

# Energy balance & weight control



**Brainstorming activity** (asynchronous, before the beginning of the 1st teaching period): students are given some questions concerning their food habits on google [jamboard](#). Students can see their peers' answers and the teacher can use their answers to initiate discussion in class and present the theoretical background.



## 1<sup>st</sup> teaching period

### 1<sup>st</sup> Activity:

Time: 10'

Type of activity: visualization of jamboard and discussion

Class organisation: discussion in class

Actions/Tasks: the teacher presents jamboard which the students have completed on the interactive whiteboard. Both students and teacher comment on them.

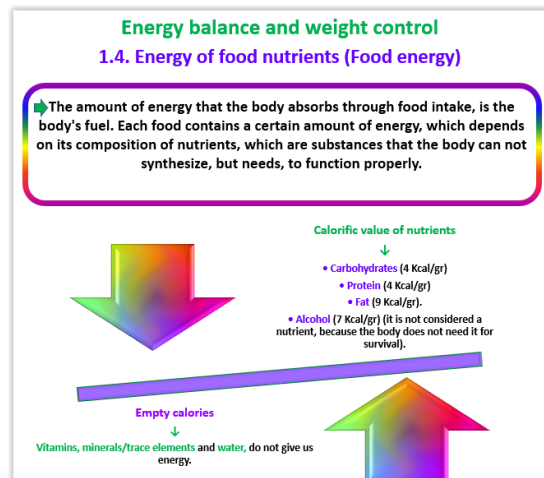
## 2<sup>nd</sup> Activity:

Time: 20'

Type of activity: presentation and discussion

Class organisation: whole class

Actions/Tasks: the teacher presents a [PPT](#) (Part 1) with information about the energy requirements of the body, forms of energy, units of energy measurement, energy of food nutrients, macronutrients/micronutrients. The teacher gives explanations if needed.



## 3<sup>rd</sup> Activity:

Time: 20'

Type of activity: group discussion and completion of worksheet

Class organisation: group work

Actions/Tasks: students are divided in groups and are asked to watch 4 short videos and answer the questions on [Worksheet 1](#), (explain the importance of energy in the body, record forms of energy, explain the calorific value of nutrients, explain 'empty' calories). They, then, present in class. Students are also provided (in the e-class) with an online [glossary](#).



**Homework:** students are asked to complete an online [worksheet](#) with the calories of certain foods, by calculating calories per serving. When they submit their answers, they get immediate feedback and they can send it to their teacher by email. They are also asked to compare the calorific value of these foods and record their conclusions.

LIVEWORKSHEETS

Breakfast cereals (1 small bowl 30 gr):

Energy and nutrients	Per serving (30 gr)
Calories (Kcal/KJ)	<input type="text"/> kcal
Fat	0,42 g
(of which) saturated	0,15 g
Carbohydrates	22,8 g
(of which) sugars	3,54 g
Protein	2,76 g

**2<sup>nd</sup> Teaching period**

**1<sup>st</sup> Activity:**

Time: 10'

Type of activity: discussion on students' conclusions

Class organisation: whole class

Actions/Tasks: The teacher discusses the students' conclusions from the calorific value of the foods on the worksheet they did at home.

## 2<sup>nd</sup> Activity:

Time: 10'

Type of activity: listening to a case

Class organisation: whole class

Actions/Tasks: the teacher presents an [avatar](#) (Maria) who describes what she ate and drank yesterday and asks for the students' advice on the calories she consumed. The students listen and try to give some initial advice.



## 3<sup>rd</sup> Activity:

Time: 25'











Type of activity: group discussion and worksheet completion

Class organisation: group work

Actions/Tasks: students are divided in groups and asked to answer one of the questions on [Worksheet II](#) (calculate the calories, evaluate Maria's diet, suggest healthier options). Each group presents their answers in class.

### HEALTHY EATING

Here is what Maria consumed yesterday. Study the table and do the activities that follow.

