



**Title**

**Austrian Saher cake and fractions**

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**Table of activities**

<b>School subject</b>	<i>Mathematics</i>
<b>Topic</b>	<i>Fractions</i>
<b>Age</b>	<i>12 years</i>
<b>Required time fo the acitivity</b>	<i>90 minutes</i>
<b>Required materials</b>	<i>Saher cake, pen, paper</i>
<b>Cultural concept</b>	<i>Austrian traditional Saher cake</i>



# Education Resilience in Europe

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## Teaching concept

Introducing fractions through real-world situations can be an effective method for students to understand this mathematical concept. For instance, a round cake can be used to teach basic concepts such as identifying and comparing fractions, as well as more advanced topics like subtracting fractions.

## Cultural concept

Austria is a country with a long tradition in confectionery and its culture is interesting to explore.

## Mathematical concept

This lesson aims to teach students the fundamentals of writing fractions. Fractions are written as numbers such as one half  $\frac{1}{2}$  or three quarters  $\frac{3}{4}$ . Students need to understand that the denominator in a fraction represents the total number of equal parts into which a whole is divided, while the numerator indicates the number of those parts being considered. In other words, the numerator counts the parts and the denominator names them. The fractional line in a fraction is equivalent to the division symbol.

## Aim of activity

The objective of this activity is to help students develop proficiency in writing fractions and understand how this mathematical concept applies to real-life scenarios.

## Activities

This activity is consisted of two phases. The first phase is to observe the real-world situation which is following: Imagine celebrating your birthday in Austria. You would surely serve Saher cake to your guests. Sachertorte, as it is called in German, is one of the most popular Austrian chocolate treats. They usually make it in a round shape, so it is very easy to share with guests. And when we are talking about dividing the whole cake, fractions appear. How much is one half and one quarter of a cake? It is not difficult to conclude that it is three quarters of the cake. However, if we want to know how much  $\frac{1}{8}$  and  $\frac{5}{6}$  of a cake is, we need to think a little. To answer that question, we need to know how fractions are added. In this case, to add these fractions, it is necessary to reduce them to a common denominator, which is the lowest common factor of the numbers 6 and 8? It is 24. Therefore, we add  $\frac{3}{24}$  and  $\frac{20}{24}$  and get the result  $\frac{23}{24}$ , that is,  $\frac{23}{24}$  cakes. If the guests at the birthday party ate  $\frac{23}{24}$  of the cake, then at the end of the celebration,  $\frac{1}{24}$  of the cake remained, i.e., one small piece of cake.

Also, students could observe the following problem: "Do you know that if you eat one half of Saher cake, it's the same as if you ate two quarters of Saher cake or four eighths of Saher cake. How is it possible?"

The second part is that students color the parts of the circle that represents cake and give answers. In this part students observe the real Saher cake, share it according to the real-world tasks. Besides that, students explore the ingredients in the Saher cake and Austrian tradition of making this cake.

### Additional materials



Figure 1 The Saher cake



Figure 2 Part of the Saher cake is taken