CONBAT+

CONTENT BASED TEACHING ConBaT+ Science and scientists

For the Teacher

Anu Parts

[26/01/2011]

EMPOWERING LANGUAGE PROFESSIONALS
VALORISER LES PROFESSIONNELS EN LANGUES
SPRACHLEHRENDE IN IHRER ROLLE STÄRKEN

European Centre for Modern Languages
Centre européen pour les langues vivantes
Europäisches Fremdsprachenzentrum

COUNCIL OF EUROPE CONSEIL DE L'EUROPE

SCIENCE AND SCIENTISTS

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INTRODUCTORY INFORMATION

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TARGET GROUP:

15-17

SUBJECTS:

Science, geography, art

AIMS:

1. to facilitate the construction of knowledge related to the nature of scientific knowledge.
2. to develop a conception of science and its complex relations with a multicultural and multilingual world
3. to face scientific ideas as based on the observation of the natural world, experimental evidence, rational arguments and scepticism.

KEY COMPETENCIES REGARDING:

COMMUNICATION IN LANGUAGE(S):

- Development of argumentation and communication competencies
- Oral fluency
- Writing skills

LEARNING TO LEARN:

- Organizing information
- through interaction students have the opportunity to learn from each other, to become aware of different possibilities, to interiorize theory, to criticize ideas and to become aware of ones' conceptions
- Construction of knowledge regarding the nature of science
- Development of cognitive competences such as argumentation and decision making.

DIGITAL COMPETENCES:

- Using the Internet searching for information and working on the net
- Using the internet to create materials for studying

- Use digital dictionaries

SOCIAL AND CIVIC COMPETENCES:

- Development of collaboration competences
- Development of attitudes and values: responsibility, respect, academic honesty

TIMING OF THE OVERALL ACTIVITIES:

4 x 45 min (180 min)

RESOURCES AND MATERIALS NEEDED

Computer with access to internet

1. SCIENTISTS: ORIENTATION TASKS

Timing: 45 min

Material required: computer

Grouping:  - -

Focus on content:

What's a scientist?

Focus on language(s):

- Development of argumentation and communication competencies
- Oral fluency
- Writing skills

WORKSHEET 1: ORIENTATION TASKS

a) Introduction

Grouping: 

Brainstorm the idea of SCIENCE. Write your ideas on the blackboard.

b) Vocabulary

To practise science means that by using scientific methods a scientist tries to find out new scientific facts.

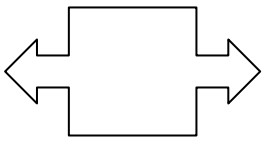
OPTION 1

Grouping: 

Discuss and write the characteristics.

What's a scientist? What is the job of a scientist?

List of adjectives List of verbs

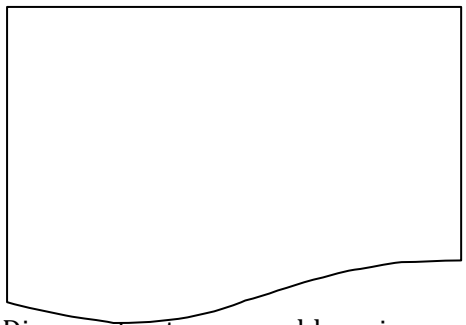


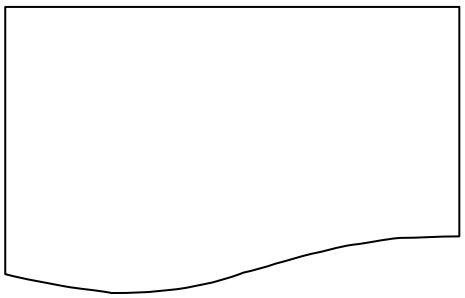
OPTION 2

Grouping: 

Scientific problems may be universal and/or local. Characteristics depend on context and cultural objectives.

Try to find an example for both kinds of scientific problems.





Discuss about your problems in groups.

c) Writing

Grouping: 

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Imagine yourself as a scientist and write job seeking advertisement.

d) Presentation

Grouping: 

Use the Internet and find a scientist from every continent. Make a short presentation (3 minutes) about their contribution to science. Exchange information with another student.

e) Multicultural science

Grouping: 

OPTION 1

What are the advantages and disadvantages of working as a scientist in a multicultural group /lab?

advantages disadvantages

Grouping: 

OPTION 2: Mini presentations

Read the topics and find a scientific problem(s) connected to the word.

Each of you has one minute to talk about a scientific topic. You can't hesitate, repeat words or deviate from the topic. If you do, another student can challenge you and take over the topic. Whoever is talking at the end of the minute gets a point.

Topics

Agriculture	Diseases	Smoking	Soap	Computers
Transport	Life on Mars	Cornflakes	Cars	Time travelling
Shopping	Talking pets	Beds	Sea	Clothes

2. SCIENTIFIC LANGUAGE

Timing: 45 min

Material required: computer

Grouping: 

Focus on content:

What's scientific language and how to use it?

Focus on language(s):

- Development of argumentation and communication competencies
- Oral fluency
- Writing skills

WORKSHEET 1: SCIENTIFIC LANGUAGE

a) Tune in activities

Grouping: 

The language used by scientists differs a lot from the everyday language we speak. What's the difference? Scientific language means exact description of the subject according to its scientific meaning. For instance: hand – forelimb; run – move quickly on the back limbs, water – substance, which consists of H and O etc…

words	Explanation using scinetific language
Eye Space Light Wing	

Look for these words in wikipedia and try to find out the same words into two more languages translating the page and then try to find the word in your own language..

