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**Session type:** Workshop

**Duration:** 55 minutes

**Key Stage:** KS2

### Primary Curriculum Link

- Key Stage 2 Design & Technology

### Secondary Curriculum Links

- Key Stage 2 Science: Forces
- Key Stage 2 Art
- English Years 1-6: Spoken Language

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### Session Overview

In Shark Hoist your pupils will be introduced to the world of engineering in the aquarium. We start with an introductory video showing the arrival of our Lemon Sharks, and by taking a look at the real stretchers we use to move sharks around the building.

The challenge that follows is to create a stretcher suitable for a hammerhead shark using a range of building materials and a winch system that can safely hoist the group's weighted hammerhead shark toy two meters off the ground. NOT as easy as it sounds (and it doesn't sound easy!)

At the end of the session pupils will have the chance to investigate other groups designs, and offer comparative and constructive feedback.

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### National Curriculum Links

#### Key Stage 2 Design & Technology

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- Generate, develop, model and communicate their ideas through discussion
- Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities
- Investigate and analyse a range of existing products
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

#### Key Stage 2 Science: Forces

- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

**To book, or for more information:**

Call us now on 01752 275 233 or email [justaddh2o@national-aquarium.co.uk](mailto:justaddh2o@national-aquarium.co.uk)

[www.national-aquarium.co.uk](http://www.national-aquarium.co.uk)

## Key Stage 2 Art

- Improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]

## English Years 1-6: Spoken Language

- Participate in discussions, presentations, performances, role play, improvisations and debates
- Use spoken language to develop understanding through speculating, hypothesising, imagining and exploring ideas

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## Learning Outcomes

After this session the groups should be able to:

- Investigate existing ideas and formulate new approaches to improve existing designs
- Give examples of how pulleys and other equipment can be used to achieve mechanical advantage and make tasks easier
- Work together as a team to share ideas and agree designs
- Examine their peers designs and discuss strengths and weaknesses of their own and others work

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## Pre-Visit Suggestions

- Watch some of the following videos about our real life shark moves:
  - How to move a shark? Mandela moves to the Atlantic Ocean Exhibit
    - [https://youtu.be/vcN\\_2s2KQHO](https://youtu.be/vcN_2s2KQHO)
  - New Sand Tiger Sharks Mandela & uShaka's Story
    - <https://www.youtube.com/watch?v=9cYm65GHt6Q>
  - Mandela & uShaka arrive
    - <https://www.youtube.com/watch?v=r4vKfTleF3Y>
  - Moving Mandela and uShaka to Atlantic Ocean Tank
    - <https://www.youtube.com/watch?v=Uff08c0C2PA>
  - The Big Lemon Shark Move at the National Marine Aquarium
    - <https://www.youtube.com/watch?v=bM-vakL4-7g&feature=youtu.be>

## Post-visit Suggestions

- Imagine that you are a shark being moved into our new Atlantic Ocean tank. Write an account of your experience, what happened and how you felt. Do you like your new home?
- Encourage pupils to use online and other reference materials to research different shark species create fact files for them. The Shark Trust ([www.sharktrust.co.uk](http://www.sharktrust.co.uk)) is a great source of information for this.

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