Teachers’ guidelines

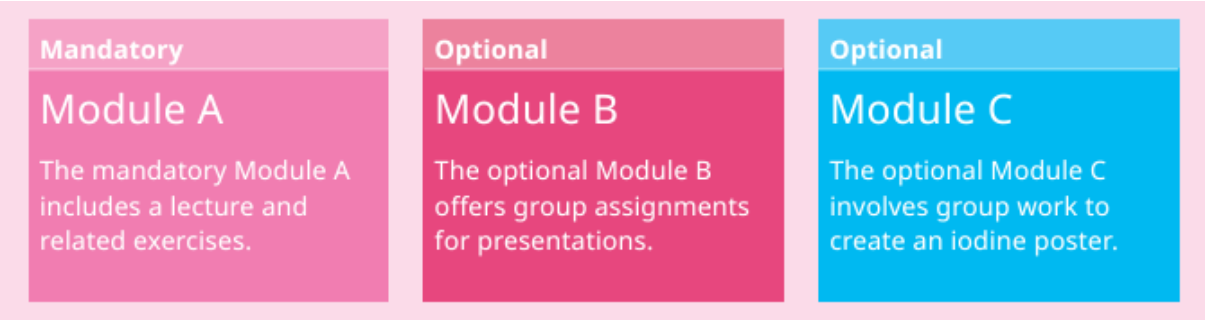
About the ABC of Iodine Awareness

The ABC of Iodine Awareness is a flexible educational programme developed for students aged 13 to 17 years. The educational programme combines biology, food science and nutrition with health understanding. For the programme, a series of activities and materials has been developed that can contribute to the development of students' health-related skills regarding iodine.

This curriculum aims to increase students' understanding and awareness of healthy iodine intake, iodine deficiency, and related health risks. The curriculum focuses on personal health, bodily functions concerning health and development, especially during pregnancy, and good iodine sources. Furthermore, the historical background of public health attention to iodine and the resulting measures taken to prevent iodine deficiency are explained.

Didactic design

The didactic design is divided into a flexible three-step model with three modules (Module A, B, and C), where students can work with various themes, solve tasks, and collaboratively develop mini-projects within one or more themes. The activities for each theme are structured to complement each other and provide a natural progression in the tasks. To provide maximum flexibility to teachers, who may have varying constraints such as curriculum requirements or available teaching time, most elements and activities are independent of each other. Therefore, it is possible to skip modules, tasks, or work questions based on what each class is capable of and has time to engage with.



Module A is **mandatory**. It consists of traditional in-class instructions in the form of one lecture (35 minutes) taught either as a PowerPoint presentation or using the posters, tasks and exercises corresponding to the topics taught. Exercises are planned as individual active learning (done either as homework or in class). Module A of the booklet also includes several extension tasks which can be given if time allows it for all or individual students.

Module B is optional and consists of four active cooperative learning assignments that students can work with in groups and subsequently present to their fellow students in class. This way, it becomes possible for students to work on different assignments, while still being presented with the findings and results achieved by each respective group. Module B assignments encourage students to be active and work together to develop a deeper understanding of the subject matter.

Module C is optional and consists of an inquiry-based learning assignment. In groups, students design a poster for an imagined national public health campaign on the importance of iodine. Regions can make local/regional competitions among schools – or school leadership can choose a winner poster. Module C promotes creative thinking and develops the student's communication skills.

Intended Learning Outcomes

After the lesson sequence, students will be able to:

- Describe the basic principles of the bodily functions of iodine
- Describe iodine's significance for health and growth
- Explain the importance of sufficient iodine levels during pregnancy
- List WHO recommendations regarding iodine intake for different age groups
- Explain the health consequences of iodine deficiency
- Identify good iodine sources in the diet
- Apply iodine knowledge in healthy dietary choices

Teaching resources and materials

To facilitate learning and knowledge acquisition, the following teaching resources and materials are available:

- A booklet presenting module A, B and C, all themes taught in the lecture, glossary, exercises, assignments and extension tasks
- A PowerPoint presentation (lecture) outlining the topics and exercises to be covered in module A
- Four educational posters with main messages and key information to hang in the classroom
- The iodine feedback tool that gives direct feedback on personal iodine intake
- Online resources for teachers and students on the ABC of iodine platform

The booklet for Module A, B and C

The booklet is the core of the classroom materials. It supports teaching and gathers all learning resources for module A in one easily accessible place for the students. The booklet includes both an overview of the three modules and covers the content of the lecture. All

exercises in module A are presented with lines and blank spaces for students to provide their answers and select the correct options. Additionally, assignments for module B and C, and extension tasks for module A are compiled here, allowing the students to use it as both a reference book and a workbook.

