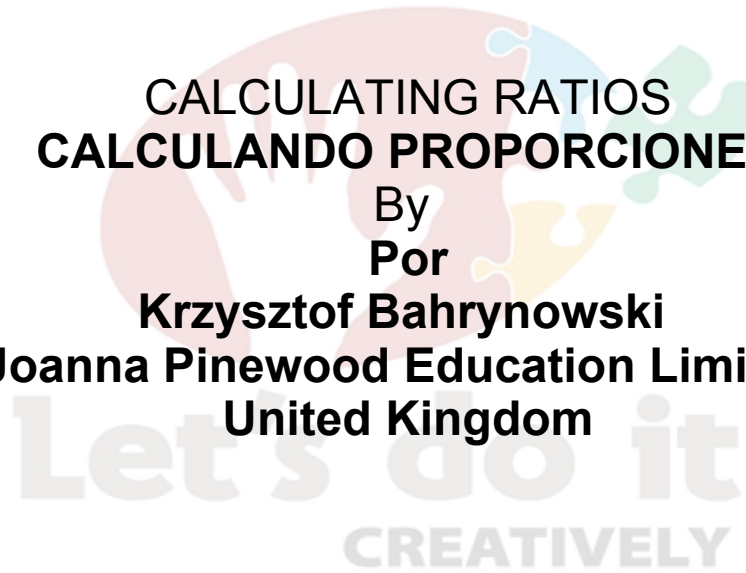




CALCULATING RATIOS CALCULANDO PROPORCIONES

By
Por

Krzysztof Bahrynowski
Joanna Pinewood Education Limited
United Kingdom



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



RATIOS IN COOKING LESSONS PROPORCIONES EN LA COCINA

Can you use and understand ratios? We use ratio everywhere in our lives. To work out currency, to check shopping receipts, to dilute garden pesticides and insecticides and when we use ingredients in the kitchen.

¿Puedes utilizar y entender las proporciones? Usamos proporciones en todos los sitios de nuestra vida. Para calcular el cambio, comprobar los recibos de la compra, diluir pesticidas de jardín e insecticidas. Y cuando usamos ingredientes en la cocina

A good example is the Biscuit, a sweet biscuit that you can make using any measurement. The Ratio Biscuit is made by mixing flour:sugar:water in the ratio of 3:2:1.

Un buen ejemplo es la proporción de la galleta, una galleta dulce que tu puedes hacer usando cualquier medida. La proporción se galleta se hace mezclando harina, azúcar y agua en la proporción 3, 2, 1.





RATIOS IN COOKING LESSONS PROPORCIONES EN LA COCINA

Can you use and understand ratios? We use ratio everywhere in our lives. To work out currency, to check shopping receipts, to dilute garden pesticides and insecticides and when we use ingredients in the kitchen.

¿Puedes utilizar y entender las proporciones? Usamos proporciones en todos los sitios de nuestra vida. Para calcular el cambio, comprobar los recibos de la compra, diluir pesticidas de jardín e insecticidas. Y cuando usamos ingredientes en la cocina

A good example is the Biscuit, a sweet biscuit that you can make using any measurement. The Ratio Biscuit is made by mixing flour:sugar:water in the ratio of 3:2:1.

Un buen ejemplo es la proporción de la galleta, una galleta dulce que tu puedes hacer usando cualquier medida. La proporción se galleta se hace mezclando harina, azúcar y agua en la proporción 3, 2, 1.





You take 3 cups of flour mix it with 2 cups of sugar and then add a cup of water. You mix a paste.

Coges tres tazas de harina mezclandolas con dos tapas de azúcar y entonces añades una taza de agua. Mezclas la pasta.

Any utensil can be used to measure the ratio: a cup, a yogurt pot, a jar.

Cualquier utensilio puede ser usado para medir la proporción: una taza, un tarro de yogur, una jarra

It does not matter what you use to measure the capacity.

No importa lo que utilices para medir la capacidad.





DO THIS YOURSELF: HAZLO TU MISMO:

In a recipe , the ratio of flour to currants is 5:1

En una receta, la proporción de harina y grosella es 5:1

(a) What is the ratio of currants to flour?

(a) ¿Cuál es la proporción de grosellas y harina?

(b) If you need 10 ounces of flour, how many ounces of currants will you need?

(b) Si necesitas 10 onzas de harina, ¿cuántas onzas de grosellas necesitarás?





