Understanding football

"A day without football is a day lost" – this is true for many of us. Football is one of the most popular sports in the world. It is played and followed in nearly every country and the enthusiasm for football is immense. Although football is a mass sports, the rules are not always so easy to understand. This is also true for the understanding of football league tables. How can you follow and understand the performance of your favourite football club using the football league table?

Overview "UNDERSTANDING FOOTBALL"

How to understand a football league table?

Context
Everyday life
Recreation

Cognitive processes
Analysing situations
Processing information
Mathematising

Target group (incl. necessary prior skills and competences)

Adults and young learners with basic arithmetical skills and who are interested in football

Content
Quantity and number
Pattern, relationship and change

Dispositions
Motivation
Affection
Beliefs

Outcomes and results

The learners understand mathematical symbols. They can read football tables, and they possess also the vocabulary to discuss it.

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Main information

Content	Natural numbers Basic arithmetic operations (addition, subtraction, multiplication) Percentages
Target group	Adults and young learners who • are interested in football • master the multiplication tables • are proficient in basic math operations like addition, subtraction, and written multiplication
Learning intention	What is the intention of adults to face this problem? – Numeracy for personal and private purposes – Numeracy to understand society
Duration	Approx. 4 lessons
Material and resources	Picture cards showing tables, diagrams and statistics; flip chart paper, flip chart markers, magnets in 3 colors
Group size	Range from 8 to 10 learners; playing in teams: 4 to 5 learners
Problem statement	In the world of football, many facts (such as ball possession) are presented in percentages. However, many learners have little understanding of what percentage values mean. In media such as newspapers, the internet, and television, football tables are used to illustrate where football clubs stand in a championship. They serve not only to visualize the current ranking but also to show which teams are eligible for promotion to higher leagues or which ones are relegated. Many people are unfamiliar with how to read these football tables. This requires mathematical skills such as mastering multiplication tables and basic arithmetic operations.
Working questions	How much is 50%? How do you read a football table? How are the points in a football table awarded? How do you read a statistic? How do you read a diagram?

Learning outcomes and results	The learners acquire an understanding of percentages and mathematical symbols. They can read and comprehend a football table and possess the vocabulary to discuss it. Additionally, they are capable of understanding how the points on the table are generated. They can calculate missing numbers using basic arithmetic operations.
Reference to National Qualification Frame	Optional (country's decision)

Working plan

Time (minutes)	Description of content/activities	Material	Methodical and didactic information[1]
50‘ +	**Activation** **„A day without football is a day lost.”** **(Ernst Happel, Austrian football trainer)** The trainer shows a picture of a football in the goal. At the beginning, the learners are asked to freely associate what comes to their mind regarding football. In a second step, the trainer asks questions (as in appendix 1). According to their answers, the learners are directed to 2 opposite sides. After each question, the learners have to decide which percent image card fits each side. The mathematical symbols > and < are explained using illustrative examples. The concept of percentages is introduced. To illustrate that the value of 50% always depends on the initial number, the questions are repeated with reduced numbers of people.	Picture of a football, Questions (Appendix 1) Percent image cards (Appendix 2)	Questioning Collaborative learning
50´+	**Reading a football table** The trainer explains what can be interpreted from a football table (the allocation of points for a win, a draw or a loss). Other important terms are discussed (promotion, relegation, league leader, bottom of the table, goal difference, …)	Football league table with questions (Appendix 3)	Explicit teaching

[1] for description and explanation of kinds of tasks, HITs and other background information please consult the teachers’/user’s guide

50´+	**Completing information** The learners work in pairs or in small groups. Using the acquired knowledge about point allocation, they calculate – without using the previously discussed table – which numbers should replace the red question marks in the table with the blanks. In a second step, the learners answer the 5 questions and discuss the answers in the plenary group.	Football league table with blanks to fill in (Appendix 4)	Collaborative learning Hands on learning
30´+	**Before and behind the line – who is involved?** The protagonists on and off the football field, along with their respective roles are discussed. The learners answer questions applying basic arithmetic, especially addition, to find correct mathematical approaches.	Listing of all protagonists on a football field, questions (Appendix 5)	Hands on learning
20´+	**1x1 football** The learners practice their multiplication skills playing a game: A flip chart with a pre-rawn football field is attached on the board. The learners are divided into two teams. Each team is assigned a color corresponding to one of the three magnetic colors on the board (as in appendix 6). The trainer asks questions according to the multiplication table. The team that knows the answer first moves a magnet to the next line. The team that gets all the magnets in the goals first, wins.	Flip chart with prew-drawn football field, Magnets in three colors (Appendix 6)	Multiple exposures Collaborative learning
	Transfer The learners can use the acquired skills to interpret tables and statistics from other areas of their everyday life.		

Suggestions for the teacher/user

The example presented here should be considered as exemplary and inspirational material presenting a guideline with a high range of possibilities of adapting those suggestions to a specific group of learners or an individual learner with his or her very personal requirements.

