Using numbers in hobbies and sports

Age range: 7-11

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Session overview

Time	Key learning outcomes	Resources
30-40 mins	By the end of this activity, pupils will be able to: • Understand how they already use maths in hobbies and sports • Understand that numbers are all around us and we may not always notice them	• Using numbers in hobbies and sports pupil worksheet

National Numeracy
Getting on with numbers

This lesson plan has been created in collaboration with National Numeracy, the independent charity that works to improve how people understand and work with numbers in everyday life, sparking better opportunities and brighter futures. nationalnumeracy.org.uk

This activity explores the value of maths and how it's useful in everyone's daily life, not just for school. The objective is to show pupils how they use maths in hobbies and sports outside of school. It also aims to demonstrate that numbers are all around us and they help us to do all the things we enjoy so having a good understanding of maths will help them beyond school.

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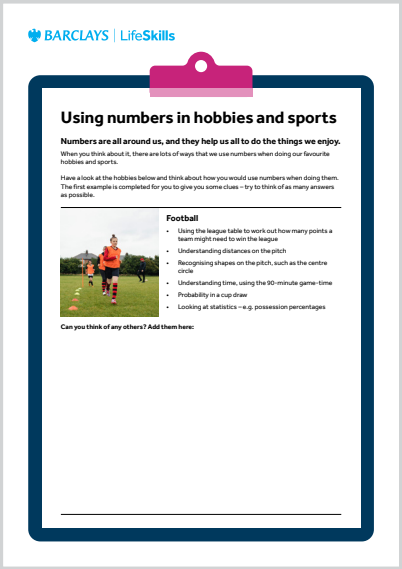
Using numbers in hobbies and sports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Using numbers in hobbies and sports

Numbers are all around us, and they help us all to do the things we enjoy.

When you think about it, there are lots of ways that we use numbers when doing our favourite hobbies and sports.

Have a look at the hobbies below and think about how you would use numbers when doing them. The first example is completed for you to give you some clues – try to think of as many answers as possible.

Football

- Using the league table to work out how many points a team might need to win the league
- Understanding distances on the pitch
- Recognising shapes on the pitch, such as the centre circle
- Understanding time, using the 90-minute game-time
- Probability in a cup draw
- Looking at statistics – e.g. possession percentages

Can you think of any others? Add them here:

Provide pupils with the Using numbers in hobbies and sports pupil worksheet. Explain to pupils that when we think about it, there are lots of ways that we use numbers when doing our favourite hobbies and sports. This activity will explore how we do that.

Start the activity by exploring the football example on the first page of the worksheet. As a class, read through the ways numbers are used when playing and watching football. Discuss together how else numbers are used and add their suggestions to the sheet.

To set up the rest of the activity, divide the class into small groups of two or three. The worksheet contains two pages with specified hobbies and sports so decide which scenarios to allocate to each group. There is space for pupils to record how maths and numbers are used for each.

Ask the groups to discuss their allocated hobby using their worksheet and together come up with as many ways as possible that this hobby uses maths. Pupils should record their ideas in the box on the worksheet.

Following their discussion in small groups, ask some of the pupils to share a few things they have discussed with the rest of the class. The groups can then repeat the activity and record their ideas for the other hobbies.

Some pupils may struggle to come up with ideas straight away, but once they come up with a few, many more tend to flow. If you notice any groups struggling, try using the following pointers.

How is time used in this hobby?

Is money needed? To participate, buy things or make decisions?

Are tables, graphs or charts, such as league tables, used?

Would you need to measure anything – such as weight, height or length?

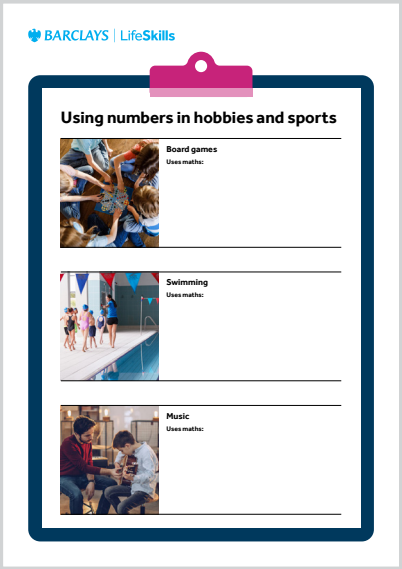
Where can you see shapes?

