



IES MONTSERRAT

Com treballar ciències en anglès

Pla Experimental de Llengües Estrangeres

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Curs 2008-2009

Curs 1r ESO



TESTING PREVIOUS IDEAS

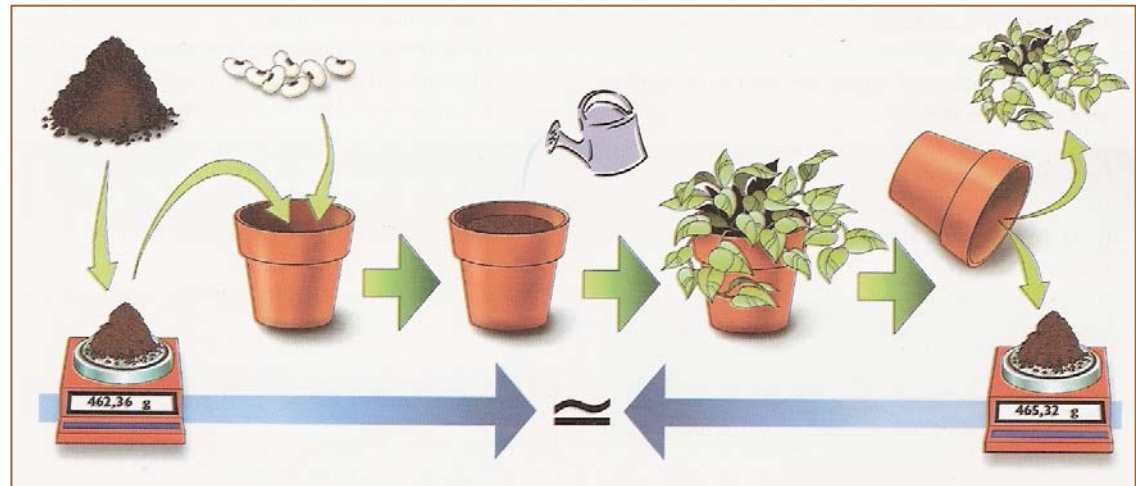
● WHAT DO YOU KNOW ABOUT SCIENCE?

| BEFORE | AFTER |
|---|--|
| <ul style="list-style-type: none">• Which are the characteristics of living things? | <ul style="list-style-type: none">• Choose the correct answers: All living things...:<ul style="list-style-type: none">a) eat to get energyb) can reproducec) can moved) can growe) dief) interact with the environment |

TESTING PREVIOUS IDEAS

● WHAT DO YOU KNOW ABOUT PLANT NUTRITION?

Imagine
the next
experiment



We plant some plant seeds in a flowerpot. Before, we weighted the soil. We water the plant until it grows. When the plant is big enough and has got fruits, we extract it from the pot and we weigh the plant and the soil. The soil weighs more or less the same as when we began the experiment.



DETECTION OF PREVIOUS IDEAS

- **WHAT DO YOU KNOW ABOUT PLANT NUTRITION?**

- a) From where has the plant obtained the matter needed to grow?
- b) How do this plant get matter?
- c) Which is the path followed by matter?
- d) How do the plant get light energy?



DETECTING PREVIOUS IDEAS

Unit 3

● WHAT DO YOU KNOW ABOUT DIGESTION?

