BioLearn Studytrip

MC Biomimicry – Experiences form the field

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Agenda

- Introduction
- MC Biomimicry @ Peellandcollege
- Experiences from the field
- Facilities
- Workshop
- Questions

Introduction – Jasper Pijnenburg

- Teacher
  - Biology
  - Hapiness
  - Biomimicry
- Mentor (Class 1)

Introduction - Peellandcollege

- Deurne (The Netherlands)

- Secondary School

- 1100 Students

- 12 – 18 years old

- Havo – VWO

MC Biomimicry

- 1VWO Class
- 24 lessons (2 per week)
- Two Challenges (12 lessons each)
- Groups (3-4 students)
- Problemsolving skills
- Solutions (Poster / Videos)
- Extra challenge

MC Biomimicry – Example (1)

- Learning about nature (=biology)

- Learning from nature (=biomimicry)

- What is nature?

- Excercise: experience nature

MC Biomimicry – Example (2)

- Learn to observe!
- Starburst excercise
- Later: workshop

Questions about environment (habitat)
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Questions about food
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Questions about fysical characteristics
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Questions about Lifecycle
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Questions about threats and survival
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

MC Biomimicry - Problems

- Running shoe – Function?
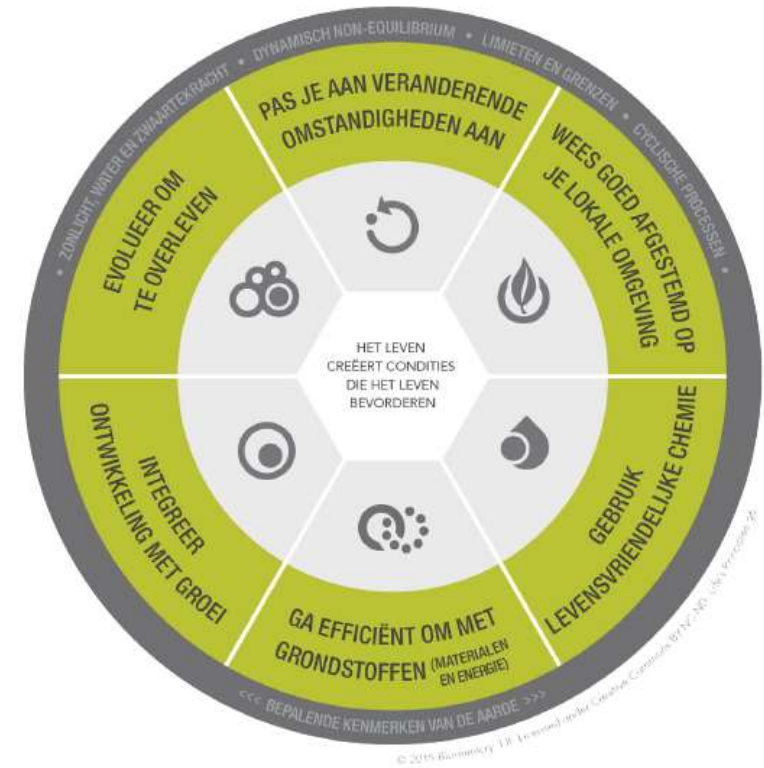- Running shoe – Material?

- Packaging – Function?
- Packaging – Material?

MC Biomimicry – Design

- Implementation of principles
- Contexts and functions

MC Biomimicry – Solutions

- ASK Nature (source)

- Design

- Poster

- Presentation

- Grade

MC Biomimicry – Posters

- Examples of posters

MC Biomimicry – 2nd Challange

- Basically the same structure

- More freedom in problems
    - Energy management (school building)
    - Get people enthousiastic
    - 'Open challenge'

- Endproduct (video)

MC Biomimicry – Experiences

What students like:

- It's new / different from other lessons
- Ownership
- Freedom
- They work together in teams
- Exampes from nature

MC Biomimicry – Experiences

What students find diffucult / don't like:

- It's tough sometimes (content)
- To find solutions (in nature)
- Translation of solution to design
- They work together in teams

MC Biomimicry – Facilities

Materials

-workbooks

-posters / video's

-internet / computers

-materials from nature

MC Biomimicry – Workshop

- Example from the field

- Starbursting excercise

- Learn to observe (organism)

- Surprise

MC Biomimicry – Five Topics

1. Environment

2. Food

3. Lifecycle

4. Physical characteristics

5. Threats and survival

MC Biomimicry – Organisms

MC Biomimicry – Start

- 10 minutes
- Per group one organism
- Per topic questions
- Discussion

Questions