Lecture (PowerPoint presentation or posters) for Module A

The lecture covers all themes required to fulfil the intended learning outcomes. In the PowerPoint presentation, slides address each topic individually, with supporting information, explanations, and details included in the notes section for the teacher's reference and use, if desired. All answers to exercises in module A are also comprised in the slides, or in the notes (and on the ABC of iodine platform). If the lecture is given supported by posters, the four educational posters present main topics and key info addressing the topics covered in the PowerPoint presentation and in the booklet.

The iodine feedback tool for Module A and Module B (*Iodine detective*)

The iodine feedback tool is a motivational activity to engage the students on the topic. At the beginning of the lecture, the students will fill out this short, either web-based or paper-based questionnaire, comprised of four questions. The tool asks the students about their average intake of iodine-rich foods. Based on their answers a number of points will be given and they will receive personal feedback, either:

1) Based on your answers, it will be a good idea to make more healthy iodine choices. Even small changes may have a great impact on your iodine intake;
   or
2) Based on your answers, you have healthy iodine habits. It is good to eat a varied diet.

Lesson structure and duration
Module A

The flexible design of the three-module structure provides teachers with various options for structuring the teaching. **Remember that module A is mandatory, and students should at least be taught the lecture and are required to do the evaluation task (page 15 in the booklet), crossword (page 16), spot the errors (page 17) and exercises for module A (page 18 and 19).**

Here is an overview of module A:

Motivational activity: Iodine feedback tool (10 minutes)	**Lecture part 1:** About Iodine Evaluation task (35 minutes)	**Lecture part 2:** Crossword Spot the error Exercises (individual work, plenum presentation) (35 minutes)
Module A		

The Crossword, Spot the error, and the Exercises in lecture part 2 can also be given as homework. However, answers should be discussed in class (see the following lesson structure):

Motivational activity Iodine feedback tool (10 minutes)	**Lecture part 1** About Iodine Evaluation task (35 minutes)	**Homework** Crossword Spot the error Exercises	**Lecture part 2** Plenum discussion of: Crossword Spot the error Exercises (15 minutes)
Module A			

Module A of the booklet includes several extension tasks which can be given if time allows it for all or individual students.

Module B

Module B is optional and consists of four active cooperative learning assignments presented in the booklet (with additional resources online, see here: Teaching resources and materials (euthyroid2.eu)). The assignments are independent of each other and might be implemented in any desired selection. The assignments allow students to engage with the task assigned with their fellow students, an approach that encourages students to take an active role and develop a deeper understanding of the subject matter.

Motivational activity Iodine feedback tool (10 minutes)	**Lecture part 1** About Iodine Evaluation task (35 minutes)	**Lecture part 2** Crossword Spot the error Exercises (individual work, plenum presentation) (35 minutes)	**Group work** Assignments (45 minutes)	**Group work** Assignments (45 minutes)	**Group presentations** Assignments (45 minutes)
Module A			**Module B**		

One of the assignments in module B is to design a mini research study: *Iodine awareness quest: crafting a community questionnaire*. If you want to train students in formulating and carrying out a problem-based project this assignment should be included in your lesson structure (see more here: Teaching resources and materials (euthyroid2.eu)).

The assignment, *Tracing iodine: mapping global fortification programmes,* can only be done if the students have access to the internet.