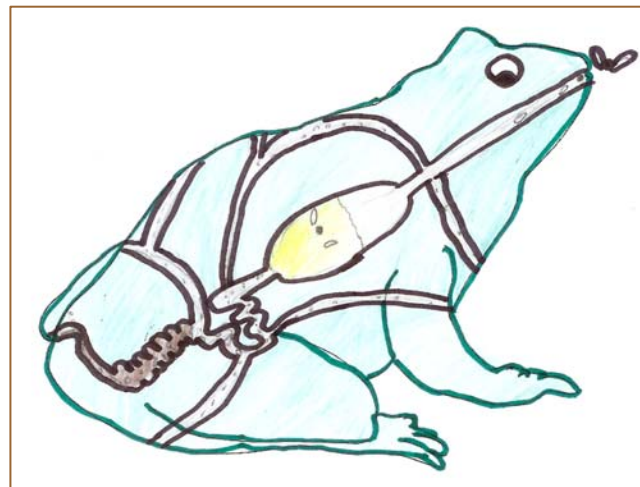
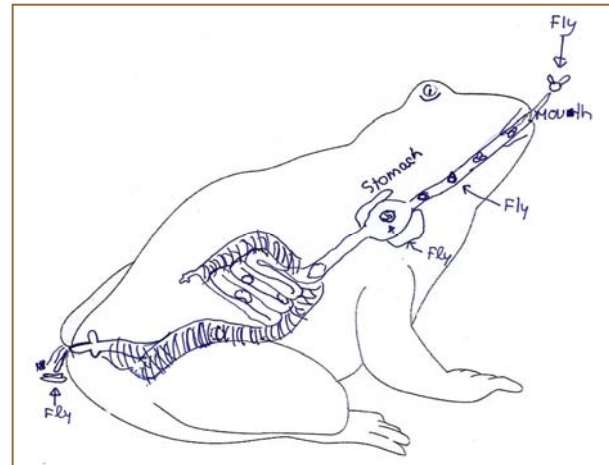
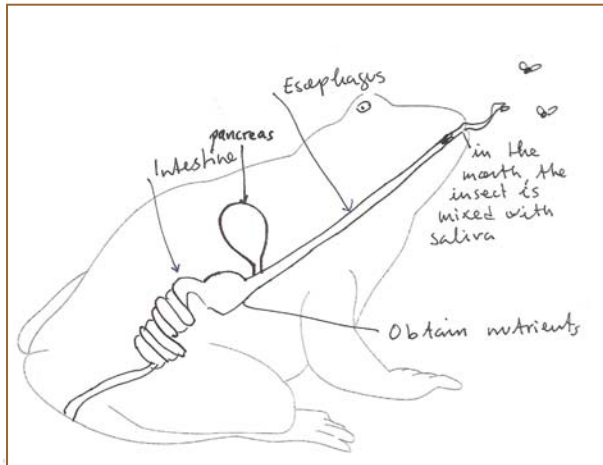
- a) Draw in the next picture the path an insect follows from the mouth to the anus when eaten by a frog.
- b) Discuss.



DETECTING PREVIOUS IDEAS

Unit 3

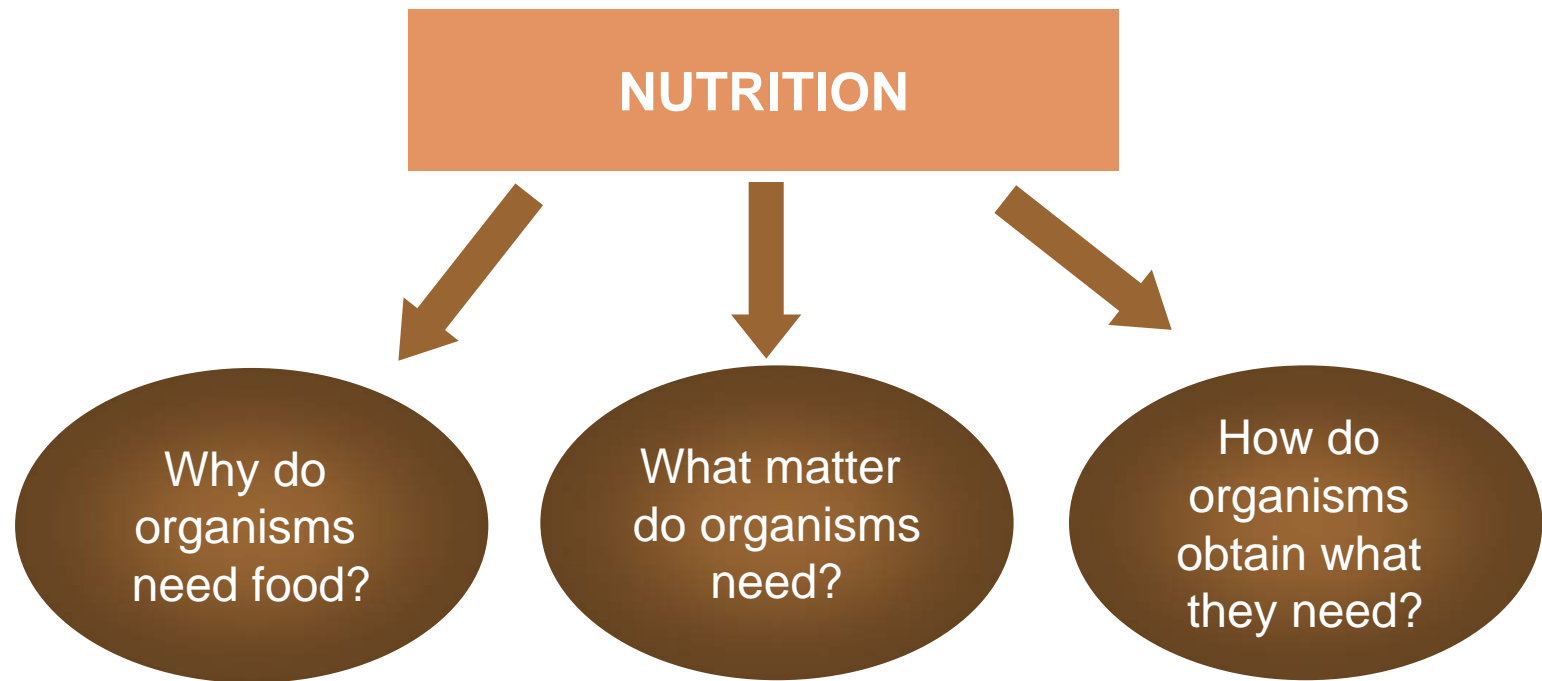
WHAT DO YOU KNOW ABOUT DIGESTION?