RATIO IN COOKING PROPORCIONES EN COCINA

It is important to use the same order of ingredients and measures.

Es importante usar el mismo orden de ingredientes y de las medidas.

Hence "Ratio Biscuits" are :

Por lo tanto las proporciones de las galletas son:

-Flour: Sugar: Water

-Harina; azúcar; agua

-F:S:W

-H; A; Ag.

3:2:1

Let's do it
CREATIVELY





If the order of ingredients in a recipe are changed or the order of the ratio then the chef will find that the Recipe will not work or the taste will be different.

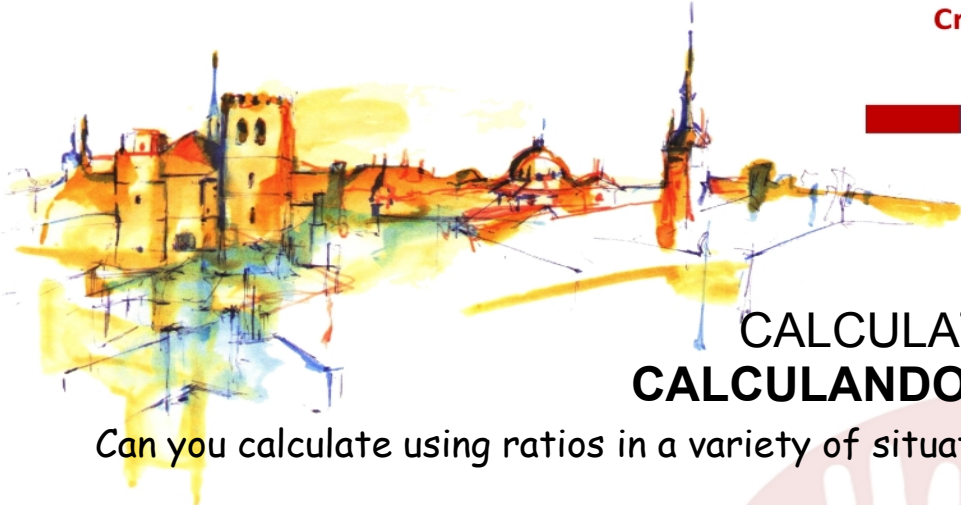
Si el orden de los ingredientes de la receta son cambiados o el orden de las proporciones entonces la receta no funcionará o tendrá un sabor diferente.

Place the mixture of a "ratio biscuits" as small circles on a metal tray and put in a hot oven. Leave the biscuit for ten or fifteen minutes.

Coloca la mezcla en pequeños círculos en una bandeja de metal y luego pongala en un horno caliente. Deja las Galletas durante diez o quince minutos.

CREATIVELY





CALCULATING RATIOS CALCULANDO PROPORCIONES

Can you calculate using ratios in a variety of situations?

¿Se puede calcular usando proporciones en una variedad de situaciones?

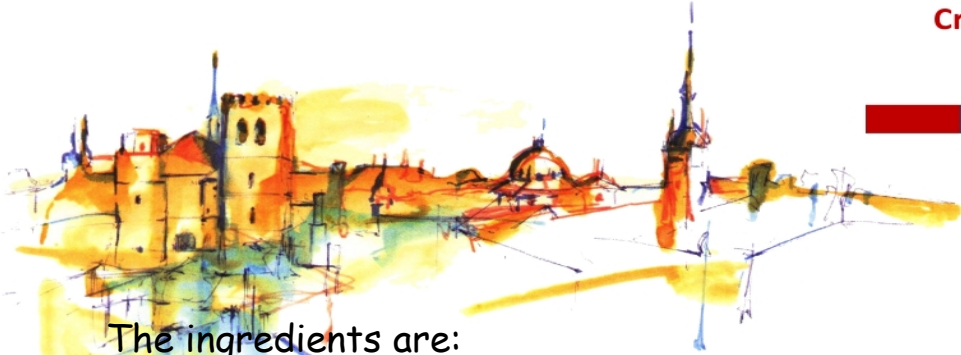
Mrs Smith has a recipe to make an apple pie for eight people. She wants to make an apple pie large enough to serve six people.

La señora Smith tiene una receta para hacer paste de manzana para ocho personas. Ella quiere hacer una pastel de manzana lo suficientemente grande para seis personas.

She divides the amounts by 8 to find out how much is needed for one person. She then multiplies by 6.