In concrete terms, the example (Understanding football) could be adapted these ways:

- Duration: Depending on the learners' prior knowledge about football, the duration of this example can vary. Some learners might know the vocabulary concerning the topic already very well while others need more time to get familiar with it.

  You can also pay more attention to the topic of "percentages" and offer exercises to other common values (25%, 75%,..)

- Further or additional material: The example can be adapted for other sports using league tables, such as ice hockey or basketball.

- Learning setting: In this example the teacher asks many questions to the learners. It is always possible to change the roles. One of the learners who has perhaps a great interest in football could be the trainer and ask his or her colleagues. This might be motivating.

Our educational activities aim at numeracy skills being not only memorized, but first of all being practiced and functionally used by the learners in daily life or/and vocational situations. It is therefore recommended to implement the idea of HITS[2] (higher impacts of teaching skills) as far and often as possible: ...

- ... work with concrete and authentic material that learners will recognize from everyday life situations. If the learners have a great interest in football, they can choose themselves examples of league tables.

- ... ask the learners questions and let them raise questions themselves. It can be crucial to discuss numeracy themes, contexts and numbers.

- ... think of possible ways of transfer: The acquired skills about percentages may help the learners in many everyday situations, such as understanding the saving on special offers (e.g. 50% off)

[2] For general information and explanation on HITS please see the teachers'/user's guide

Appendix 1

"A day without football is a day lost" (Ernst Happel, Austrian football trainer)

Source:Bild von jcomp auf Freepik

Possible questions the trainer could ask:

1. Who is a football fan?
2. Who has ever watched a football match on telvision?
2. Who has ever seen a football match in a stadium?
3. Who has a favourite football team?
4. Who plays football himself or herself?
5. Who knows the rules of a football match?
6. …

Appendix 2

$> 50\%$

$< 50\%$

Appendix 3

Reading football league tables

In the table below, as well as in all other tables of various leagues, are listed in order:

Position in the table - team - match round - wins - draws - losses - goals for - goals against- goal difference - total points

Points are awarded as follows: 3 points for a win

1 point for a draw

0 points for a loss

1 RB Salzburg	22	17	4	1	51	18	33	**55**
2 LASK Linz	22	13	7	2	40	19	21	**46**
3 Sturm Graz	22	7	10	5	26	23	3	**31**
4 Wolfsberger AC	22	7	9	6	32	31	1	**30**
5 Austria Wien	22	9	3	10	29	28	1	**30**
6 SKN St. Pölten	22	8	6	8	26	29	-3	**30**
7 SV Mattersburg	22	8	5	9	28	36	-8	**29**
8 Rapid Wien	22	7	6	9	26	29	-3	**27**
9 TSV Hartberg	22	7	5	10	35	45	-10	**26**
10 Admira Wacker	22	5	6	11	26	42	-16	**21**
11 SCR Altach	22	4	6	12	30	32	-2	**18**
12 Wacker Innsbruck	22	4	5	13	17	34	-17	**17**

Source: bearbeitete Grafik aus: ballverliebt.eu/2019/03/18/oesterreich-bundesliga-teilung-2019/

Questions:

1) How many points are there between the winner and the last team in the table?

2) Which team has scored the most goals?

3) Which team has conceded the most goals?

4) What is the maximum of points a football team can score in 22 rounds played ?

5) How many points has a team if all the matches end in a draw?

Appendix 4

Football league table with blanks

1 RB Salzburg	22	17	4	1	?	18	33	**55**
2 Lask Linz	22	13	7	2	40	19	21	**46**
3 Sturm Graz	22	7	10	5	26	23	?	**31**
4 Wolfsberger AC	22	7	9	6	32	31	1	**30**
5 Austria Wien	22	9	3	10	29	28	1	**30**
6 SKN St. Pölten	22	8	6	8	26	29	-3	**30**
7 SV Mattersburg	22	8	?	9	28	36	-8	**29**
8 Rapid Wien	22	7	6	9	26	?	3	**27**
9 TSV Hartberg	22	7	6	10	35	45	-10	**26**
10 Admira Wacker	22	5	6	11	26	42	-16	**21**
11 SCR Altach	22	?	6	12	30	31	-2	**18**
12 Wacker Innsbruck	22	4	5	13	17	34	-17	**17**

Source: bearbeitete Grafik aus: ballverliebt.eu/2019/03/18/oesterreich-bundesliga-teilung-2019/

Questions:

a) How many goals has scored the first team in the table, Red Bull Salzburg?

b) What goal difference has Sturm Graz?

c) How many goals has conceded Rapid Wien?

d) How often has SV Mattersburg played to draw?

e) How may wins did the penultimate team in the table have??

!! The original table can be used by the learners themselves to check whether they have found the right answers. !!

Appendix 5

Before and behind the line – who is involved?

