Student Guide

Making Teams (SG pp. 62–63)
Questions 1–9

1. * 9 teams $\times$ 2 students = 18 students

2. * 6 teams $\times$ 3 students = 18 students

3. * 4 teams $\times$ 4 students + 2 leftover students = 18 students

4. When 18 students are divided into teams of 3 students, there are not any leftovers.

When 18 students are divided into teams of 4 students, there are leftovers.

5. Possible response: Add the leftovers. For example; $4 \times 4 + 2 = 18$

6. Possible responses:
3 teams $\times$ 6 students = 18 students;
2 teams $\times$ 9 students = 18 students

7. 3 teams $\times$ 5 students + 3 students = 18 students

8. 9 teams of 2 students
6 teams of 3 students
3 teams of 6 students
2 teams of 9 students

9. * 1 and 18; $1 \times 18 = 18$ and $18 \times 1 = 18$ with no remainders.

Making Teams

Making Equal Teams of Students

Richard, Emily, Mark, Rosa, Jason, and Mara are students in Mrs. Hunter's class. Their teacher asked them to form teams of two.

1. There are 18 students in Mrs. Hunter's class. Mark wrote the number sentence below to show how his class is grouped in teams of two. What do the numbers in his number sentence represent?

$9 \times 2 = 18$

2. Group the 18 students in Mrs. Hunter's class in teams of three. Write a number sentence to show how the students are grouped into equal teams.

3. Group the 18 students in Mrs. Hunter's class in teams of four. Write a number sentence to show how the students are grouped into equal teams.

4. What is different about the teams of three students and the teams of four students in Mrs. Hunter's class?

5. How did you show leftover students in your number sentence?

6. Mrs. Hunter wants more students on each team, but she does not want any leftovers. Choose a different number of team members. Write a number sentence to show how the students are grouped into teams.

7. Mrs. Hunter decides that the teams are too big and allows students to be left over. Choose a different number of team members. Write a number sentence to show how the students are grouped into equal teams with some leftover students.

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Finding The Factors of 18

Mrs. Hunter displayed a table showing all of the ways her students had arranged their classroom into teams. In the table, Mrs. Hunter defined the leftover students as the **remainder**. Mrs. Hunter asked the students if they noticed any patterns in the table.

Mrs. Hunter's Class Teams Table

Number of Teams	Team Size	Remainder	Number Sentence
9	2		$9 \times 2 = 18$
6	3		$6 \times 3 = 18$
4	4	2	$4 \times 4 + 2 = 18$
3	5	3	$3 \times 5 + 3 = 18$
3	6		$3 \times 6 = 18$
2	7	4	$2 \times 7 + 4 = 18$
2	8	2	$2 \times 8 + 2 = 18$
2	9		$2 \times 9 = 18$

Richard and Rosa studied the table. They noticed that there were four ways to make teams that did not have any remainder.

8. Look carefully at the table. What are the four ways that Richard and Rosa found to make teams without remainders?

Mrs. Hunter circled the number sentences $9 \times 2 = 18$, $6 \times 3 = 18$, $3 \times 6 = 18$, and $2 \times 9 = 18$ on the table. She explained that 9, 2, 3, and 6 are factors of 18. **Factors** are the numbers you multiply together to get a product. A factor of a number can also divide a number into equal-size groups without leftovers.

9. Mrs. Hunter listed 2, 3, 6, and 9 as factors of 18. There are two more factors of 18 that she did not list. What are the other two factors of 18? Explain your answer.

Use the *Class Teams Table* in the *Student Activity Book* to find different ways to group the students in your class into equal teams. When you finish, see if you can find all of the factors for the number of students in your class.

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*Answers and/or discussion are included in the lesson.