

## vidubiology Module overview

*vidubiology* tasks are structured by media production level and not biology content as entry, intermediate and advanced production ideas. Taking photos can be done by all students and helps them get into a reflective production process which can be built up by adding animation and motion later on. The knowledge acquired with the entry task can be applied in the intermediate task, and knowledge acquired with the intermediate task can be applied to the advanced task. All tasks share the goal that photo and video production supports the learning of biology (see *vidubiology* approach document).

### Module 1 – Entry task

The entry task offers a low barrier to entry. Taking photos requires very little technological understanding and can be done with existing hardware. It is important to understand that within the project this is more than just quickly taking some snaps. Students are required to plan their photos, make reference to the biology content the teacher has given them. They will need to discuss *how* (to use the camera) and *where* (to position the camera) they want in their photos and then reflect, select and present their images to the class.

<b>module 1</b>	<p><b>Entry task - Photo based</b></p> <ul style="list-style-type: none"> <li>• <b>Production:</b> students create photos of chosen biological phenomena taking into account design criteria (e.g. camera position, framing, close-up, image composition, focus). As an option these photos can be processed / manipulated further using Photoshop style software or apps;</li> <li>• <b>Possible biology content:</b> “How plants change according to the season” - Students explore plants, special parts of plants, or plant communities, visually as a support for a deeper investigation of biological phenomena. The photos will be assigned to a specific context and shared with their class and later online.</li> </ul>
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The entry task is ideal where biology content is static. Further ideas include: microscopic images, comparing and arranging images of fruit, comparing these with the microscopic images; macro shots of flowers and special flower forms.

## Module 2 – Intermediate task

The second module introduces movement and as a result, film making. Still images are combined in different ways to create moving images. This includes simple photo stories (where photos are edited together with titles and music), time lapse (speeding up video footage or using time lapse software) and stop motion (animating objects through the fast combination of still images) – making them fitting for biological processes. Module 2 can be integrated into lessons as an independent learning unit or as an extension to module 1. In the latter case, for example the phenomena of movements in and of plants, which are often unknown or little noticed, come into focus.

<b>module 2</b>	<b>Intermediate task – Series of photos</b> <ul style="list-style-type: none"><li>• <b>Production:</b> photo story / time-lapse / slow-motion: still images edited into photo stories, software used to speed up video footage for time-lapse or software used to slow down video for slow-motion</li><li>• <b>Possible biology content:</b> “Plants in motion” or “Animals in motion” - filming animals (e.g. captive behaviour of chameleons; locomotion of snails) or movement of plants (e.g. opening and closing of flowers; reaction to touch in mimosa) and exploring their movements with slow motion and also time lapse and slow-motion.</li></ul>
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Biology moves into motion and there are many further ideas which can fit within the second module. These include slow-motion productions of fast animal movements and observing plant growth with time-lapse. Learning is supported by visualising complex, rapid or barely visible processes such as the dispersal of plant seeds by means of editing through the use of digital tools.

## Module 3 – advanced task

With the final module students arrive at full video production. Building on their experiences from the intermediate task they can work on problem-based tasks in the biology classroom, content, document processes and situations in nature. Students become aware what it means to produce a movie and that planning is important to make a focussed film for a target audience. They will need to think about questions like “What should the film express? Which biological state would I like to represent? Where should the focus placed?” They will need to think in what form they want to

produce a video (documentation, documentary or video tutorial) and how they want to bring the content across through examples, titles or sound track.

<b>module 3</b>	<b>Advanced task – Video documentary / documentation</b> <ul style="list-style-type: none"><li>• <b>Production:</b> video production: students produce a documentary / documentation / tutorial about a given or self-selected biological theme / phenomena</li><li>• <b>Possible biology content:</b> students can develop the idea of mimosa and formulate their own research questions; they develop the animals in motion theme into a documentary style video; Students can work through scientific questions such as “What kind of relationships does pollinators and plants have? How do certain animals find their food, though they cannot see anything? What influence does the light, temperature or composition of the air have on plant growth?”</li></ul>
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Video production offers the possibility to run long term observations of plant growth or specific adaptations of the environment such as how they survive the winter. Processes which are not visible, such as the water cycle in an ecosystem, can be systematically recorded and investigated and worked through independently by students.