THE LIFE-GIVING GLACIER

YOUNGEST LEVEL

*The Life-giving Glacier* is one out of nine podcasts produced by Katrine Nyland for The Icefjord Centre in Ilulissat.

**Subjects**

Cross-curricular – mathematics and nature/culture

**Learning goals**

* The students acquire fundamental knowledge about *glaciers.*
* The students acquire special knowledge about the Sermeq Kujalleq glacier and the life that it brings with it.
* The students practice their skills in communication and cooperation.

**Organization**

We recommend that the students work in pairs or singly. Depending on what suits each student best and the competences to be developed. Keep in mind that your best friend not necessarily is the one you collaborate best with. Working together is about *working* together and not just *being* together.

**Guide to the Book Creator book**

The Book Creator book *The Life-giving Glacier* is a student’s book associated with the podcast *The Life-giving Glacier.*

The duration of the podcast is 4:28.

The activities have been designed to focus on the students’ investigative, experimental and creative approach to learning.

The process consists of three steps:

* Preparation before listening to the podcast.
* Listening to and working with the podcast.
* Further work with topics and insights from the podcast.

We recommend that you listen to the podcast before presenting it to the students.

**Page by page guide**

**– the Book Creator student’s book “The Life-giving Glacier”**

**Welcome to the Icefjord Centre, pages 4-7**

The students meet the Icefjord Centre in two pictures, showing summer and winter respectively.

In class you can talk about:

* What is the Icefjord Centre.
* What the surroundings around the Centre look like.
* The difference between summer and winter.
* How summer and winter differ where you live.

**Map Ilulissat, pages 8-9**

Have a look at the map and talk about where Ilulissat is situated. Talk about how many people live in Ilulissat. Talk about how many people live in the town or settlement where you live.

**I live here, pages 10-11**

The students see part of a world map.

The task now is to move the red marker down into the map in order to show where each student lives.

The marker is found in the white box and can be drawn into the map.

In class you can talk about:

* Differences and similarities between Ilulissat and your own town or settlement.

**Map of the Icefjord/Kangia, pages 12-13**

In the book the students see a map of Ilulissat Icefjord/Kangia: the area that is inscribed on the UNESCO World Heritage List is marked with red dots.

The students are to draw up the area by drawing a line from dot to dot. The need to use the pencil tool in Book Creator.

*Drawing with the pencil tool* see instruction 4 [here](https://isfjordscentret.gl/wp-content/uploads/2022/12/Appendix-2-Book-Creator.docx-2.pdf).

In class you can talk about:

* What is UNESCO? (United Nations Educational, Scientific and Cultural Organization is UN´s organization for education, culture, communication and science)
	+ That the Icefjord and the Sermeq Kujalleq glacier are a unique site and therefore on the UNESCO World Heritage List.
* What is required to make it possible for a site to be inscribed on the World Heritage List?

Find knowledge in this example [here](https://www.nps.gov/subjects/internationalcooperation/a-quick-guide-to-the-world-heritage-program-in-the-united-states.htm).

**Listen and talk, pages 14-15**

Now it is time for the students to listen to the podcast *The Life-giving Glacier.*

They start the podcast by clicking on the picture on page 14.

Before listening to the podcast, you can give a short introduction to the contents of the podcast.

Contents of the podcast

1. It starts with the sound of the glacier calving.
2. Katrine Nyland tells about
3. The Icefjord (in Greenlandic called Kangia) that has been inscribed on the UNESCO World Heritage List.
4. The enormous icebergs that float towards the mouth of the fjord and constantly change colors.
5. The glacier that grows smaller in the winter. It almost stops moving, but then gets active again in the summer and pushes the great icebergs out into the Icefjord.
6. Malik who is a helicopter pilot and for periods at a time flies over the glacier on a daily basis.
7. Malik tells about
8. How the tourists have difficulties quite grasping how gigantic the Icefjord and the glacier are. At first they think it is a long white line, until they land three kilometers from the edge of the glacier, then they understand how enormous it is.
9. The edge of the glacier that rises from 100 to 300 meters. When the glacier is preparing to calve, it becomes high because the ice is pushed upwards. Then, when the ice breaks off further in, it becomes lower again. A repeated cycle.
10. That he is still surprised by the dazzling sight that meets him, even though he has been out at the glacier more than 1000 times.

It is recommended that the students listen in pairs or small groups.

Let the students spend a few minutes discussing what they have heard in the podcast.

On page 15 the students are to make small sound recordings where they tell about the podcast. The pictures on the page can help them remember what they have heard.

*Sound recording*: see instruction 1 [here](https://isfjordscentret.gl/wp-content/uploads/2022/12/Appendix-2-Book-Creator.docx-2.pdf).

The recording will now be represented by a small sound icon. This icon can be placed wherever you wish on the page. You can listen to the recording over and over again.

**Review in class**

We recommend that you have a joint discussion in class when the work with pages 14-15 is finished.

We recommend that you support the discussion by writing concepts and keywords on the board.

In class you could talk about:

* What surprised the students when listening to the podcast.
	+ For example you could wonder why the title of the podcast is *The* ***lifegiving*** *glacier,* when *life-giving* aspects are not mentioned in the podcast. Find knowledge [here](https://isfjordscentret.gl/wp-content/uploads/2023/01/Appendix-1.docx).
* Concepts and keywords that the students encountered in the podcast.

In the text below you can find inspiration for the class discussion.

In the Book Creator book there are some pages with tasks connected to some of the concepts.