English: Shell	Danish: konkylie	Portugese: concha	Your own language:

b) Writing

Grouping: 

„Translate“ one of the nursery rhymes into scientific language.

Jack and Jill went up the hill

To fetch a pail of water.

Jack fell down and broke his crown,

And Jill came tumbling after.

http://en.wikipedia.org/wiki/Jack_and_Jill_(song)

A flea and a fly flew up in a flue.
Said the flea, "Let us fly!"
Said the fly, "Let us flee!"
So they flew through a flaw in the flue.

http://www.nurseryrhymes4u.com/NURSERY_RHYMES/Page_924.html

A tree toad loved a she-toad
Who lived up in a tree.
He was a two-toed tree toad
But a three-toed toad was she.
The two-toed tree toad tried to win
The three-toed she-toad's heart,
For the two-toed tree toad loved the ground
That the three-toed tree toad trod.
But the two-toed tree toad tried in vain.
He couldn't please her whim.
From her tree toad bower
With her three-toed power
The she-toad vetoed him.

http://www.nurseryrhymes4u.com/NURSERY_RHYMES/Page_924.html

c) Speaking, listening

Grouping: 

Read your scientific poetry to classmates.

3. SCIENTIFIC EXPEDITIONS

Timing: 90 min

Material required: computer

Grouping: 

Focus on content:

- Learning about expeditions

Focus on language(s):

- Development of argumentation and communication competencies
- Oral fluency
- Writing skills

WORKSHEET 1: SCIENTIFIC EXPEDITIONS

a) Warm-up activity

Grouping: 

Everything starts from scientific question. Look around in your classroom and write down as many questions as you can in 5 minutes time.

b) Vocabulary

Grouping: 

Make a pictogram timeline of Charles Darwin's life (include 7- 10 most important episodes).

http://darwin-online.org.uk/timeline.html

c) Writing

Grouping: 

Sometimes natural scientists make long journeys to answer questions. In the past this was quite usual. Planning an expedition was a complicated task in the 19th century and it still is up till now.

You are a member of the crew. Make a list of 5 objects to take with and 3 things every member of your crew has to organise before and after the expedition.

Before		**After**
Captain... 1.… 2.… 3.… Scientist... 1.… 2.… 3.… … **5 objects:** 1. … 2. … 3. … 4. … 5. …	I am _____ My crew: _____ 	Captain... 1.… 2.… 3.… Scientist... 1.… 2.… 3.… …

d) Speaking

Grouping:

How do you think these explorers communicated with the local population? Explain the local population what you came for and what your study is about.

Use as many different words in as many different languages as possible. Create a multilingual presentation.

e) Reading

Grouping: 

Background: The collected materials on the expedition on the „Beagle“ include descriptions and drawings.

You can read the diary on

http://darwin-online.org.uk/content/frameset?itemID=EHBeagleDiary&viewtype=text&pageseq=1

and see the drawings

http://darwin-online.org.uk/graphics/illustrations.html


Skim the following text and try to find original words to the definitions below referring to.

Tierra del Fuego, 1834, March 4th

Came to an anchor in the Northern part of Ponsonby sound. We here enjoyed three very ***interesante*** days: the weather has been fine & the views magnificent. The ***bergen***, which we passed today, on the Northern ***Küste*** of the Channel are about 3000 feet high, — they terminate in very broken & sharp peaks; & many of them rise in one abrupt rise from the waters edge to the above elevation. The lower 14 or 1500 feet is covered with a dense ***mets***. — A mountain, which the Captain has done me the honour to call by my ***nombre***, has been determined by angular ***möötmine*** to be the highest in Tierra del Fuego, above 7000 feet & therefore higher than M. Sarmiento. — It presented a very grand, appearance; there is such splendour in one of these ***Schnee***-clad mountains, when illuminated by the rosy ***lumière*** of the sun; & then the outline is so distinct, yet from the distance so light & aerial, that one such view merely varied by the passing ***wolk*** affords a feast to the ***esprit***.

- *A* type of precipitation within the Earth's atmosphere in the form of crystalline water ice, consisting of a multitude of snowflakes that fall from clouds: _____
- A non-corporeal substance contrasted with the material body: _____
- A large landform that stretches above the surrounding land in a limited area usually in the form of a peak: _____

- An area with a high density of trees: _____
- It identifies a *specific* unique and identifiable individual person: _____

f) Writing

Grouping:

Draw or describe the picture from a birds point of view.

 Here I am, sitting on my favourite tree…	… and here you can see the picture through my eyes.

g) Speaking

Grouping:

Describe the picture from the birds point of view using the five words left in the multilingual text that we didn´t give the definition for.

General assessment

Did you like the materials?

Was is difficult to work with different languages?

Which task did you like best?

If you could change the worksheet you would like to ...

Answer sheets

Came to an anchor in the Northern part of Ponsonby sound. We here enjoyed three very **interesting** days: the weather has been fine & the views magnificent. The **mountains**, which we passed today, on the Northern **shore** of the Channel are about 3000 feet high, — they terminate in very broken & sharp peaks; & many of them rise in one abrupt rise from the waters edge to the above elevation. The lower 14 or 1500 feet is covered with a dense **forest.** — A mountain, which the Captain has done me the **honour** to call by my name, has been determined by angular **measurement** to be the highest in Tierra del Fuego, above 7000 feet & therefore higher than M. Sarmiento. — It presented a very grand, appearance; there is such splendour in one of these **snow**-clad mountains, when illuminated by the rosy **light** of the sun; & then the outline is so distinct, yet from the distance so light & aerial, that one such view merely varied by the passing **clouds** affords a feast to the **mind**.

References

Seymour, D., Popova M. 700 classroom activities. Macmillan, 2005.