Ella divide las cantidades en ocho para saber cuanto se necesita para una persona. Luego las multiplica por 6.

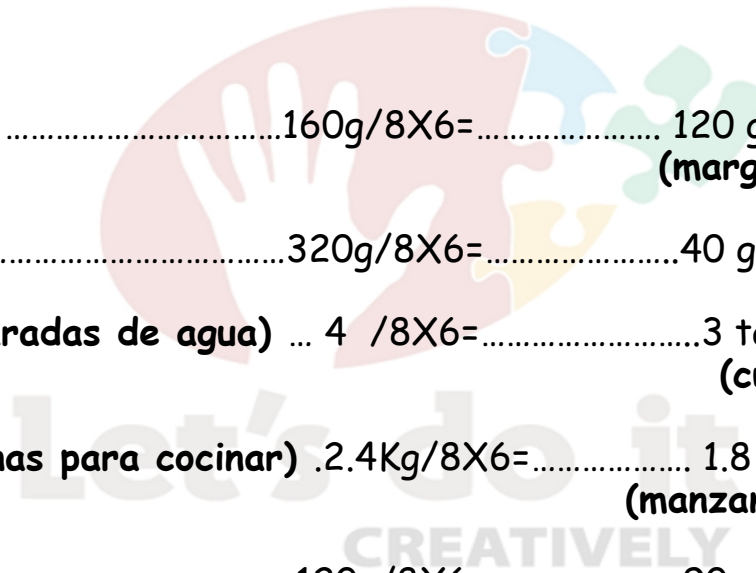




The ingredients are:

Los ingredientes son:

| | | |
|--|----------------|--|
| 160 g margarine (margarina) | 160g/8X6=..... | 120 g margarine (margarina) |
| 320 g flour (harina) | 320g/8X6=..... | 40 g flour (harina) |
| 4 tablespoon of water (cucharadas de agua) ... 4 /8X6=..... | | 3 tablespoons of water (cucharadas agua) |
| 2.4 Kg cooking apples (manzanas para cocinar) .2.4Kg/8X6=..... | | 1.8 kg cooking apples (manzanas para cocinar) |
| 120 g sugar (azúcar) | 120g/8X6..... | 90 g sugar (azúcar) |

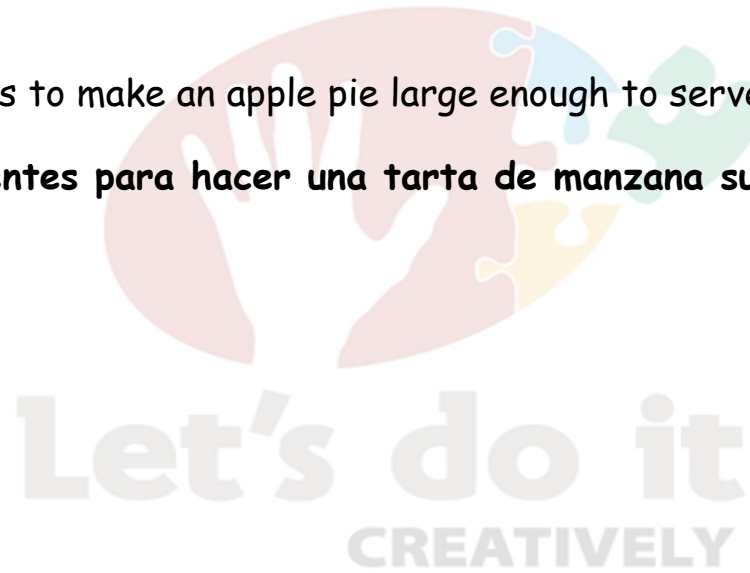




What are the ingredients to make an apple pie large enough to serve?

¿Cuáles son los ingredientes para hacer una tarta de manzana suficientemente grande para servirla?

- (a) 10 people?
- (a) 10 personas?
- (b) 5 people?
- (b) 5 personas?





The ingredients for rice pudding for 50 servings are given below:

Los ingredientes para el pudin de arroz para cincuenta porciones son los siguientes:

(a) One hundred fifty schoolchildren eat rice pudding one lunch time. Right down a list of ingredients for the cook.

(a) 150 niños comen pudin de arroz en el almuerzo. Escribe una lista de ingredientes para el cocinero.

(b) Suppose you are making rice pudding for ten people. How many pints of milk would you need?

