Summary of the 1st DEBdiscussion group, 27.02.15.
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Summary of BlackBoard (by Starrlight)

Main topics discussed on BB:
1. homeostasis – strong and weak homeostasis, definition and connection between the two
2. why separate reserve from structure – motivaton
3. shape coefficient and how it quantifies the amount of structure
4. life stages – is fetal development considered an embryo?
5. stoichiometric constraints

Disscusion points:

1. **Strong & weak homeostasis**:
   - what is the difference between strong and weak homeostasis,
   - how is a pool defined,
   - how do you model if there are more food sources (observations whether substrates covary or not)
   - when is it important (or necessary) to include another reserve pool
   - are the criteria different for plants
   - are there some regularities (for number of pools) that apply for e.g. ectotherms differently than for ectotherms
   - quiz. (http://www.bio.vu.nl/thb/deb/quizz/quizz.html) Q 01.03.: explanation of the first point: „What is the implication if weak homeostasis is not assumed? -> The chemical composition of the organism can vary at varying food densities. FALSE“ (weak homeostasis assumes nothing about the composition of organism at **varying** food densities, so there are no implications for this case)
   - Quiz 01.07. „Weak homeostasis has implications for reserve dynamics, strong homeostasis does not. Should they switch names?--> Yes, because weak homeostasis is more restrictive. FALSE“ Why explanation that weak homeostasis allows for changes in chemical composition, when strong does not ? → Define changes more specifically.
   - Detangle when assumpions apply for 1 experiment (so, within the experiment), or between 2 experiments with different food levels. -→ to be posted on blackBoard

2. Arrhenius temperature:
   - Why use Arrhenius temp and not the activation energy?
   Is there a correlation/ connection between T_A and E_a, i.e. in cases where you normally use activation energy, how would that translate to T_A? -→ to be posted on blackBoard
   - Figure 1.7. how are reproduction and aging affected by temperature in the same way? Does this capture that organisms of different age react to temperature in the same way? (does a 5.y.o. human react to temperature in a same way as 80.y.o. human?) Different T_A for different stages, or even within stages (same for all rates)? -→ to be posted on blackBoard
   - Table 1.2. – different T_A for different organisms, or for same organism (if outside tolerance range). A very steep slope (=high T_A value) translates to stenothermic organisms.

3. Structural homeostasis (isomorphy):

- is structural homeostasis related to strong homeostasis and how? → to be posted on blackBoard
- **Figure 1.4.** :what would the figure 1.4. look under varying food conditions? → is posted on blackBoard
- Membrane/citosol interactions, and how does cell know its size?→ to be posted on blackBoard

4. Miscellaneous:

- general about modeling : why is it better not to insert a parameter value directly into an equation?
- What is a definition of mobilization? (connection to membrane conductance), and what are overheads of growth? (extra material and energy that get lost when converting reserve to structure) (this is covered also in the second chapter, so we just mentioned it)