<b>Breakfast:</b> A glass of fresh-squeezed orange juice: ? Ham and cheese puff pastry pie: 650 kcal	 	<b>Morning Snack:</b> Two green apples: ?	
<b>Lunch:</b> Two pieces (triangle) of pizza special: 760 kcal A glass of chocolate milkshake: ?	 	<b>Afternoon snack:</b> A chocolate croissant (about 80 gr): ?	
<b>Dinner:</b> Cheese omelette: 430 kcal A slice of white bread: 70 kcal A piece of cheesecake: ?	  	<b>Total calories:</b> ?	

**Homework assignment:** students are asked to write their opinions on statements on a [digital wall](#). They can comment on other students' posts (the teacher too).



**3<sup>rd</sup> Teaching period**

**1<sup>st</sup> Activity:**

Time: 10'

Type of activity: discussion on students' posts on the interactive wall

Class organisation: whole class

Actions/Tasks: The teacher discusses the students' answers.

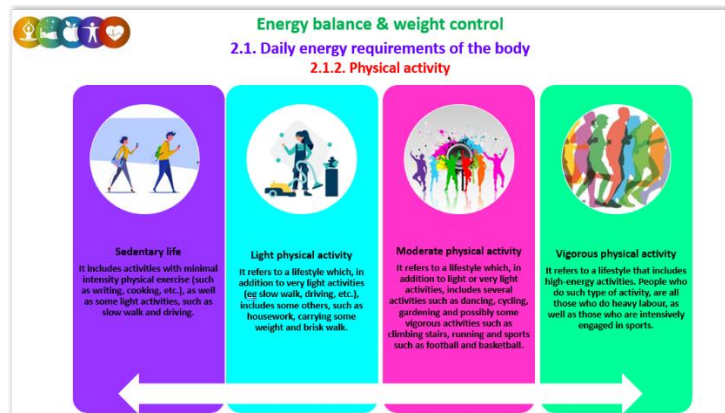
**2<sup>nd</sup> Activity:**

Time: 20'

Type of activity: presentation and discussion

Class organisation: whole class

Actions/Tasks: the teacher presents a [PPT](#) (Part 2) and explains the daily energy requirements of the body, what basal metabolism is, what the factors that affect it are, the importance of physical activity, thermic effect of food, and how to calculate the daily energy requirements. The teacher gives explanations if needed.



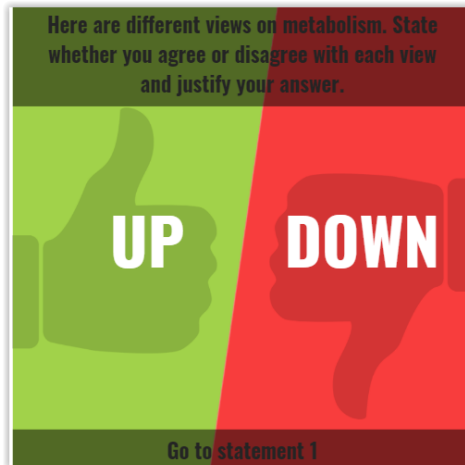
**3<sup>rd</sup> Activity:**

Time: 10'

Type of activity: group discussion and worksheet completion

Class organisation: group work

Actions/Tasks: students are divided in groups and they are presented with some [statements](#) to say if they agree or disagree justifying their choice. Whole class discussion follows on the students' choices.



**4<sup>th</sup> Activity:**

Time: 10'

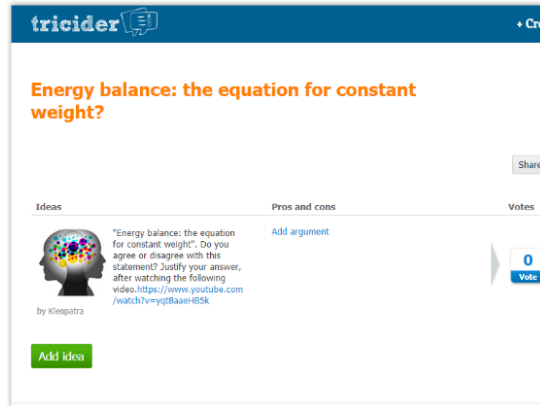
Type of activity: worksheet completion and discussion

Class organisation: individual work/ plenary

Actions/Tasks: students work individually and complete [Worksheet III](#). They are asked to calculate their BMI and their total daily energy needs. Whole class discussion follows on the students' findings.