(b) Supongamos que estás haciendo un pudin de arroz para diez personas. ¿Cuántas pintas de leche necesitarías?





(c) Suppose you were making rice pudding for twenty people. How much sugar would you need?

(c) Supongamos que estuvieras haciendo un pudin de arroz para veinte personas. ¿Cuánta azúcar necesitas

Let's do it
CREATIVELY





In preparing this presentation we at Joanna Pinewood Education limited learnt some Spanish in preparing this translation and our Spanish adult learners improved their English and numeracy skills in making the translation and typing the English draft

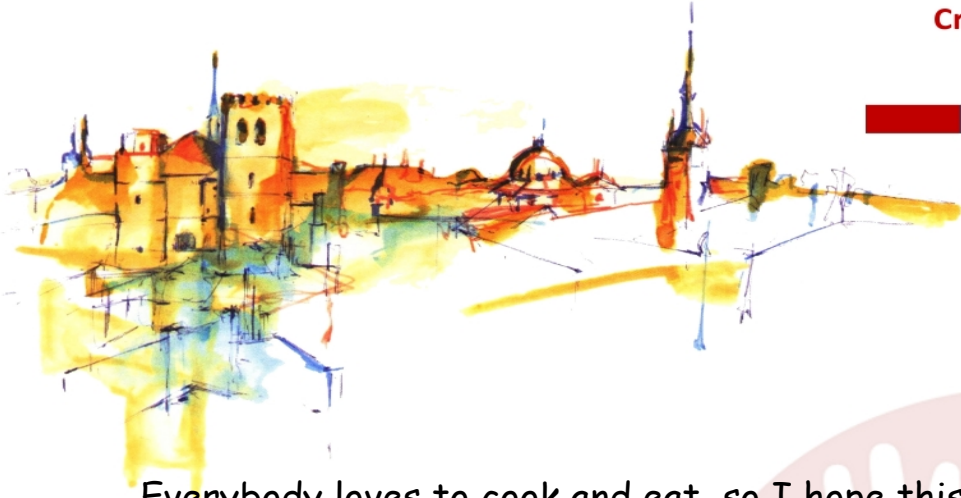
Preparando esta presentación nosotros y la organización Joanna Pinewood sobre la educación limitada aprendió algo de **español** preparando esta traducción y nuestros aprendices adultos españoles mejoraron sus habilidades en inglés y matemáticas traduciendo y mecanografiando el borrador en inglés .

It appears possible to learn a language and a technical skill together.

Parece posible aprender habilidades lingüísticas y destrezas técnicas juntas

Let's do it
CREATIVELY





Everybody loves to cook and eat so I hope this brief presentation will encourage participants of this workshop and others reading this to use the internet or books to search for recipes in other countries and translate them and learn new words from other countries.

Todo el mundo ama cocinar y comer, así que deseo que esta breve presentación animen a los participantes de este taller y a otros lectores, que usen internet y libros para buscar recetas de otras países y así puedan traducirlas y aprender con ello.

I hope you will be encouraged to see cooking as a mathematical opportunity for learners to understand ratio and other mathematical rules and even scientific ideas.

Yo espero que vosotros os animéis a ver la cocina como las matemáticas como una oportunidad para aprender a entender las proporciones y otros conceptos matemáticos e incluso científicos.





THE END

Let's do it
CREATIVELY



Education and Culture DG
Lifelong Learning Programme

This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.

Creativity and motivation in teaching maths, science and technology
21 – 24 October 2010, Olomouc, Czech Republic
<http://letsdoit.upol.cz>



CALCULATING RATIOS
CALCULANDO PROPORCIONES
By
Por
Krzysztof Bahrynowski
Joanna Pinewood Education Limited
United Kingdom

Let's do it
CREATIVELY



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



RATIOS IN COOKING LESSONS PROPORCIONES EN LA COCINA

Can you use and understand ratios? We use ratio everywhere in our lives. To work out currency, to check shopping receipts, to dilute garden pesticides and insecticides and when we use ingredients in the kitchen.

¿Puedes utilizar y entender las proporciones? Usamos proporciones en todos los sitios de nuestra vida. Para calcular el cambio, comprobar los recibos de la compra, diluir pesticidas de jardín e insecticidas. Y cuando usamos ingredientes en la cocina

A good example is the Biscuit, a sweet biscuit that you can make using any measurement. The Ratio Biscuit is made by mixing flour: sugar:water in the ratio of 3:2:1.