Are there any calculations needed? Is it useful to add things together or divide things up? Is a percentage or fraction needed anywhere?

This list is not exhaustive – but may prompt children in the right direction.

Activity one

Using numbers in hobbies and sports (cont'd)



Answers for the activity

Below are some possible answers for each of the hobbies outlined, but this is not a full list as there are many possible uses of maths in each activity. In general, any reasonable response should be encouraged.

Baking/Cooking

- Using different timings to ensure everything is ready at the right time
- Weighing and measuring ingredients
- Understanding recipes
- Changing ingredient quantities to bake products for the right number of people

Rugby

- Keeping track of the score
- Recognising players by their shirt numbers
- Using angles to kick for points
- Checking out where a club is in the league

Painting

- Mixing paint colours with the right ratios
- Measuring the right size canvasses and/or frames
- Understanding proportion and perspective to keep paintings lifelike
- Estimating the amount of paint needed to make sure there is enough of each colour

Board games

- Keeping score in Scrabble
- Using money in Monopoly – knowing when to buy a property and if you can afford it
- Understanding probabilities – what are the chances you would roll a double?
- Using coordinates in Battleships

Swimming

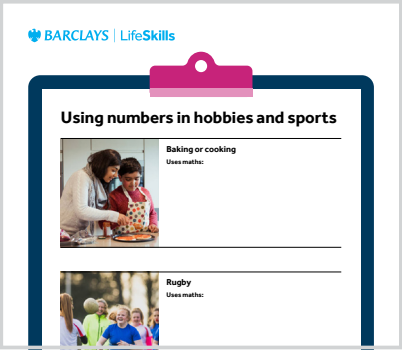
- Using time to measure how fast you can go
- Using distance to understand lengths and widths to achieve your badges
- Making sure you get to the gala on time with enough time to get changed
- How long do you allow to prepare for the race?

Music

- Counting beats and keeping time
- Understanding fractions used to indicate lengths of notes
- Planning and scheduling rehearsals
- Planning how many songs can be played at a show

Activity one

Using numbers in hobbies and sports (cont'd)



Simplified delivery option

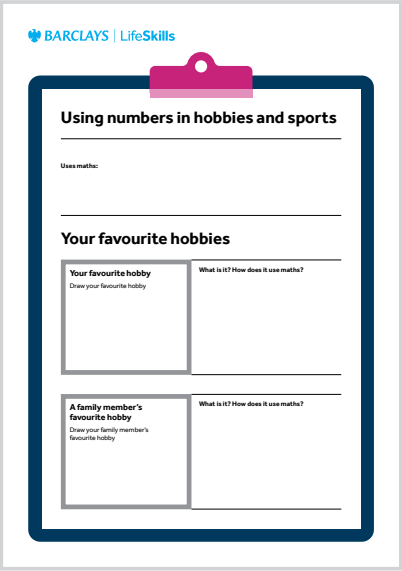
For pupils who are likely to struggle with this activity, you could choose to direct them to a hobby they are more familiar with or one where the use of maths is more straightforward such as Baking or Rugby.

Increased challenge delivery option

For any groups of pupils that are working through the activity quickly, you may like to think of some other hobbies not covered on the worksheet to give them to complete in the same way – thinking of as many ways as possible of how maths is used.

Activity two

Activity two: Your favourite hobbies



Now ask pupils to reflect on their favourite hobby, ideally something different to the one they explored in activity one that they enjoy doing in their spare time and then ask them to identify as many ways as possible of how maths is used. They should use the pupil worksheet to draw their favourite hobby and how it uses maths, and if time allows a family member's favourite hobby also.

To finish this lesson, ask students to reflect on what they have learnt. Has anyone realised how they already use maths while doing some of their favourite hobbies? Was anyone surprised by some of their observations? Remind them that maths exists around us in everything that we do and it can be a lot of fun to learn about.