

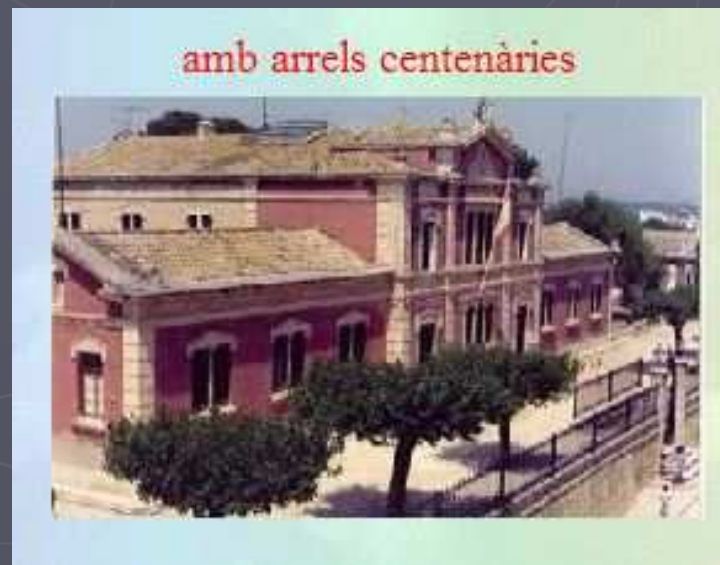
# Air & Atmosphere



**CEIP Antoni Roig**  
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# CEIP Antoni Roig

- ▶ Catchment area
- ▶ Module
- ▶ Materials
- ▶ Conclusions



# Torredembarra



Des de Torredembarra:

14 Km Tarragona

30 Km Aeroport Reus

30 Km Ruta del Cister

85 Km Barcelona

90 Km Terres de l'Ebre

275 Km Valencia

# CEIP Antoni Roig

- The school has approximately 550 pupils from 3 to 12 years old
- All the pupils are from the surrounding area
- 20 per cent of the students in the school are immigrants