Un buen ejemplo es la proporción de la galleta, una galleta dulce que tu puedes hacer usando cualquier medida. La proporción se galleta se hace mezclando harina, azúcar y agua en la proporción 3, 2, 1.



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



RATIOS IN COOKING LESSONS PROPORCIONES EN LA COCINA

Can you use and understand ratios? We use ratio everywhere in our lives. To work out currency, to check shopping receipts, to dilute garden pesticides and insecticides and when we use ingredients in the kitchen.

¿Puedes utilizar y entender las proporciones? Usamos proporciones en todos los sitios de nuestra vida. Para calcular el cambio, comprobar los recibos de la compra, diluir pesticidas de jardín e insecticidas. Y cuando usamos ingredientes en la cocina

A good example is the Biscuit, a sweet biscuit that you can make using any measurement. The Ratio Biscuit is made by mixing flour: sugar:water in the ratio of 3:2:1.

Un buen ejemplo es la proporción de la galleta, una galleta dulce que tu puedes hacer usando cualquier medida. La proporción se galleta se hace mezclando harina, azúcar y agua en la proporción 3, 2, 1.



This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



You take 3 cups of flour mix it with 2 cups of sugar and then add a cup of water. You mix a paste.

Coges tres tazas de harina mezclandolas con dos tapas de azúcar y entonces añades una taza de agua. Mezclas la pasta.

Any utensil can be used to measure the ratio: a cup, a yogurt pot, a jar.

Cualquier utensilio puede ser usado para medir la proporción: una taza, un tarro de yogur, una jarra

It does not matter what you use to measure the capacity.

No importa lo que utilices para medir la capacidad.



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



**DO THIS YOURSELF:
HAZLO TU MISMO:**

In a recipe , the ratio of flour to currants is 5:1

En una receta, la proporción de harina y grosella es 5:1

- (a) What is the ratio of currants to flour?
- (a) ¿Cuál es la proporción de grosellas y harina?
- (b) If you need 10 ounces of flour, how many ounces of currants will you need?
- (b) Si necesitas 10 onzas de harina, ¿cuántas onzas de grosellas necesitarás?



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



RATIO IN COOKING PROPORCIONES EN COCINA

It is important to use the same order of ingredients and measures.

Es importante usar el mismo orden de ingredientes y de las medidas.

Hence "Ratio Biscuits" are :

Por lo tanto las proporciones de las galletas son:

-Flour: Sugar: Water

-Harina; azúcar; agua

-F:S:W

-H; A; Ag.

3:2:1



Let's do it
CREATIVELY



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



If the order of ingredients in a recipe are changed or the order of the ratio then the chef will find that the Recipe will not work or the taste will be different.

Si el orden de los ingredientes de la receta son cambiados o el orden de las proporciones entonces la receta no funcionará o tendrá un sabor diferente.

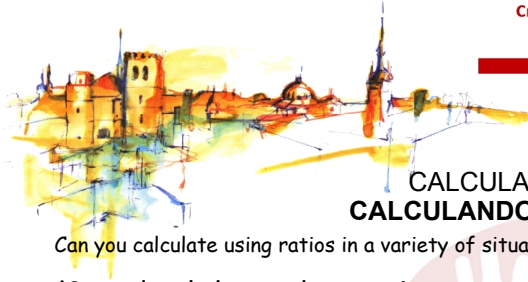
Place the mixture of a "ratio biscuits" as small circles on a metal tray and put in a hot oven. Leave the biscuit for ten or fifteen minutes.

Coloca la mezcla en pequeños círculos en una bandeja de metal y luego pongala en un horno caliente. Deja las Galletas durante diez o quince minutos.

CREATIVELY



This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



CALCULATING RATIOS CALCULANDO PROPORCIONES

Can you calculate using ratios in a variety of situations?

¿Se puede calcular usando proporciones en una variedad de situaciones?

Mrs Smith has a recipe to make an apple pie for eight people. She wants to make an apple pie large enough to serve six people.

La señora Smith tiene una receta para hacer paste de manzana para ocho personas. Ella quiere hacer una pastel de manzana lo suficientemente grande para seis personas.

She divides the amounts by 8 to find out how much is needed for one person. She then multiplies by 6.

Ella divide las cantidades en ocho para saber cuanto se necesita para una persona. Luego las multiplica por 6.