Prepare for the group work by deciding:

- which of the four assignments students can choose, or make a pre-selection where you pick the assignment(s)
- on group size, it will depend on the number of students and the chosen assignment
- how you will divide students into groups

When introducing the group work make sure to:

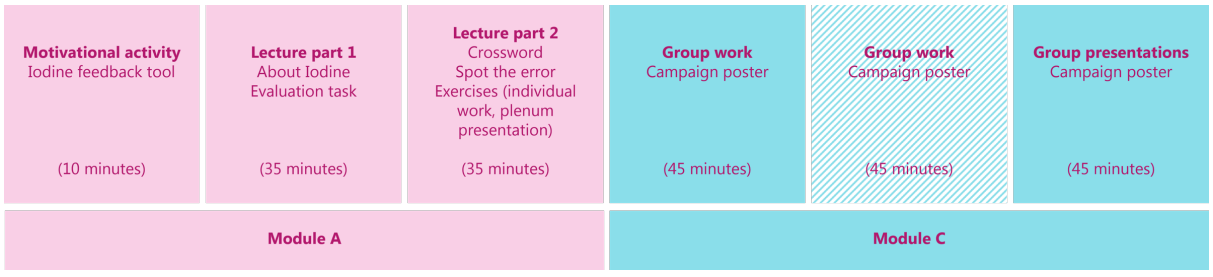
- provide clear instructions for the assignment and details on the expected outcome of their group work

- explain to students on which criteria their class presentations will be evaluated (see suggestions for evaluation criteria under the section 'Answers to exercises and evaluation criteria', below)

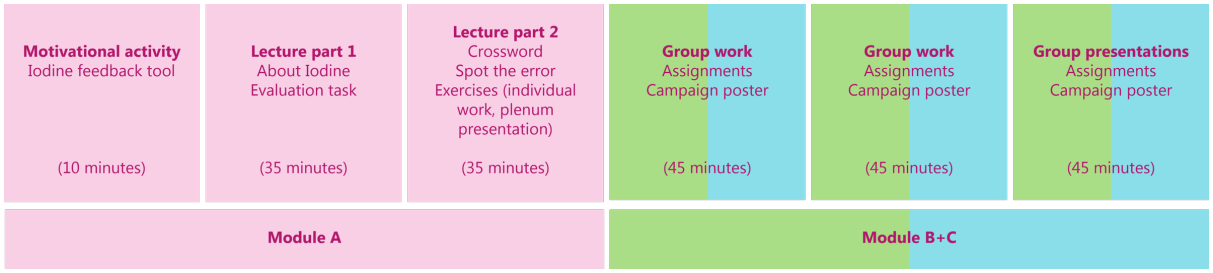
Module C

Module C is optional and consists of an inquiry-based learning assignment presented in the booklet (with additional resources online, see more here: Teaching resources and materials (euthyroid2.eu)). Students are to work in groups, and design and create a campaign poster for an imagined national campaign for iodine awareness. The poster should educate others about what iodine is and why it is important for health. The task engages students in a real-world scenario; the educational method promotes problem-solving and experimental learning. A step-by-step guide is provided to students – and examples of other campaigns, tips and tricks are available for students at the ABC of iodine platform.

Yet again, module C can be combined with module A and (parts of) module B in various ways. Just keep in mind that the lecture and exercises in module A are mandatory. If you are short on time, but would like to have students create a poster this lesson structure is a possibility:



Whereas if you have more lessons available, you can use this lesson structure or even create a longer teaching sequence:



Prepare for the group work by deciding:

- on group size, it will depend on the number of students
- how you will divide students into groups

When introducing the group work make sure to:

- provide clear instructions for the assignment and details on the expected outcome of their group work
- explain to students on which criteria their class presentations will be evaluated (see suggestions for evaluation criteria under the section 'Answers to exercises and evaluation criteria', below)

Answers to exercises and evaluation criteria

You will find all answers to exercises in module A, crossword and spot the error tasks in the section on teaching resources and materials on the ABC of iodine platform (see more here: Teaching resources and materials (euthyroid2.eu)).

For module B and C group presentations can be evaluated by the following criteria:

- students' ability to formulate research questions
- gather and analyse data
- how effectively students have worked in the group
- students’ ability to share ideas, and communicate their findings
- students' originality and creativity

Hopefully, you and the students enjoyed the lessons and acquired useful knowledge on the importance of iodine for bodily health.