Source: www.pixabay.com

Footballers in the field in the 1st division

- 2 goalkeepers
- 10 field players
- a maximum of 7 players on the substitutes' bench, including at least 1 substitute goalkeeper
- 2 linesmen
- 1 referee
- 1 substitute referee watching from the sidelines
- 3 VAR referees, who determine video evidence in an extra room if necessary

Questions:

1) How many people are on the pitch?

2) What is the maximum number of players on one team? And how many on both?

3) How many people in the 1st division ensure that the rules of the game are observed?

4) What is the maximum number of players and referees involved in a football match?

Solutions :

1) 23 (22 footballers and 1 referee)

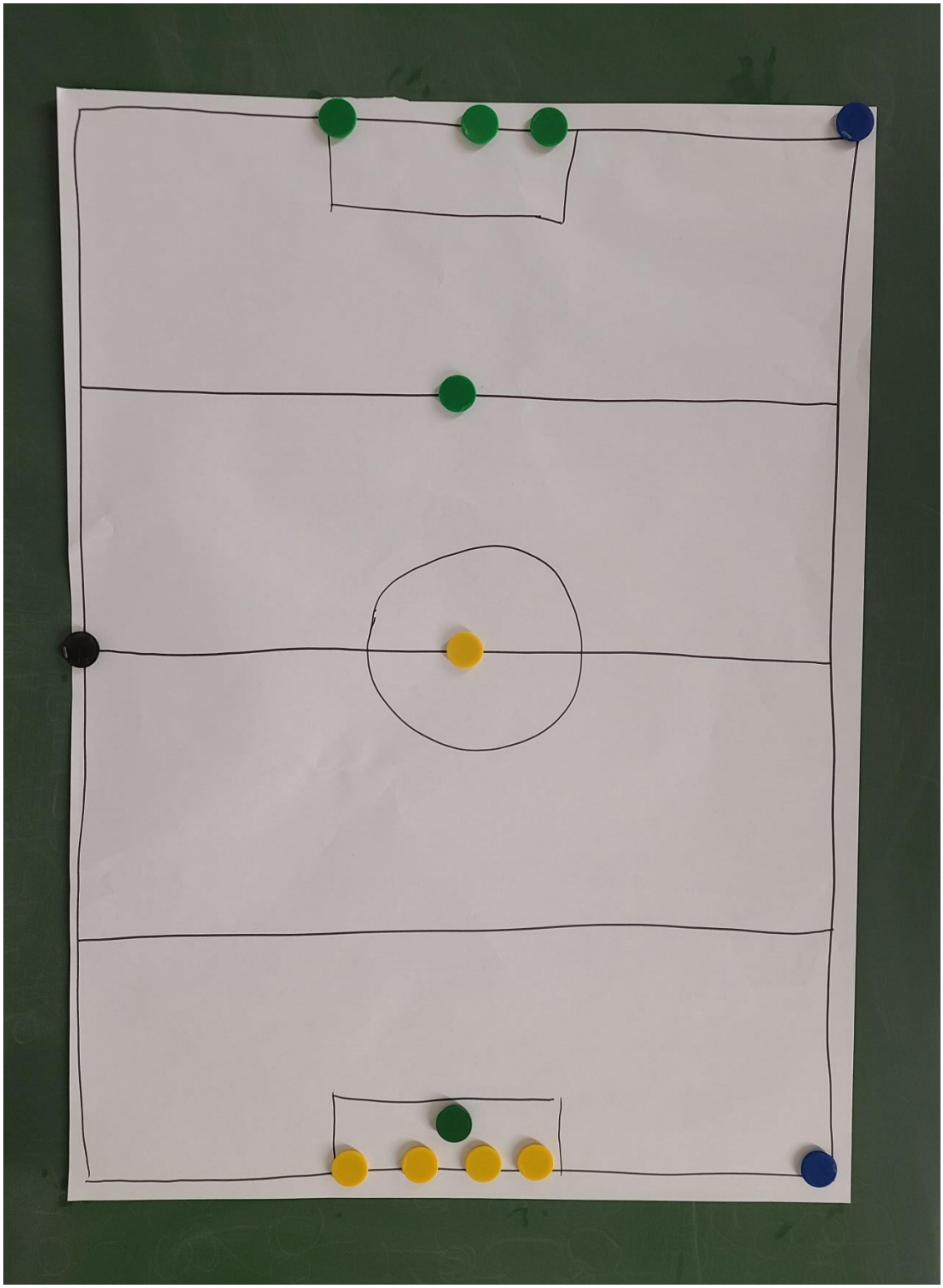
2) 18/36 players

3) 7 (1 referee , 2 linesmen , 1 substitute referee , 3 VAR referees)

4) 43 (36 players and 5 referees and 2 linesmen)

Appendix 6

Example flip chart: 1x1 football



Source: own photo

This material was produced in the Erasmusplus project Numeracy in Practice, projectnumber 2021-1-NL01-KA220-ADU-000 026 292. In this project, 11 partners in 11 countries worked together in designing, evaluating and improving the materials. All materials can be found on the website (www.cenf.eu).