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# A big problem for Magalhães (Magellan): Food preservation (Students)

## Instructions

This task comprises two parts. In the first one, you will study the life and the aspects of science related with the Portuguese sea travelling era, on the 16th century. In the second one, you will have the opportunity of studying food preservation methods used in that era and currently in use and to compare both of them.

### 1. Read carefully the following texts:

“In 1519 Magellan and his fleet set sail from Seville, Spain, to find a water route to the Spice Islands in Indonesia, where the most sought-after commodities — cloves, pepper, and nutmeg — flourished. Most important, they were looking for a passageway, a strait, through the great landmass of the Americas that would lead them to these fabled islands..... With a fleet of five ships and more than two hundred men, they had set out in search of the Spice Islands. Three years later they returned with an abundance of spices from their intended destination, but with just one ship carrying eighteen emaciated men. They suffered starvation, disease, and torture, and many died, including Magellan, who was violently killed in a fierce battle” (Bergreen, 2004).

“Storing and preserving food have become one of the biggest challenges, since men started to travel by sea. During 16th Century, all ships would have the same food: “sailing cookie” – a salty, compact cookie, usually “spoiled due to cockroaches and bad smelling mould”.

At the ship, a steward would serve all men - soldiers, sailors and officials. All would get equal portions of food: 15 kilos of salty meat each month plus onion, vinegar and olive oil. However,

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captains could also bring with them chickens and sheeps and make use of it to improve their meals. During religious' fast-days, crew would be provided with rice, fish or cheese for substituting meat. Solid food would be distributed once a month – always raw. It would have to be boiled everyday, but the use of fire on the deck was a constant threat. Wine and water would be provided every morning. Each man was entitled to 1.4 litre of wine, which was stored in round 200 pipes in each ship. The same portion of water – for drinking and cooking, would also be provided (1.4 l). Water, stored in wooden barrels, would always be smelly and would cause diarrhoea and infections. During four weeks of travel, food would become rarer and by the end sailing cookies would be the only food remaining. There are no doubts that deficient food would kill as much as all sea dangerous”.

Adapted from “A comida matava tanto quanto os perigos do mar” de Eduardo Bueno published at <http://epoca.globo.com/especiais/500anos/990705.htm>

2. Food preservation was one of the biggest problems for sailors' during long trips. Imagine that your group is part of a scientific team studying food preservation at the time of Portuguese discoveries. To explore further this subject you have the opportunity to travel back until the time of Discoveries. You will play the role of a vessel captain assessor. Your mission consists of guarantying food preservation during the trip.

2.1 In order to prepare the trip, each group will make some research about this theme. Explore the following website to learn more about food preservation. Write the main ideas that will help your group playing the role of vessel captain assessor.

<http://www.understandingfoodadditives.org/>

2.2 As vessel captain assessor, plan and execute an experiment to study which of the following substances are more effective for meat/fish preservation: salt, vinegar, garlic or pepper.

2.3 Share the results of your experimental study with your class.

2.4 Based on the group findings, prepare some written guidelines to help with the trip. These must be focused on alternative ways to improve food preservation on XVI century.

2.5 Each group, share its findings with the rest of the class and write the main ideas reported by the whole class.

2.6 Each group writes a text with the information and knowledge it gained about methods of preserving food. The text should compares nowadays situation with the one lived by the

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Portuguese on the sea travelling era on the 16<sup>th</sup> century. Then, each group communicates to class their findings.

## **Bibliography**

Bergreen, L. (2004). *Over the edge of the world: Magellan's terrifying circumnavigation of the globe*. Harper Collins.

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