



stem4math

# TOOTHPASTE



Name:

.....

Level/class:

.....

School:

.....

Date:

.....



## Engage

1- The kids below are talking about a well-known disease that affects the teeth - tooth decay.



*I've already had a teeth cavity because I drank from my cousin glass!*



*I like to brush my teeth because I stay with my mouth fresh!*



*I just brush my teeth when I eat sweets.*



*I don't have tooth cavities! Never had a toothache.*

What do you think?

2- After discussing this matter in class, Rui carried out an investigation and found a lot of news on the topic. Excerpts from the news are presented below.

**Dental cavities are the most common non-contagious disease in the world**

About 60 to 90 percent of school-aged children worldwide suffer from tooth cavities.

The causes of this oral disease include "an unhealthy diet, smoking, alcohol abuse and poor oral hygiene," says Miguel Pavão, a dentist and founder of Mundo a Sorrir.

Cavities are still responsible for 30 percent of people between the ages of 65 and 74 no longer having natural teeth.

Adapted from: <http://www.sabado.pt/ciencia---saude/vida-saudavel/detalhe/caries-dentarias-sao-doenca-nao-contagiosa-mais-comum-no-mundo>

**Cavities affect almost half of Portuguese children aged six**

Children up to six years of age should be examined annually by the dentist.

Although this number is lower than in 2006, at around 49%, there are still "great needs for treatment", since a percentage of children of this age and below have early childhood cavities, "the most serious tooth decay" which translates into total destruction of the teeth.

The study also shows that 47% of 12-year-olds have dental cavities, while in 18-year-olds that number rises to 67.6%.

Adapted from: <https://www.noticiasaoiminuto.com/lifestyle/842381/caries-afetam-perto-de-metade-das-criancas-portuguesas-com-seis-anos>

2.1 - Studies show that "47% of 12-year-olds have dental cavities." Explain the meaning of the expression 47%.

3- According to the news presented, refer three attitudes/behaviours that may be the origin of dental cavities.

#### 4 - And you? Do you have good oral hygiene?

There's a short questionnaire on oral hygiene below. Respond individually to the questions presented by placing a cross next to the option that you consider most appropriate.

##### Individual questionnaire on oral hygiene

<b>1. How often do you brush your teeth daily?</b>  <input type="checkbox"/> 0  <input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> More than 2	<b>2. What is the average time it takes you to brush your teeth?</b>  <input type="checkbox"/> Less than 1 minute  <input type="checkbox"/> Between 1 and 2 minutes  <input type="checkbox"/> More than 2 minutes
<b>3. Do you always brush your teeth after breakfast, lunch and dinner?</b>  <input type="checkbox"/> Yes  <input type="checkbox"/> No	<b>4. Do you eat sweets between meals?</b>  <input type="checkbox"/> Yes  <input type="checkbox"/> No
<b>5. How often do you go to the dentist?</b>  <input type="checkbox"/> 1 time per year  <input type="checkbox"/> 2 times a year  <input type="checkbox"/> Only when I have pain  <input type="checkbox"/> I have never been to the dentist	<b>6. Do you brush the surface of the tongue during oral hygiene?</b>  <input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> Sometimes
<b>7. Do you often rinse with water during washing?</b>  <input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> Sometimes	<b>8. How do you brush your teeth?</b>  <input type="checkbox"/> Use a toothbrush and toothpaste  <input type="checkbox"/> Use only a brush  <input type="checkbox"/> Use a toothbrush, toothpaste and floss



## Conclude

5- In a large group, collect the data from the different questions.

In a small group, organise and proceed to the treatment of the data referring to one of the questions (different by group).

Present the results to the class.

6- What conclusions can be taken regarding the oral hygiene of the majority of the students in your class?

Indicate suggestions for improving behaviour in the class.

Conclusions:

Improvement suggestions:

7- Make a list of attitudes/behaviours that you must keep to have good oral hygiene.



## Plan

Version A

We all know that good oral hygiene includes, among others, using toothpaste.

But what materials are needed to make toothpaste?

Start by reading the recipe that we propose to you.

*- Let's make toothpaste!*

### Ingredients

1 soup spoon of dried thyme	1 soup spoon of sage	Hot water	1 strainer
1 soup spoon of kaolin	1 drop of aniseed essential oil	2 drops of mint essential oil	Food colouring

### How to make

1. Make an infusion of thyme and sage:
  - Bring water to the boil;
  - Put the sage and the thyme in a glass and add very hot water;
  - Shake and wait to make a well-flavoured infusion.
2. Filter the infusion.
3. Put in the kaolin and 1 and a half teaspoons of infusion. Shake well until it forms a paste. If necessary, you can add more infusion or kaolin.
4. Add the aniseed and mint essential oils and shake again.
5. Add, if you like, 1 or 2 drops of food colouring and mix well.

☺ You can store your toothpaste in a tube or bottle for a few months.

☺ *Do not forget to brush your teeth every day!*



## Investigate

Research the properties of the materials used in this recipe to make toothpaste.

*Table 1: Materials used and their properties*

Sources consulted	Materials used (Examples)	Properties of materials



## create

Let's now carry out the practical activity to produce toothpaste.

For this, follow the recipe that we provide.

## Create your bookmarks

Draw and paint pictures related to oral hygiene habits in each rectangle.

Then you can cut it and use it as bookmarks!

*Let's make toothpaste!*

*Do not forget to brush your teeth every day!*

*Let's make toothpaste!*

*Do not forget to brush your teeth every day!*

*Let's make toothpaste!*

*Do not forget to brush your teeth every day!*





## Report

Now let's evaluate all the work done.

Let's fill in the report on the positive aspects of this project and the less positive ones and mention the difficulties that we experienced during the process.



We all know that good oral hygiene includes, among others, using toothpaste.

But what materials are needed to make toothpaste?

Research the materials needed to make toothpaste and some of their oral properties.

*Table 1: Materials used and their properties*

Sources consulted	Materials (Examples)	Properties of materials



## Plan

Now, propose a recipe for making your own toothpaste.

**How to make toothpaste?**

*Adapted from:*



## Create

Now, let's carry out a practical activity to produce toothpaste.

*- Let's make toothpaste!*

**Ingredients**

**How to make**

!

*Do not forget to brush your teeth every day!*

## Create your own bookmarks

Draw and paint pictures related to oral hygiene habits in each rectangle.

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