Unit 4 – Multiplication Tables of 6, 7, 8 and 9

Objectives for the unit:
- Learn the multiplication and division facts for 6, 7, 8, and 9.
- Multiply numbers up to 1,000 by 6, 7, 8, or 9.
- Divide numbers up to 1,000 by 6, 7, 8, or 9.

Suggested number of lessons: 22

Part 1 : Looking Back				**1 lesson**
	Objectives	**Textbook**	**Workbook**	**Activities**
47	▪ Review facts for multiplication and division by 2, 3, 4, 5, and 10. ▪ Double numbers within 100 mentally.	pp. 68-69	Ex. 28	4.1a 4.1b 4.1c

Part 2 : Multiplying and Dividing by 6				**5 lessons**
	Objectives	**Textbook**	**Workbook**	**Activities**
48	▪ Determine new facts for multiplication by 6 from known facts. ▪ Learn facts for multiplication by 6 (four new facts).	pp. 71-73, tasks 1-3	Ex. 29	4.2a 4.2b
49	▪ Relate division by 6 to multiplication by 6. ▪ Learn facts for division by 6.	p.70 p. 73, task 4	Ex. 30	4.2c 4.2d
50	▪ Multiply numbers within 1000 by 6.	p. 74, tasks 5-6	Ex. 31	4.2e 4.2f
51	▪ Divide numbers within 1000 by 6.	p. 74, tasks 7-8	Ex. 32	4.2g 4.2h 4.2i
52	▪ Review.	p. 75, Practice 4A	Ex. 33	4.2j

Part 3 : Multiplying and Dividing by 7				**6 lessons**
	Objectives	**Textbook**	**Workbook**	**Activities**
53	▪ Determine new facts for multiplication by 7 from known facts. ▪ Learn facts for multiplication by 7 (three new facts).	pp. 76-79, tasks 1-4	Ex. 34	4.3a 4.3b 4.3c
54	▪ Learn facts for division by 7.	p. 79, task 5		
55	▪ Multiply numbers within 1000 by 7.	p. 79, task 6	Ex. 35	4.3d
56	▪ Divide numbers within 1000 by 7.	p. 79, tasks 7-8	Ex. 36	4.3e 4.3f
57	▪ Review.	p. 80, Practice 4B	Ex. 37	4.3g
58	▪ Review.	p. 81, Practice 4C	Review 4	4.3h

Part 1: Looking Back (pp. 68-69) — 1 lesson

Objectives

- Review multiplication and division by 2, 3, 4, 5, and 10.

Materials

- Blank multiplication chart
- Filled in multiplication chart
- Blank multiplication charts for students
- Number cards 1-9, 4 sets per group

Homework

- Workbook Exercise 28

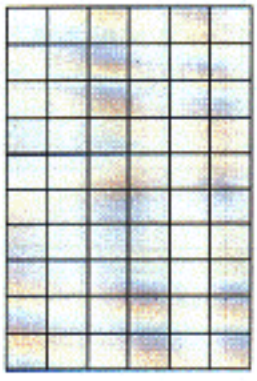
Notes

Students should know the multiplication and division facts for 2, 3, 4, 5 and 10 by now. They are briefly reviewed in this section.

Students learned in *Primary Mathematics 2* that they can double a number (5 + 5) to find 2 times that number (5 x 2 or 2 x 5). They can double the product of 2 times a number to get 4 times that number (double the double). In this unit, they will learn that they can double the product of 4 times a number to get 8 times that number and the product of 3 times a number to get 6 times a number. So, if they know 3 x 6 is 18, they can double 18 to get 6 x 6. Doubling a number involves mental math. In doubling 18, they have to mentally double the 10 to get 20, double the 8 to get 16, and then add 20 and 16 [18 x 2 = (10 x 2) + (8 x 2)]. In one of the activities in this section, students will practice mentally multiplying a 2-digit number by 2 (doubling it). This process can be extended for more capable students to mental multiplication of any 2-digit number by a 1-digit number. For example: 39 x 5 = 150 + 45 = 195.

As the students go through the sections for multiplying and dividing by 6, 7, 8, and 9, they can practice the math facts with games or other fact practice.

Activity 4.2a
Class activity
Learn facts for multiplication by 6.



1 x 6 = 6	6 x 1 = 6
2 x 6 = 12	6 x 2 = 12
3 x 6 = 18	6 x 3 = 18
4 x 6 = 24	6 x 4 = 24
5 x 6 = 30	6 x 5 = 30
6 x 6 = 36	**6 x 6 = 36**
7 x 6 = 42	**6 x 7 = 42**
8 x 6 = 48	**6 x 8 = 48**
9 x 6 = 54	**6 x 9 = 54**
10 x 6 = 60	6 x 10 = 60

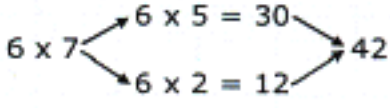
- Give students some centimeter graph paper and have them color in 10 rows of 6. Or, give them dot stickers and have them put ten rows of 6 in their journals.
- Have students look at the **text p. 73, task 3** and copy the equations into their journals as you write on the board. Get students to supply the products. They can do this by counting by 6's. They should realize that each fact is 6 more than the one before, and 6 less than the one after. Point out that they will be learning 4 new facts.
- Have students practice counting by 6's.
- Use **text pp. 71-72, tasks 1-2** to discuss methods for finding some of the multiplication facts. Illustrate with the overhead strips of 6 so you can add or remove 6's.

Task 1(a) 4 x 6 can be found by doubling 6, and then doubling again: 6, 12, 24.

Task 1(b) 5 x 6 and 6 x 5 can be found by counting by 5's: 5, 10, 15, 20, 25, 30. You can point out that an odd number times 5 gives a product that ends with 5, whereas an even number times 5 gives a product that ends with 0. The ten is half the even number. Half of 6 is 3, so the product of 5 and 6 is 30.

Task 2(a) 6 x 6 is 6 more than 6 x 5.
6 x 5 = 30
6 x 6 = 30 + 6 = 36

Task 2(b) Split 6 x 7 into 2 products.
They can also split it differently, such as 6 x 3 and 6 x 4. Let them try this. It is easier to add 12 to 30 than to add 18 and 24.



You can ask students to find 6 x 6 by splitting into two parts other than 6 x 5 and 6 x 1. Some students might suggest 6 x 3 and 6 x 3. Point out that they are doubling 6 x 3 to get 6 x 6. They can try this with the other facts:
6 x 6 = double 3 x 6 = double 18 = 36
7 x 6 = double 3 x 7 = double 21 = 42
8 x 6 = double 3 x 8 = double 24 = 48
9 x 6 = double 3 x 9 = double 27 = 68

Task 2(c) 6 x 8 can also be split into two parts. Students can try different combinations. It is easiest to split it into 6 x 4 and 6 x 4 and double 24. Put down one strip of 6. Ask them to double it. That gives 6 x 2. Ask them to double it again. That gives 6 x 4. Ask them to double it a third time. That gives 6 x 8. Tell them they can find 6 x 8 by doubling 6 three times: 6, 12, 24, 48. (Other methods for finding 6 x 8 by adding 8 to 5 x 8 will be given in a later section.)

Task 2(d) Display 10 strips of 6. Ask for the total. Write 6 x 10 = 60. Remove 1 strip of 6. Ask students to subtract to find the new total. 60 – 6 = 56. This is the same as 6 x 9.

- Provide opportunities for students to practice the facts, particularly the new ones.