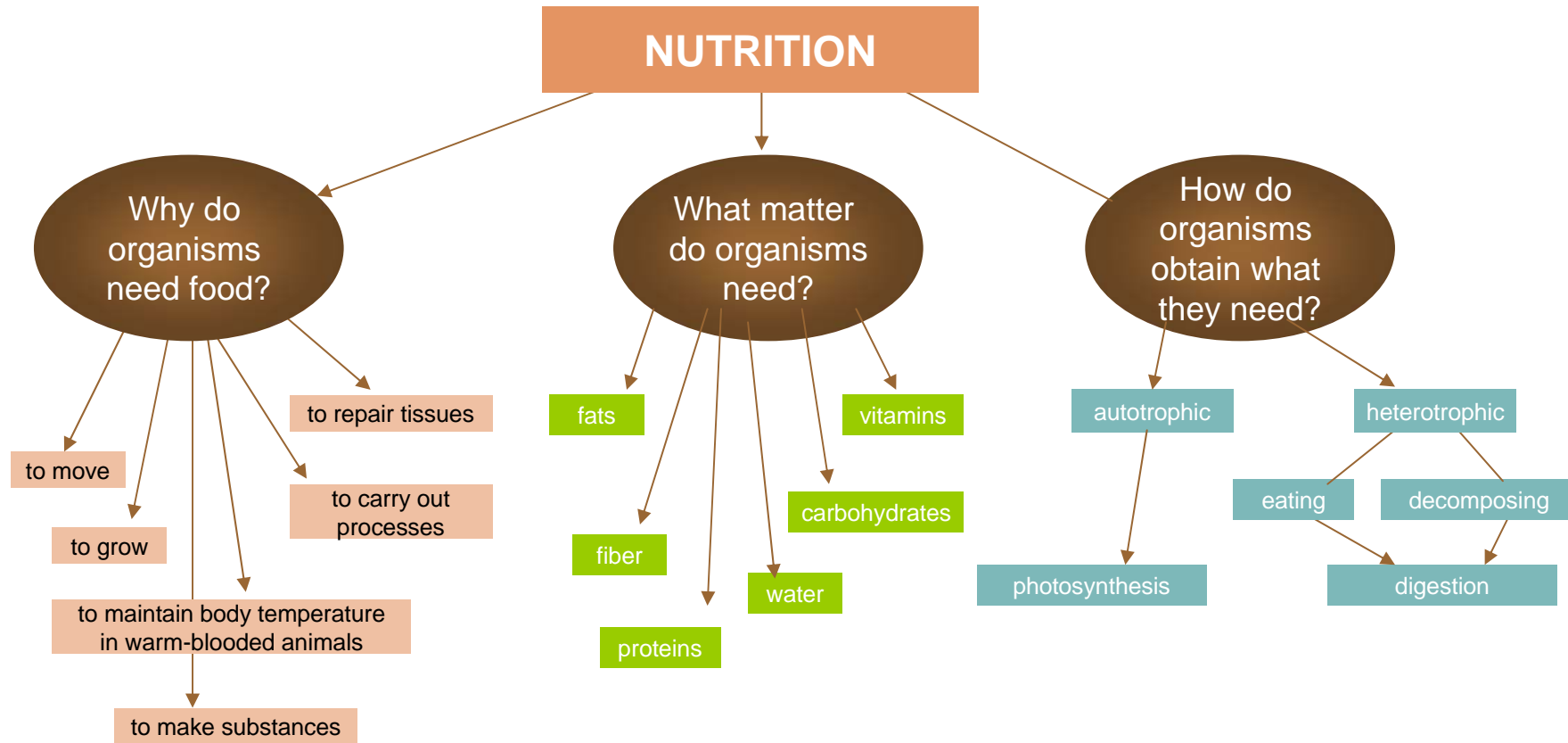
PLANNING DIDACTIC AIMS

Unit 3



PLANNING DIDACTIC AIMS

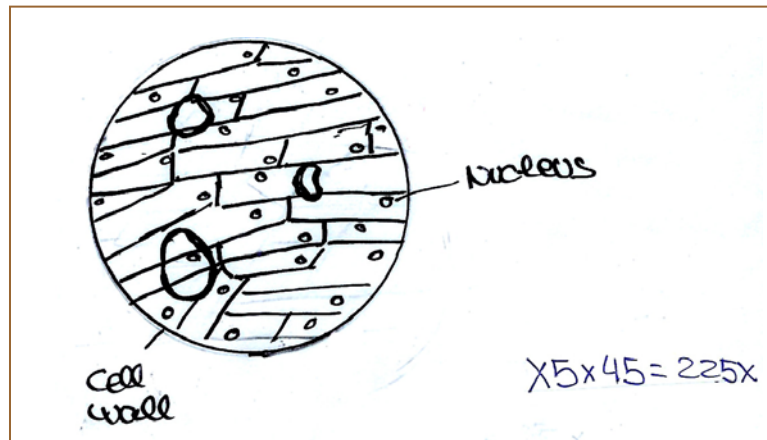
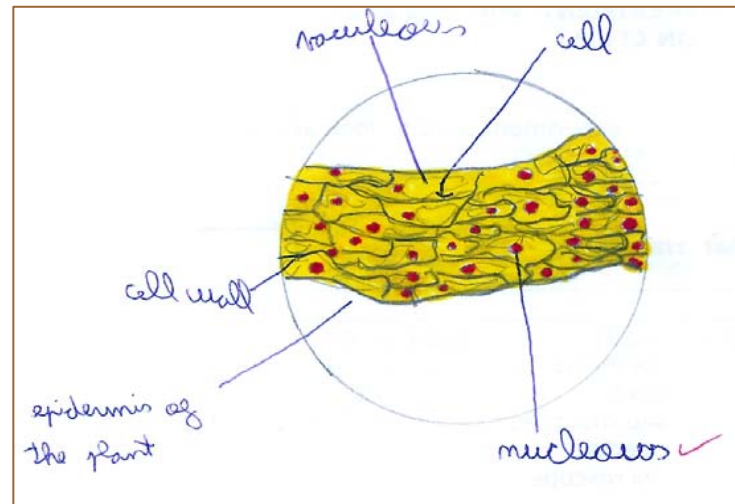
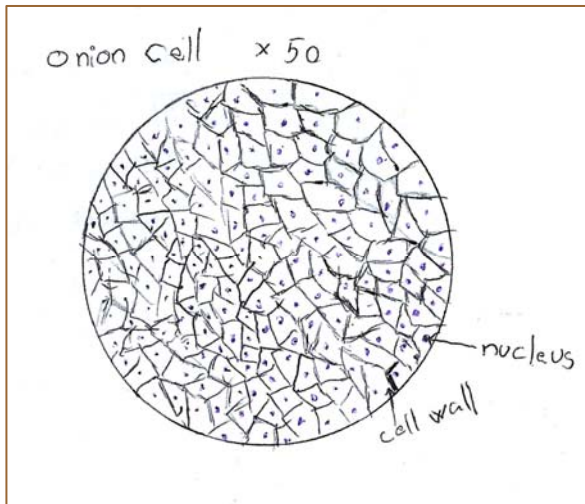
Unit 3



IDENTIFYING EVIDENCES

Unit 1

● EXPERIMENT: Making a slide of onion cells





IDENTIFYING EVIDENCES

Unit 1

● **EVALUATION CRITERIA** (agreed by consensus)

- A scientific drawing doesn't have to be a perfect work of art but it must...
 - be realistic
 - have the correct proportions
 - be labelled
 - indicate the magnification
 - have realistic colours if it is coloured

IDENTIFYING EVIDENCES

Unit 2

● EUGLENA: Animal or vegetal?