Homework: students asked to visit an online [debate tool](#) and write their ideas as well as vote for or against the ideas using arguments (the teacher can argue and vote as well).



## 4<sup>th</sup> Teaching period

### **1<sup>st</sup> Activity:**

Time: 10'

Type of activity: discussion on students' posts

Class organisation: whole class

Actions/Tasks: The teacher discusses the students' posts on energy balance.

### **2<sup>nd</sup> Activity:**

Time: 15'

Type of activity: worksheet completion and discussion

Class organisation: pair work and plenary

Actions/Tasks: students are asked to work in pairs and complete [Worksheet III](#), giving explaining and giving examples for three types of energy balance. The explanations and examples are discussed in class.

### Energy balance

The table below presents three cases of energy balance.  
For each case, analyse the effect of energy balance on body weight, by giving examples.

Energy balance	Body weight
	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
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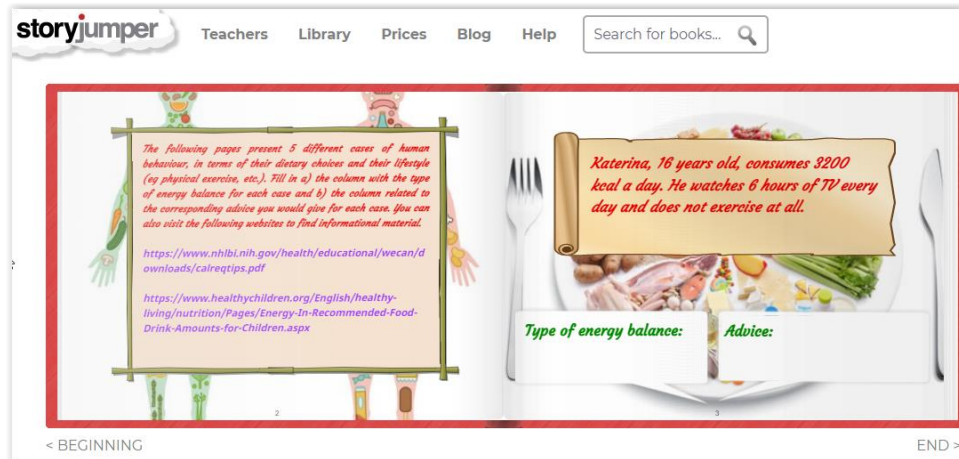
### **3rd Activity:**

Time: 25'

Type of activity: case study and discussion

Class organisation: group work

Actions/Tasks: students are divided in groups, they are presented with different [cases](#) of teenage behaviour in terms of dietary choices and lifestyle and are asked to find the energy balance in each case and offer advice. Each group presents their answers in class.



**Project:** Design a poster with tips for a rational diet aiming at achieving energy balance.

### **Assessment**

#### **Content assessment:**

Students check content knowledge by doing the online [quiz](#) (summative assessment) On completion of the quiz, students get immediate feedback by email and if they reach a score of 80%, they get an automatic certificate by email.

#### **Language assessment/practice:**

Students learn and practice the vocabulary through flashcards and games:

[https://quizlet.com/\\_a14k07?x=1qqt&i=6m3w6](https://quizlet.com/_a14k07?x=1qqt&i=6m3w6)

<https://app.quizalize.com/view/quiz/energy-balance-weight-control-b26aaf55-f087-4d5b-9025-e3af789bd48d>

<https://wordwall.net/play/19472/286/381>

They also check knowledge and language through gap filling activities:

[https://h5p.org/node/1199307?feed\\_me=nps](https://h5p.org/node/1199307?feed_me=nps)

[https://h5p.org/node/1199308?feed\\_me=nps](https://h5p.org/node/1199308?feed_me=nps)



**Expansion:**

1. Students can use the calculator for adults and calculate their parents' calorie intake, make conclusions and give them advice on healthier choices:  
<https://www.calculator.net/bmr-calculator.html>
2. Use the video <https://www.youtube.com/watch?v=k5Y9D37KmJo> to insert questions on H5P.