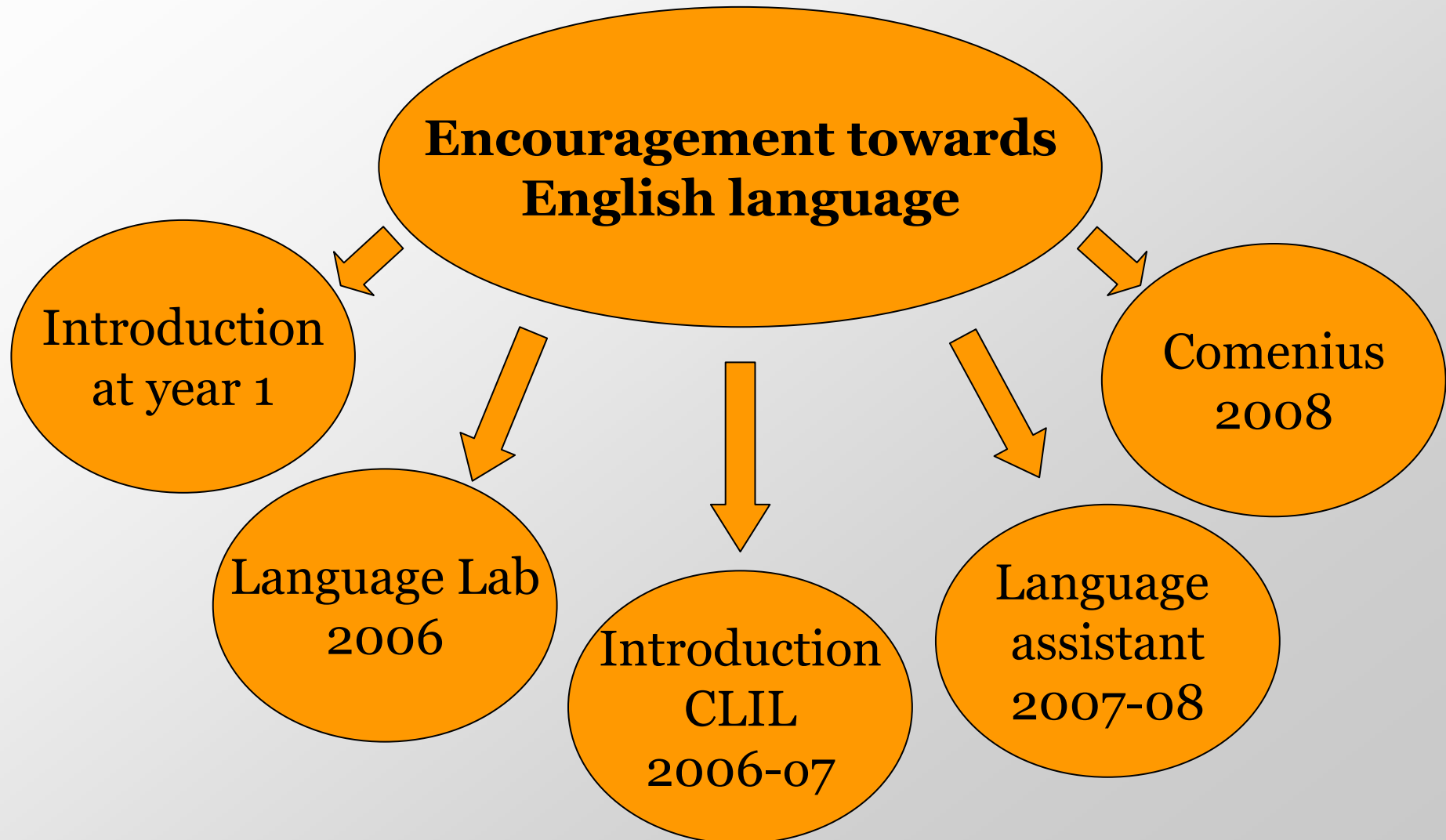


# The parental background

- Medium and low socio-economic background
- Majority families are Spanish speakers
- Torredembarra was a farmer and sailor village since medieval times, today tourism is its main business.

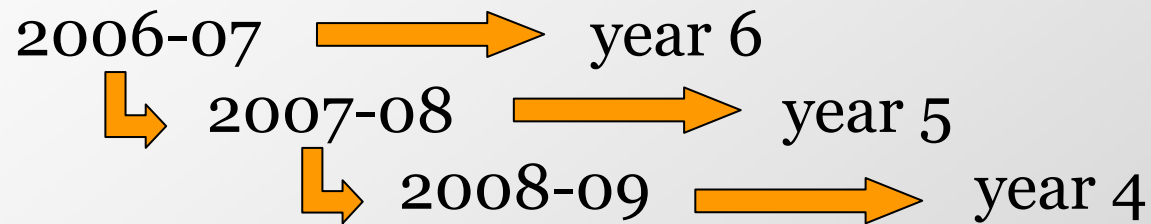


# English innovation at my school



# CLIL in my school

Introduction of CLIL in Science:



Main goals:

- To use English language for a real purpose
- To improve students English linguistic competence
- To improve the quality of foreign language teaching

# CLIL project

- ▶ Agreement between subject teachers and English language teachers in unit choice
- ▶ Arrangement of timing (usually end of term)
- ▶ Substitution of science teacher for CLIL teacher at the fixed date

