(3) Tenths and Mixed Fractions (p. 10)

- Express a 1-place decimal as a fraction in its simplest form.
- Compare and order numbers of up to one decimal place.

Remind your student that the simplest form of a fraction is the equivalent fraction where the denominator is as small as you can make it.

Ask her to write 0.5 as a fraction in its simplest form.

$$0.5 = \frac{5}{10} = \frac{1}{2}$$

Learning Task 9, p. 10

9. (a) $\frac{1}{5}$ (b) $1\frac{1}{5}$ (c) $\frac{4}{5}$ (d) $2\frac{4}{5}$

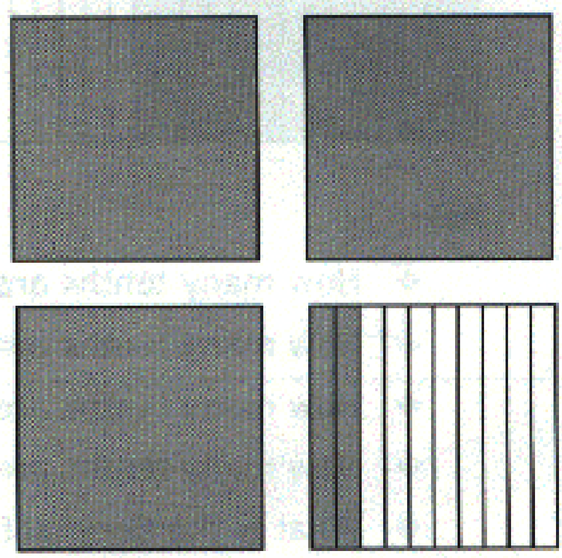
Eventually, your student should be able to recall certain common decimal/fraction equivalencies. If he remembers the decimal for the unit fraction, he can find the others with the same denominator by multiplication:

$\frac{1}{2} = 0.5$

$\frac{1}{5} = 0.2$; therefore $\frac{2}{5} = 0.4$ (2×0.2), $\frac{3}{5} = 0.6$, $\frac{4}{5} = 0.8$

Write the numbers

2 and 1.2



Ask your student which is larger. 2 is larger even though it has only one digit. Illustrate with **fraction squares** or with base-10 blocks where the 100-flat is one and the 10-rod is one tenth. Caution your student that with decimals we need to pay attention to the place value of each digit when comparing numbers, and not the number of digits. 12 is larger than 2, but 1.2 is smaller than 2 because there is only one whole rather than two. We can think of 2 as 2.0. Your student can write the numbers being compared vertically, aligning the decimals, and then compare each place, starting from the largest place value.

2
1.2
2.1

Part 2 Division

(1) Division of Compound Units (pp. 70-71)

- Divide length, weight, volume, and time in compound units.

Page 70

Discuss this problem with your student.

5 m 20 cm ÷ 4

We divide the value for the larger measure first to get an answer in a whole number with a remainder. — 5 m ÷ 4 = 1 m with remainder 1 m

4 meters have been divided. 1 meter and 20 centimeters remain. We convert the remainder and then divide. — 1 m 20 cm = 120 cm; 120 cm ÷ 4 = 30 cm

The final quotient is both parts. — **1 m 30 cm**

In this problem the larger unit was at least a multiple of the divisor. If it is not, then we convert and then divide. Give your student an example of this:

3 yd 3 ft ÷ 4

First, convert the yards to feet — 3 yd = 9 ft

Then, divide all the feet. — 9 ft + 3 ft = 12 ft; 12 ft ÷ 4 = 3 ft

At this stage, problems using US standard units will work out so that the smaller unit is a multiple of the divisor. But in some cases we can go to a smaller unit.

3 yd 4 ft ÷ 4

Convert yards to feed and add it to the feet. — 13 ft ÷ 4

We can have an answer that is a fraction of a foot, or convert to inches and try to divide. — 3 ft remainder 1 ft; 1 ft = 12 in.; 12 in. ÷ 4 = 3 in.; 3 yd 4 ft ÷ 4 = 3 ft 3 in.

In *Primary Mathematics 5A*, the student will learn to express the remainder as a fraction. At this level, the exercises won't require expressing the quotient as either a fraction or a decimal when dealing with measures.

Part 2 Volume of a Cuboid

(1) Volume (pp. 93-96)

> Find the volume of a cuboid given its length, width, and height.

A cuboid is a rectangular prism, or box shape.

In *Primary Mathematics 3B*, students learned to find the area of a rectangle given its length and width. Here, they will learn to find the volume of a rectangular solid given the length, width, and height.

	Write
Use multilink cubes or unit cubes. Form a single layer rectangle and ask your student for the volume. For example, make a rectangle with the cubes that is 4 by 3. The volume is 4 x 3 = 12 cubic units.	4 x 3 = 12
Point out that the height is 1 unit.	4 x 3 x 1 = 12
Add another layer and ask for the volume. Since we know how much is in one layer, we can find the number in both layers by multiplying. The volume is 12 x 2 = 24 cubic units.	4 x 3 x 2 = 24
Add another layer and ask for the volume. There are now 3 layers with 12 in each layer. The volume is 12 x 3 = 36 cubic units.	4 x 3 x 3 = 36
Continue until there are 5 layers. The final volume is 60 cubic units.	4 x 3 x 4 = 48 4 x 3 x 5 = 60
The length is 4 units, the width 3 units, and the height 5 units. We can find the volume by multiplying these measurements together.	Volume = length x width x height = 4 units x 3 units x 5 units = 60 cubic units

Point out that the order in which we multiply the sides does not matter. In the above example, it might be easier to mentally calculate the volume if we multiply the length by the height first.

4 x 3 x 5 = 4 x 5 x 3 = 20 x 3 = 60