



Core Focus

- Division involving decimal fractions: dividing a decimal (or dollars and cents) by a whole number, by tenths, or by hundredths
- Division of decimal fractions by decimal fractions
- Creating, describing and interpreting frequency tables, two-way tables, side-by-side bar graphs, broken bar graphs and many-to-one dot plots

Division with Decimal Fractions

- Students begin to divide by decimal fractions. Students use real-world examples to solve problems involving sharing. They write equations to match the problems with the quotient or the divisor as a decimal fraction. Language such as “How many four tenths are there in 2 wholes?” is used to help interpret the latter sentence.
- The connection between division and multiplication is also used to provide meaning.

12.2

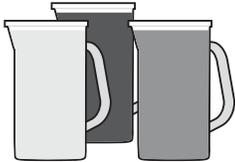
Step In Using Multiplication to Help Divide by Decimal Fractions

Three pitchers each hold a liter of juice.
Some small cups each hold one-tenth of a liter.

How many of these cups could be filled to use all the juice?

What operation will you use to figure out the answer?

What expression could you write to show the problem?



I could use division to figure out the number of cups.
 $3 \div 0.1 = ?$



I could also “think multiplication”.
 $? \times 0.1 = 3$

In this lesson, students “think multiplication” to interpret division by tenths.

- Students rewrite a problem involving division by a decimal as an equivalent problem where the divisor is a whole number to make the division easier. For example, $0.9 \div 0.3$ can be rewritten as $9 \div 3$, so the answer is 3. Multiplying both numbers in a division problem by the same number creates an equivalent equation. Language again plays an important role when exploring tenths divided by tenths.

12.6

Step In Renaming Decimal Fractions to Divide (Tenths by Tenths)

Anya has a ribbon that is 2.4 meters long.
She needs to cut the ribbon into lengths of 0.3 meters to make bows.

How many bows can she make?

We know we are dividing by 3 tenths.
We also know 2.4 m is 24 tenths.



It is much easier to divide by a whole number.
If possible, rewrite the problem so the divisor is not a decimal fraction.

Complete this statement to calculate the answer.

$2.4 \div 0.3$ has the same answer as $24 \div 3 = \square$

How would you figure out the quotient for this example? $0.8 \div 0.2 = ?$

Complete this statement to help figure it out.

$0.8 \div 0.2$ \rightarrow \square tenths \div \square tenths \rightarrow $\square \div \square = \square$

In this lesson, students rewrite equations involving tenths divided by tenths to show division by a whole number to make the division easier.

Ideas for Home

- Encourage your child to estimate a possible solution before beginning the division problem then draw pictures, use manipulatives or apply multiplication strategies to help complete division equations and algorithms. Reflect on the answer with your child by asking them to describe their working and discuss alternative strategies.
- Use real-life experiences such as cooking (weight or capacity) to create and solve situations involving division e.g. If a dozen eggs weigh 0.72 kg. How much would one egg weigh?
- Use sports activities and results to create and solve division problems. E.g. if Sue ran 4 miles in forty minutes, how long did it take her to run 0.5 miles?

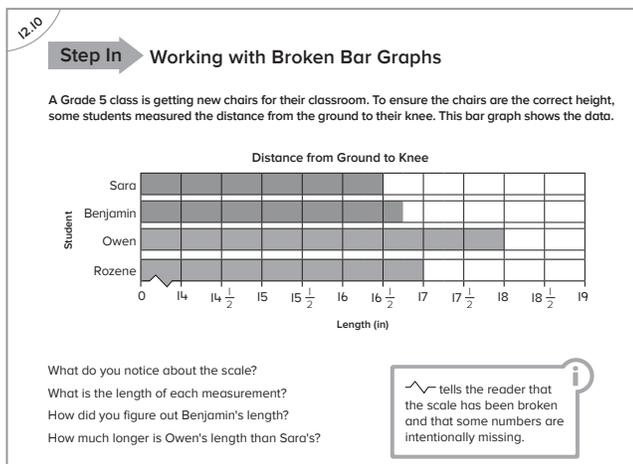
Glossary

- Using “missing factor” thinking helps to interpret division by tenths.

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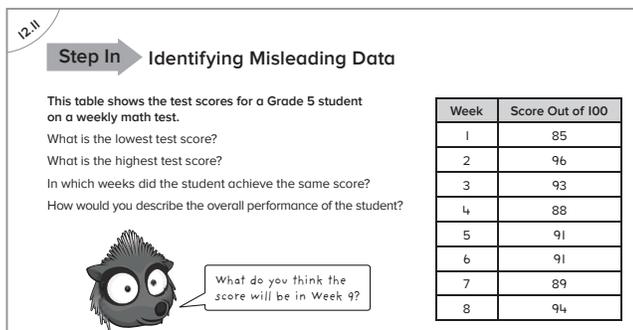
Data

- The final lessons in this module involve students creating, describing and interpreting data based on real-life interests and activities.
- In earlier grades, students gathered information and used bar graphs, picture graphs and line plots to record and summarize this data. These lessons continue to build on the skills and concepts essential for representing data in meaningful and sophisticated ways.
- It is important that students spend as much time analyzing and interpreting data as they do collecting and recording data.



In this lesson, students show personal data (such as ground to knee length) in a broken bar graph.

- All graphs can be distorted and consequently do not always convey clearly the information on the graph. Sometimes this can be done intentionally.



In this lesson, students discuss some ways that data can be misleading.

Ideas for Home

- Try keeping a nutrition chart on what the family consumed each day, for a week, which might lead into tracking money spent on groceries for the week and where money can be saved. Record information about screen time on different electronic appliances in comparison to other relaxation activities, compare and discuss results. Collect and record holiday information about the miles traveled each day, money spent each day each day, weather and temperatures each day and interesting facts about population and history.
- Look through magazines and newspapers to find different graphs and diagrams. Discuss what data is being represented, why you think that type of graph or diagram was chosen and whether other graphs or diagrams could be used or would more suitable.

Glossary

- **Frequency tables** can be used to display the frequency of occurrence.
- **Two-way tables** can be used when sorting or organizing data that has two distinct variables (a two-way sort).
- **Side-by-side bar graphs** use bars arranged vertically or horizontally to display data grouped into categories.