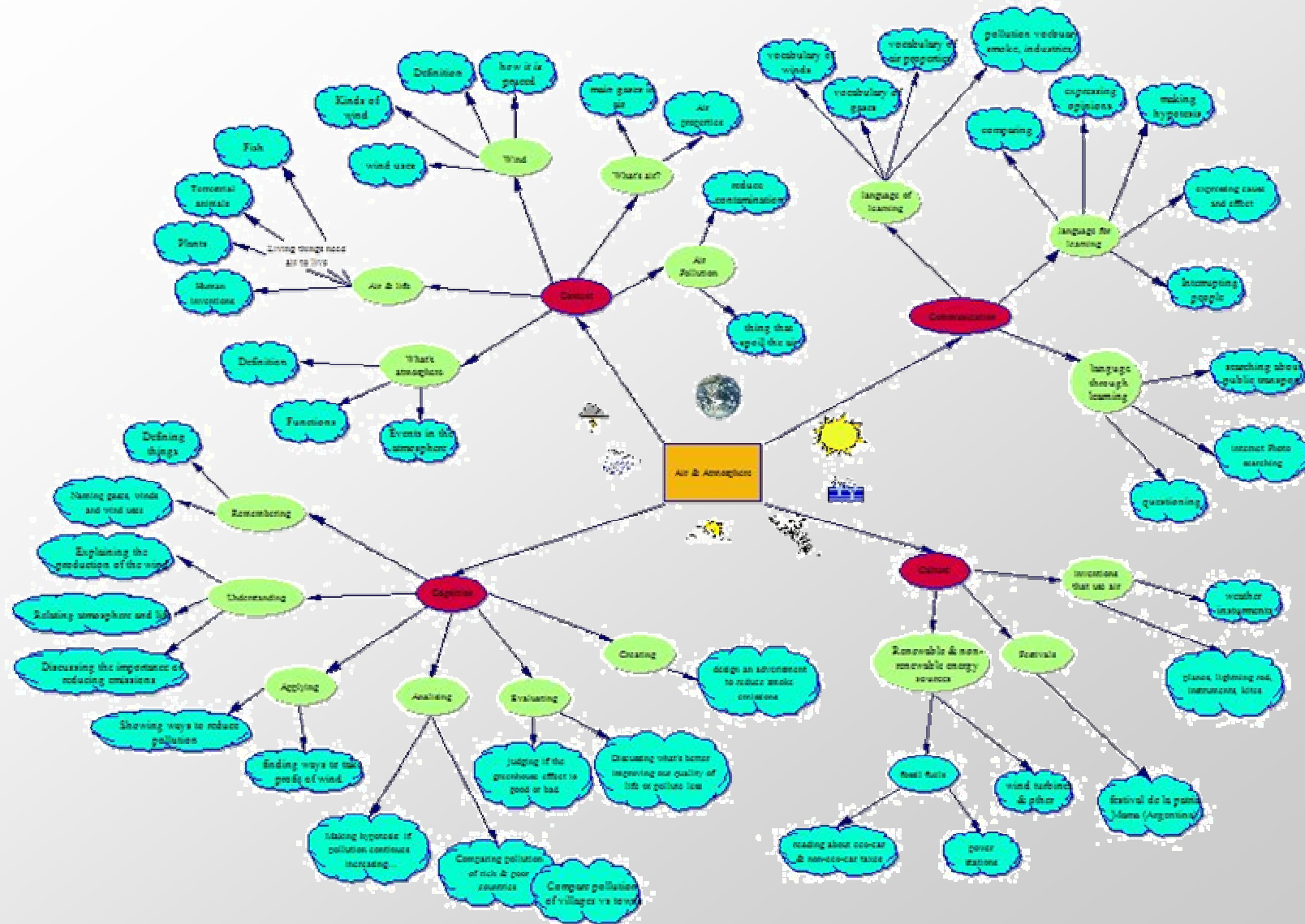




# Theory basis

- ▶ The 4C's framework
- ▶ Bloom's taxonomy
- ▶ Scaffolding
- ▶ Constructivism Piaget
- ▶ Social constructivism Vigotsky
- ▶ Multiple intelligence

# Module



# Lesson plan

## Bloc 1

- Lesson 1: Air
- Lesson 2: Experiments
- Lesson 3: Atmosphere

## Bloc 2

- Lesson 4: Wind

## Bloc 3

- Lesson 5: Air & Life

## Bloc 4

- Lesson 6: Air Pollution
- Lesson 7: Town & Village Pollution
- Lesson 8: Beating Air Pollution
- Lesson 9: Hybrid Cars

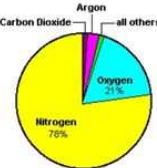
# Examples of activities

## Air & Atmosphere

The Earth's atmosphere is a layer of gases surrounding the planet Earth and retained by the Earth's gravity. It contains nitrogen, oxygen, argon, carbon dioxide, other gases, and a variable amount of water vapour.

This mixture of gases is commonly known as **air**.


Argon  
Carbon Dioxide  
all others




Nitrogen  
78%

Oxygen  
21%

Layers




The atmosphere protects life on Earth by absorbing ultraviolet solar radiation and reducing temperature extremes between day and night.




## Air properties


Air occupies volume. The volume air occupies can be reduced, it can be compressed. The volume air occupies can be increased, it can be expanded.



Air hasn't got a smell, but it carries the smell of things. We smell things with our nose. We have the olfactory sense in our noses.



Air hasn't got taste.



Air hasn't got colour.




Air weighs, even though it is very light. Furthermore hot air is lighter than cold air. Look at the balance scale and see what happens.



## Air inventions

Ballooning started in 1783. Human beings always wanted to achieve new challenges and the conquest of air was one of the most challenging.

Scientists already knew that hot air weighed less than cold air, so hot air is lighter than cold air. Consequently an engine that could heat air was required and also a big container to hold the hot air.