CARDS OF EVIDENCES ABOUT EUGLENA

| | |
|--|---|
| It doesn't have a cell wall ✓ | It has got chloroplasts ✓ |
| It has got a nucleus | It is not a one-celled organism |
| It can absorb food through the membrane | Euglena generated confusion among scientists ✓ |
| It is usually green ✓ | Its nucleus contains DNA and controls the activities of the cell. |
| The chloroplasts allow it to make photosynthesis ✓ | A vacuole controls the liquid inside the cell ✓ |
| It swims in water ✓ | It can make its own food ✓ |
| It contains a vacuole ✓ | Euglena is sensitive to light |
| It has got a cytoplasm ✓ | Euglena can change its shape ✓ |
| Euglena lives in ponds and lakes ✓ | Euglena is sensitive to temperature |
| Euglena can reproduce | There must be more than two groups of classification ✓ |



MAKING ARGUMENTS WITH FOUNDATION

Unit 1

- In groups, classify these things into living and non-living things.
- Compare your answers giving your reasons.
 - ...is a living thing **because** it ...
 - ... is not a living thing **because** it doesn't ...



mushroom



coral



bone



fire



tree



apple



stone



bacteria



CONNECTING REAL FACTS WITH ABSTRACTION

Unit 3



| INFORMACIÓ NUTRICIONAL (valors mitjans per 100 ml) | | | |
|--|------------------|------------------|------------------|
| | SENCERA | SEMIDESNATADA | DESNATADA |
| Valor energètic | 63 Kcal (264 KJ) | 45 Kcal (190 KJ) | 34 Kcal (145 KJ) |
| Proteïnes | 3,10 | 3,15 | 3,20 |
| Hidrats de Carboni | 4,80 | 4,85 | 4,70 |
| dels quals sucres | 4,80 | 4,85 | 4,70 |
| Greixos | 3,80 | 1,55 | 0,30 |
| dels quals saturats | 2,45 | 1,05 | 0,20 |
| Monoinsaturats | 1,04 | 0,45 | 0,09 |
| Polisaturats | 0,11 | 0,05 | 0,009 |
| Fibra | 0,00 | 0,00 | 0,00 |
| Sodi | 0,04 | 0,04 | 0,04 |
| Calci | 120 mg (15% QDR) | 120 mg (15% QDR) | 120 mg (15% QDR) |

QDR Quantitat diària recomanada

- Look at the nutritional facts of English and Catalan milk. Write down the three substances that are in the highest percentage.
- Which mineral/s does milk contain? What is its/their function?
- After looking at the milk label, can you say if milk is highly nutritious? Why?
- Which component is missing?



LEARNING SCIENCE THROUGH LANGUAGE

● And/But

- Snails **and** spiders are invertebrates. Snails have a shell **but** spiders do not.
- Plant cells have got chloroplasts **but** animals cells don't.
- Procaryotik cells do not have any nucleus **but** eucaryotik cells do.
- Gills **and** fins allow a fish to breath **and** swim underwater.



LEARNING SCIENCE THROUGH LANGUAGE

- **Cause and effect:**

- use **because** or **since** for cause
- use **so** or **as a result** for effect

- Diversity helps animals survive **because/since** the environment is always changing.
- Viruses are not cells **so/as a result** they are not really living things.
- In winter, some trees loose their leaves ... there is not much light for photosynthesis.
- Plants respire, ... they combine sugar and oxygen in order to get energy. ... they produce wastes.



LEARNING SCIENCE THROUGH LANGUAGE

- **Predicting:**

- **If ..., (then) ... will...**

- **If** we put a plant in a dark place for a long time, **then**, it **will** die.

Hypothesizing:

- **Independent variable:**

- Covered and uncovered leaves.

- **Dependent variable:**

- Amount of starch.

“An uncovered leaf left in the light for some days, will not have the same amount of starch as a covered leaf”