dividing where you measure a pre-determined amount of items into an unknown number of groups.
quotient	The result when one number is divided by another number.

B. Background Information

Students need to learn two concepts of division: (1) division as partitive and (2) division as measurement or quotative. Typically, students first learn about division as partitive. Then, students learn about division as measurement or quotative.

Division Fact

$$\begin{array}{r} 24 \\ \div 6 \\ \hline 4 \end{array}$$

← dividend
← divisor
← quotient

divisor

6

quotient

4

$$6 \overline{) 24}$$

← dividend

For learning the concepts of division, we recommend using *mathematics facts*. We define a division mathematics fact as a single- or double-digit dividend divided by a single-digit divisor for a single-digit quotient. You may present division facts vertically or horizontally.

Teacher So, if you have 15 beans and measure the beans into groups of 3, the quotient is 5. 15 divided by 3 equals 5. Let's review. What's a dividend?

Students The total number that will be divided.

Teacher What's a divisor?

Students The number we place into each group.

Teacher What's a quotient?

Students The number of groups we made by measuring the cubes into groups.

Teacher What does it mean to use quotative or measurement division?

Students To place objects into groups.

Teacher How could you explain dividing to a friend?

Students We started a total number of beans. We placed the beans into groups. The quotient was the number of groups we created.

D. Problems for Use During Instruction

[See Module 13 Problem Sets.](#)

E. Vocabulary Cards for Use During Instruction

[See Module 13 Vocabulary Cards.](#)

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Module 13:

Concepts of Division

Problem Sets

A. Division facts (60)

$$\begin{array}{r} 1 \\ 1 \\ \hline \end{array}$$

30

÷

5



24

÷

4



$$\begin{array}{r} 18 \\ \div 3 \\ \hline \end{array}$$

$$\begin{array}{r} 12 \\ \div 2 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 1 \\ \hline \end{array}$$

81

÷

9



30

÷

6



$$\begin{array}{r} 8 \\ 4 \overline{) 8} \end{array}$$

$$\begin{array}{r} 15 \\ \div 3 \\ \hline \end{array}$$

$$\begin{array}{r} \div \\ \hline 2 \\ 2 \end{array}$$

$$\begin{array}{r} 18 \\ \div 9 \\ \hline \end{array}$$

24

÷

6



64

÷

8



20

÷ 4



$$\begin{array}{r} 9 \\ 3 \\ \hline \end{array}$$

32

÷

4



25

÷

5



$$\begin{array}{r} 12 \\ \div 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \div 4 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \div 2 \\ \hline \end{array}$$

27

÷

3



28

÷

7



$$\begin{array}{r} 9 \\ 3 \\ \hline \end{array}$$

$$\begin{array}{r} \div \\ \hline 3 \\ 3 \end{array}$$

$$\begin{array}{r} 18 \\ \div 2 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ 9 \\ \hline \end{array}$$

36

÷

6



$$\begin{array}{r} 4 \\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ \div 8 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 3 \\ \hline \end{array}$$

16

÷

4



$$\begin{array}{r} 36 \\ \div 9 \\ \hline \end{array}$$

49

÷

7



$$\begin{array}{r} 5 \\ 5 \overline{) \div} \end{array}$$

12

÷

6



$$\begin{array}{r} 8 \\ 2 \overline{) 8} \end{array}$$

40

÷

5



$$\begin{array}{r} 56 \\ \div 8 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ \div 2 \\ \hline \end{array}$$

20

÷

5



72

÷

8



63

÷

9



$$\begin{array}{r} 5 \\ \div 1 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ 7 \overline{)7} \end{array}$$

42

÷

7



45

÷

9



54

÷

6



$$\begin{array}{r} 10 \\ \div 5 \\ \hline \end{array}$$

36

÷

4



35

÷

7



$$\begin{array}{r} 21 \\ \div 3 \\ \hline \end{array}$$

$$\begin{array}{r} 14 \\ \div 2 \\ \hline \end{array}$$

42

÷

6



54

÷ 9



15

÷

5



$$\begin{array}{r} 8 \\ 8 \\ \hline \end{array}$$

48

÷

8



Module 13: Concepts of Division

Vocabulary Cards

divide/division

dividend

division sign

divisor

equal groups

equal sign

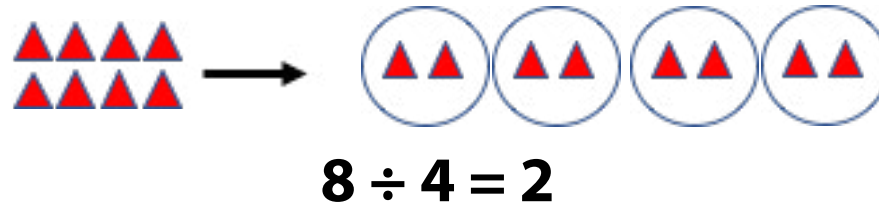
partitive division

quotative division

quotient

divide/division

To separate into equal groups or among groups.



dividend

The number to be divided.

$$16 \div 8 = 2$$

16 is the **dividend**

division sign

The symbol that tells you to divide.

$$16 \div 8 = 2$$

\div is the **division sign**

divisor

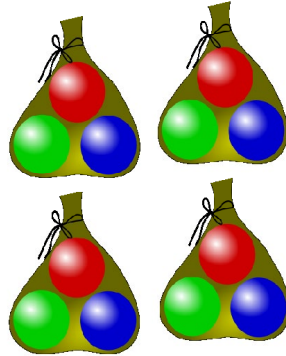
The number the dividend is divided by.

$$16 \div 8 = 2$$

8 is the **divisor**

equal groups

Groups with the same number of objects or items in each group.



equal sign

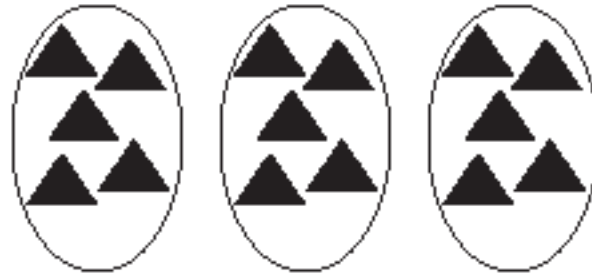
The symbol that tells you that two sides of an equation are the same, balanced, or equal.

$$16 \div 8 = 2$$

= is the equal sign

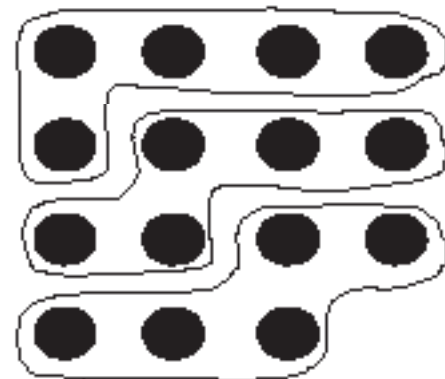
partitive division

A way of dividing where you share items into a pre-determined number of groups.



quotative division

A way of dividing where you measure a pre-determined amount of items into an unknown number of groups



quotient

The result when one number is divided by another number.

$$16 \div 8 = 2$$

2 is the **quotient**