The machine must be light. They used things that don't weigh much like fabrics, ropes and wicker to make the basket.

A caged duck, a sheep and a rooster were lifted in a paper and fabric balloon and few months later a French scientist, Pilatre de Rozier did it.

### Complete the chart












Gases of air	Properties of air	Balloon first flight
		When did the ballooning started?
		Which one weights more the hot or the cold air?
		Which materials were used to make the machine?
		Who fled first on a balloon?

# Examples of activities

## Air & Atmosphere

Now complete the sentences with your partners:

- > The air is a mixture of different \_\_\_\_\_.
- > \_\_\_\_\_ is the most abundant gas in the atmosphere.
- > The air contains \_\_\_\_\_ and \_\_\_\_\_.
- > The atmosphere protects \_\_\_\_\_ on the Earth.
- > Air hasn't got \_\_\_\_\_.
- > Air hasn't got \_\_\_\_\_.
- > The \_\_\_\_\_ air occupies can be "**EXPANDED**" or "compressed".
- > \_\_\_\_\_ has weight, but **hot** air is lighter than \_\_\_\_\_ air.
- > The \_\_\_\_\_ started in 1783.
- > Scientists know **hot air** \_\_\_\_\_ less than **cold air**.
- > Some animals were lifted in the balloon: a \_\_\_\_\_, a \_\_\_\_\_ and a \_\_\_\_\_.
- > \_\_\_\_\_ was the first scientist to fly in a balloon.



### CHARACTER: PILATRE DE ROZIER

- > Serious, calm and polite.
- > I want to fly because I like landscape views.
- > I don't know because I am not a weather expert.
- > I used animals because I didn't know if the balloon would resist.
- > Sorry, I don't understand the question. Can you repeat, please?

### WEATHER FORECASTERS: FRANCESC MAURI MÓNICA LÓPEZ

- > Patient, polite and educated.
- > Because hot air is lighter than cold air.
- > I mean that hot air weights less than cold air, so hot air moves up.
- > Currently we are using more resistant fabrics.
- > Pardon, can you say it again?

### INTERVIEWER: JOSEP CUNIT MONICA TERRIBAS

- > Forgetful, beginner and confused.
- > Why do you want to fly?
- > Why does the balloon fly?
- > Sorry, I don't get you. What do you exactly mean?
- > Why did you put animals on the balloon?
- > Do you think this would happen know?

# Examples of activities

## Experiment 2

Procedure:

**Does air have weight?**  
Pick up a balloon and weigh it.  
Pump air into the balloon three times.  
Weigh the balloon again.

Has the weight increased or decreased?

- A) The weight has decreased because the air in the balloon makes it lighter.
- B) The weight has increased because the air in the balloon also has weight.
- C) The weight is the same.

Choose the answer and write it in your answer worksheet



# Examples of activities

Match the word, the picture and the explanation.

Hurricane

Breeze

Gale



It moves violently the branches of the trees.

It moves the leaves of the trees gently.

It can pull out trees and roofs from houses.

I think it is a ...





# Examples of activities

## 8. Beating air pollution

You can make a difference every day.

- > **Save electricity!**
- > **Use your own energy!**
- > **Recycle!**

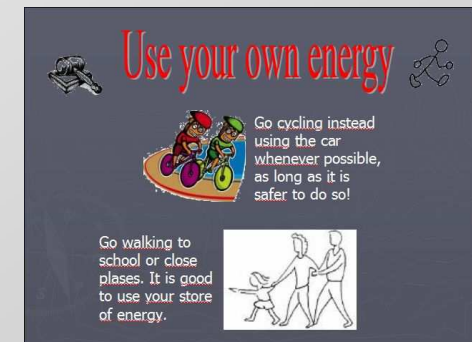


Draw the symbol in each box:

			
Each tonne of glass recycled saves 24 litres of fuel.		Going to school on foot.	
			
Don't leave the fridge door open.		Switch off computers and televisions when you have finished with them.	
			

This is why...

- > Electricity has to be generated and it largely comes from power stations.
- > Walking and cycling, instead of using a car, is not just good for the planet - it is better for me, too!
- > Recycling rubbish saves resources such as gas and coal from being burnt for power.





# Conclusion

- ▶ Produce/adapt materials using 4C's framework
- ▶ We'll have to review all materials done before
- ▶ Involve subject teachers in material production
- ▶ Share all the information with my colleagues
- ▶ Consider the possibility of doing a CLIL unit with a sister-school



Thank you!

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