GLU 2.3 Sharks

AUTHOR	Kopin
COUNTRY	Malta
AGE GROUP	9 - 11 years
SUBJECTS	environmental studies | social studies
DURATION	2 lessons (50 and 60 minutes, respectively)
TOPICS	▪ Ecosystems ▪ Responsible consumption
SDGS	SDG 14: Life below water

Competences required

- Communication skills
- Learning to learn
- Social and civic skills
- A sense of initiative
- Cultural awareness and expression

Learning objectives

- To learn about sharks, and understand the importance of biodiversity and how it is linked to the food chain.
- To show that animals in a habitat are interdependent – animals depend on other animals.
- To learn that the extinction of an animal causes the ecosystem to lose its balance.
- To understand the importance of food chains for the preservation of species and biodiversity of the planet, in order that students learn how to make ethical choices and combat stereotypes

Materials and equipment

- PC/laptop
- Interactive whiteboard or projector
- Strips of paper (to represent very small fish)

Teaching tools

- Slideshows: ‘’Sharks and Overfishing" | “Shark Myths”
- Handouts: “Food Chain” | “Shark Challenge”

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- Shark Game to facilitate understanding on the food chain
- Video clips: *Sharkwater* (documentary film trailer) | Interview with Rob Stewart, the writer and director of *Sharkwater*

Questions to discuss

- Is the marine ecosystem threatened by humans?
- How is the topic of sharks related to overfishing?
- In what ways could we help preserve biodiversity?
- What is the food chain?
- What is overfishing?
- What happens if you remove sharks from the food chain?

Suggested evaluation tools

- **Classwork:** 'Food Chain' and 'Shark Challenge' handouts.

Additional resources

- "Quickfish Guide" , available on www.fish4tomorrow.com
- Facts about sharks on www.sharktrust.org
- "Why do we need to protect Biodiversity?", available at: http://bit.ly/ECbiodiversity

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GLU 2.3 **Lesson plans**

GLU 2.3 **Lesson Plan 1** (50 minutes)

Learning objectives

- To learn facts about sharks, the importance of biodiversity and link to the food chain.
- To learn that animals in a habitat are interdependent – animals depend on other animals.
- To understand the relationship between overfishing and biodiversity.
- To understand the importance of food chains for the preservation of species and biodiversity of the planet in order that students learn how to make ethical choices and combat stereotypes.

Materials and equipment

- Laptop
- Projector
- Strips of paper (to represent very small fish)
- One printed copy of the 'Food Chain' handout per student

Teaching tools

- Slideshow: "Sharks"
- Handout: 'Food Chain'
- Food Chain Game

Questions to discuss

- What is the food chain?
- What is overfishing?
- What happens if you remove the shark from the food chain?

Suggested evaluation tools

- **Homework:** Encourage the students to do further research on the topic of overfishing. They should present their research in the form of a slideshow, poster or booklet

Activities

Time	Activity description	Additional tips
10 minutes	Start the lesson by asking the students to look up a few words or phrases related to sharks independently on class computers. This eventually leads to debate / presentation of facts found.	These and phrases related to shark fishing and finning could be taken from the

