

Divide and score

Dear teachers and parents

This week our game is aimed at the **Foundation Phase**. We are looking at the concept of division, also referred to as **sharing** (sharing a number of items between a number of different things or people) and **grouping** (how many groups can you make from a given number?).

In this phase children are expected to solve **practical** problems involving the sharing and grouping of numbers, including problems with remainders (how many are left over?). Remainders can be whole numbers or fractions. Physically manipulating **concrete objects** is the best way to grasp this concept. Children need lots of experience with sharing out physical objects and expressing what they are doing in **words** and then, only later, in **symbols**. Provide problems that children must solve, for example:

- Divide children into groups of five and give each group a box of 10 pencils. Ask them to figure out how to divide up the pencils so everyone gets the same number of pencils
- Make a pizza from cardboard – have eight slices. Ask children to share the pizza among four children, then six children. How may each?

In the concept of **grouping**, we look at how many groups can be made. For example, how many groups of five are there in 20? This links with the idea that division is the **opposite** or **inverse** of multiplication.

The example of $4 \times 5 = 20$ requires some understanding:

- Four lots of five make 20: $4 \times 5 = 20$
- Five lots of four make 20: $5 \times 4 = 20$
- There are five groups of four in 20: $20 \div 4 = 5$
- There are four groups of five in 20: $20 \div 5 = 4$
- If you share 20 things between four people, they will have five things each: $20 \div 4 = 5$
- If you share 20 things between five people, they will have four things each: $20 \div 5 = 4$

Score a goal!

A game for two players

You will need:

- 2 dice
- 6 stones or other big counters (players)
- 36 buttons or other small counters (balls)
- A coin

How to play:

1. Place the stones and the buttons in piles near both players.
2. Each player can decide which side they will score on – by tossing a coin (heads or tails).
3. The first player throws a dice – to decide on the number of **soccer players** in the field. If, for example, a 4 is thrown, then the player places 4 stones in the field, arranged in different positions.
4. Then the same player throws the 2 dice together. Both numbers on the dice are then multiplied together to get a new number. This is the number of **balls** on the field. For example, if a 4 and a 5 are thrown, then $4 \times 5 = 20$. So, 20 buttons are then placed on the field.
5. Now the player has to share or divide the balls with the number of soccer players. Following from the example above: Divide **20** balls with 4 soccer players: $20 \div 4 = 5$. Each soccer player should get **5** balls each.
6. If there are any balls (buttons) left over (remainders), they can simply be returned to the pile after the player has explained what happened, for example, I had 4 players and 9 balls, so each player got 2 balls and I had 1 left over.
7. Once the player has worked this out and the other player agrees with the answer, the player may “shoot” one ball (button) from each soccer player through his/her opponent’s goal. Each goal that gets through earns a point.
8. Clear the field.
9. Now the second player has a turn to throw the dice and play the game.
10. After an agreed number of turns, the player with the most goals is the winner.