You can add more pages yourself for other topics, concepts and keywords you discuss.

Concepts and keywords

* Glacier – the word glacier means ”a river of ice”. A glacier is a large mass of slowly moving ice. When the weight of new snow becomes sufficiently heavy on the inland ice, the lowest section of ice is pressed out towards the coast. The stream of ice that is caused by this, is called a glacier.

*What do the tourists think the glacier looks like when they see it from the helicopter?* The attentive listener will hear Malik talk about this.

*Why does Malik land three kilometers from the edge of the glacier?*

* Calving – when blocks of ice break off the edge of the glacier and fall into the sea because of gravitation, it is called *calving*. You could say that the glacier is “giving birth” to icebergs and ice floes. The great calvings, where large parts of the edge of the glacier is loosened, only happen a few times during the summer, but smaller bits of ice break off the edge all the time and can be seen the whole year round.

*Why does the glacier front vary from being 100 to 300 meters high?* The attentive listener will hear Malik talk about this.

* A cycle – is characterized by something, that more or less regularly returns, repeating itself. The ice has a cycle. The movements of the ice are influenced by the seasons´ cold and heat.

*When is the glacier active?*

*When does the glacier almost stop moving?*

* MALIK – even though he has been out by the glacier over 1000 times, he still gets surprised and dazzled every time he is there. He is still fascinated by the enormous forces that are out there.

*What could it be that fascinates Malik out by the glacier?*

* Wildlife – in the spring the growth of plant plankton explodes in the Icefjord. This plankton is the most important for the wildlife. You call the world that emerges under the ice “the grazing fields” of the Arctic area. Among others, the animals that live in the Icefjord are:
	+ copepod, krill, Greenlandic crab, halibut, polar cod, Greenlandic shark, Greenlandic seal, ringed seal, humpback whale and the narwhale

**What is a glacier, pages 16-17**

On page 16 the students will read the text about glaciers.

Find more knowledge [her](https://universe.dk/da/bliv-klog/gletsjer)e.

On page 17 the students create a glacier using the snowflakes and lines. The lines illustrate how the snow is being pressed together before new snow falls.

The students continue the pattern that has already been started.

Follow up in class.

**Calving, pages 18-19**

On pages 18-19 the students read the text about calving.

After reading, they can watch a [film](https://www.youtube.com/embed/bsAqqHQcJyU?feature=oembed&modestbranding=1&rel=0&showinfo=0&autoplay=1) about a large piece of ice breaking off near Ilulissat.

Talk about the film in class. You could see the film again when working on the taskon pages 22-23.

**The rich wildlife, pages 20-21**

On page 20 the students will read the text about the wildlife by the Icefjord.

On page 21 the students will find pictures of the animals they have read about in the text or talked about in class. Under *concepts and keywords* (pages 14-15) there is a list of the animals that live in the Icefjord.

They can search for pictures by clicking on + inside each of the six frames.

The students can search for pictures of seals, whales, halibut and shrimps.

**My glacier, pages 22-23**

Now the students are to make a drawing based on the knowledge they until now have acquired about glaciers. When the drawing is finished, they take a photo of the drawing and insert it in the frame on pages 22-23.

**My reference book, pages 24-25**

On these pages the students make short sentences or small stories using the keywords and concepts that you have gone through. They can write them, record them as an audio file or make a drawing and insert the picture. Their products will be part of the further work with the podcast.

*Sound recording and insertion of pictures* see instruction 2 and 3 [here](https://isfjordscentret.gl/wp-content/uploads/2022/12/Appendix-2-Book-Creator.docx-2.pdf).

**On a trip with Malik, pages 26-27**

Now the students make believe that they have been on a helicopter trip with Malik.

On pages 26 and 27 they tell about their experiences. The students can use pictures, drawings, text and sound recordings in their story.

**Malik´s flying route, pages 28-29**

Now the students will calculate how long Malik´s flying route is.

On the map the route is marked by blue dots. Between the dots there are 10 km.

The students calculate the distance between the airport and the landing site and back again. The result is inserted in the box on page 29.

**Collage of the Icefjord, pages 30-31**

As a completion of the task the students make a collage.
You can make use of pamphlets, magazines and bits of paper and cardboard. Take a photo of the collage and insert it on the page.

The students can also choose to find inspiration in different pictures they find on Google.



*Insertion of pictures* see instruction 3 [here](https://isfjordscentret.gl/wp-content/uploads/2022/12/Appendix-2-Book-Creator.docx-2.pdf).

**Evaluation**

The students present their products to the class.

Make sure that the framework for feedback is positive criticism. The students should be supported in assessing what is good – and what might be done better. Find more inspiration [her](https://vimeo.com/38247060).

Not specifically with a view to making new products, but foremost to let the students discover and work with this kind of constructive and positive criticism.

If you intend to work with some of the other podcasts from the Icefjord Centre, it might make sense to save the students’ Book Creator book so that the work, they have done with it, can be used again.

If you wish to let the students make use of the feedback they have received from the class, you could reserve time for them to continue their work with their products. So that they can use the feedback they have received from each other to change things in their product.

**Colophon**

The podcast *The Life-giving Glacier* has been created by the Icefjord Centre in Ilulissat.

The teaching material for the podcasthas been developed by Lotte Brinkmann and Daniella Maria Manuel, Anholt Læringsværksted with feedback from Leg med IT.

The student’s book in Book Creator has been developed by Rikke Falkenberg Kofoed from Leg med IT.

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