This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



The ingredients are:

Los ingredientes son:

- 160 g margarine (margarina)160g/8X6=..... 120 g margarine
(margarina)
- 320 g flour (harina)320g/8X6=.....40 g flour (harina)
- 4 tablespoon of water (cucharadas de agua) ... 4 /8X6=.....3 tablespoons of water
(cucharadas agua)
- 2.4 Kg cooking apples(manzanas para cocinar) .2.4Kg/8X6=..... 1.8 kg cooking apples
(manzanas para cocinar)
- 120 g sugar (azúcar)120g/8X6..... 90 g sugar (azúcar)



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



What are the ingredients to make an apple pie large enough to serve?

¿Cuáles son los ingredientes para hacer una tarta de manzana suficientemente grande para servirla?

- (a) 10 people?
- (a) 10 personas?
- (b) 5 people?
- (b) 5 personas?

Let's do it
CREATIVELY



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



The ingredients for rice pudding for 50 servings are given below:

Los ingredientes para el pudin de arroz para cincuenta porciones son los siguientes:

(a) One hundred fifty schoolchildren is rice pudding one lunch time. Right down a list of ingredients for the cook .

(a) 150 niños comen pudin de arroz en el almuerzo. Escribe una lista de ingredientes para el cocinero.

(b) Suppose you are making rice pudding for ten people. How many pints of milk would you need?

(b) Supongamos que estás haciendo un pudin de arroz para diez personas. ¿Cuántas pintas de leche necesitarías?



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



(c) Suppose you were making rice pudding for twenty people. How much sugar would you need?

(c) Supongamos que estuvieras haciendo un pudin de arroz para veinte personas. ¿Cuánta azúcar necesitas

Let's do it
CREATIVELY



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.

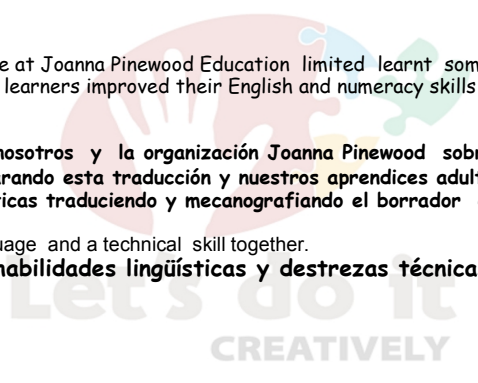


In preparing this presentation we at Joanna Pinewood Education limited learnt some Spanish in preparing this translation and our Spanish adult learners improved their English and numeracy skills in making the translation and typing the English draft

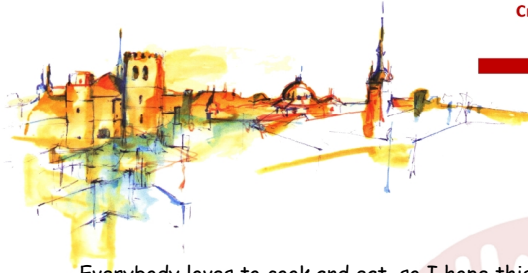
Preparando esta presentación nosotros y la organización Joanna Pinewood sobre la educación limitada aprendió algo de español preparando esta traducción y nuestros aprendices adultos españoles mejoraron sus habilidades en inglés y matemáticas traduciendo y mecanografiando el borrador en inglés .

It appears possible to learn a language and a technical skill together.

Parece posible aprender habilidades lingüísticas y destrezas técnicas juntas



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.



Everybody loves to cook and eat so I hope this brief presentation will encourage participants of this workshop and others reading this to use the internet or books to search for recipes in other countries and translate them and learn new words from other countries.

Todo el mundo ama cocinar y comer, así que deseo que esta breve presentación animen a los participantes de este taller y a otros lectores, que usen internet y libros para buscar recetas de otras países y así puedan traducirlas y aprender con ello.

I hope you will be encouraged to see cooking as a mathematical opportunity for learners to understand ratio and other mathematical rules and even scientific ideas.

Yo espero que vosotros os animéis a ver la cocina como las matemáticas como una oportunidad para aprender a entender las proporciones y otros conceptos matemáticos e incluso científicos.



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.

Creativity and motivation in teaching maths, science and technology
21 – 24 October 2010, Olomouc, Czech Republic
<http://letsdoit.upol.cz>



Let's do it
CREATIVELY



This project has been funded with support from the European Commission.
This communication reflects the views only of the author,
and the Commission cannot be held responsible for any use
which may be made of the information contained therein.