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		presentation.
10 minutes	Show the students the "Sharks" slideshow to explain to them why sharks are very important. As top predators, they fulfil a key role in maintaining the balance of the ocean by keeping populations of other fish in proper proportion for their ecosystem. Sharks also prey on the weakest species, as well as the sick and the old specimens. This allows the largest, strongest and healthiest fish to reproduce and prevent the spread of disease, providing healthy ecosystems. However, their life history strategy of slow growth, late maturity and few offspring makes them extremely vulnerable to exploitation.	Let students go through the slideshow by themselves, giving them the task to figure out the food chain independently, and assess them individually.
20 minutes	<u>Game:</u> Explain to the students that they will play a game that shows a food chain and what would happen if shark populations decrease. The game should be played in an open space, like a yard or a hall, and it simulates predator/prey relationships. **Step 1:** Three students will be the sharks, and the rest of the students will be squid and other fish commonly eaten by the sharks (e.g. mackerel or tuna). **Step 2:** Lay out the pre-cut strips of paper (around 200 pieces) to represent very small fish commonly eaten by the shark's prey. **Step 3:** Explain that the shark's prey will walk around the open space collecting (consuming) as many small fish, as they can use only one hand and picking up just one at a time. They are to put the collected 'fish' into an envelope. The sharks will also walk around and they have to tag and escort their prey to the sides of the yard/hall as a sign that they have been eaten by a shark. The above 3 steps constitute 1 session, which should last about 45 seconds. Repeat the session 3 times, with the students playing session 1 with three sharks, session 2 with two sharks and session 3 with only 1 shark. Before each session, ask the students: ▪ How many fish/squid do they predict the shark/s will catch? ▪ How many small fish do they predict the shark's prey will catch?	

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	After each session take note of the number of fish/squid eaten by the sharks and the number of small fish eaten by the sharks' prey. Make sure that, after this game, the students understand that with less sharks in the ecosystem there will be more squid, tuna and mackerel; less sharks means they don't need as many squid/fish to feed on, and that more squid, tuna and mackerel means less small fish, because they will be eaten by the squid, tuna and mackerel. Also emphasise that sharks are being killed for their fins, for shark-fin soup – a dish that has been assumed cultural value but is not important for human survival or health. When sharks are overfished, the marine ecosystem loses its balance.	
10 minutes	Conclude the lesson by giving the students the 'Food Chain' handout, and ask them to read the news article and explain what happens if you remove the shark from the chain.	

GLU 2.3 **Lesson Plan 2** (60 minutes)

Materials and equipment

- Laptop with internet access
- Projector or interactive whiteboard
- A1-sized paper or flipchart sheets and felt-tip colours

Teaching tools

- Slideshow: "Shark Myths"
- Handout: "Shark Challenge"
- Video clip: *Sharkwater* (documentary film trailer)
- Video clip: interview with Rob Stewart

Questions to discuss

- What could be done to protect fish and their natural habitat?
- Why is it important to preserve marine life?
- If the sea is not protected, what happens to us?

Suggested evaluation tools

- **Classwork (in groups):** 'Shark Challenge' handout

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Activities

Time	Activity description	Additional tips
10 minutes	Start the lesson by mentioning the documentary film, *Sharkwater*, and showing the trailer to the students. Then explain that, when Rob Stewart (who filmed and directed the film) was asked what he hoped people would learn from his film, he replied: *I hoped they would view sharks differently. They're not dangerous. They're not mindless killers. They don't eat people.* Show the students an interview with Rob Stewart.	
40 minutes	Research shark presence in Malta on the class computers, using the following questions to guide you: ▪ Do Maltese waters host sharks? ▪ If so, which type of sharks live there? ▪ What size? ▪ Are they fished to be sold as food? ▪ Has anyone in Malta ever been attacked by sharks? ▪ Are the sharks that are mostly familiar to us the only sharks that exist? Aren't there other types of sharks, for instance: manta rays, hammerheads, blue sharks, bluntnose sixgill sharks, broadnose sevengill sharks, tiger sharks, sting rays, angel sharks, shark catfish, dogfish sharks? ▪ Do we have a shark conservation centre in Malta? Where is it located? Would you consider paying a visit? After the research session, show the students the "Shark Myths" slideshow, and discuss these in the light of what has been seen and read previously. Ask the children to design a poster to raise awareness about the importance of sharks. They could either show how sharks, as top predators, play a crucial role in the oceans, or explain one or more shark myths.	For the poster task, the students could be divided into groups, each focusing on a different part of the final poster. The poster task could also be given to the students as an individual homework assignment.
10 minutes	To conclude the lesson, organise the class in groups and give each group a copy of the 'Shark Challenge' handout. They would read a number of statements about sharks and answer true or false.	

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