Viking catapult

General information			
Respective blueprint	Viking catapult		
Description	In this lesson, pupils will build a Viking catapult. Students will discover how it works and the historical background of its invention.		
Learning objectives	At the end of this sequence, pupils will be able to : • put the invention and development of the Viking catapult into historical context • explain the distribution of forces on a triangle		
Related curricular subjects	Mathematics – Sciences – History – Geography – Engineering		
Duration	3h		
Level of difficulty	Basic	Medium	Advanced
	☐	☐	☑
Inclusivity guidelines			
How to integrate students with SLD	• Formulate short, simple instructions that only require one action at a time. For example, assemble 3 sticks to form a triangle by placing adhesive tape at the ends. • When you give instructions (written), make sure to highlight the word of action, so pupils know what they are expected to do → In this example, **assemble** 3 sticks together to form a triangle by placing adhesive tape at the ends. • Here, it's really important to show the expected result of the manipulation. • When creating groups, try to place students who are having difficulties with students who are generally more advanced so that they can help each other (a dyspraxic student will have a lot of difficulty with cutting tasks).		
How to integrate students who work faster	Ask students to research the different types of catapults used throughout history and place them in a timeline, or they can do some research about the everyday life of Vikings. They can present their findings to the class orally or with a poster.		

Step-by-step description of the lesson

Step 1: Introduction	**Estimated time: 1 hour**

- **Class discussion – 20 min**

Ask questions to encourage curiosity: Who were the Vikings? Where did they live? What did they do? How do you recognise them? What do you know about them?

- **Images and characteristics – 20 min**

Look at images of Vikings (Viking catapult_Introduction) and discuss their characteristics (fair skin, blond hair, long hair, beard, boat).

Step 2: History and geography	**Estimated time: 1h**

- **The first possibility – 4 hours**

Suppose your pupils have already learnt Internet research skills. In that case, you can form groups of 3-4 pupils, assign each group a topic (geography and history, culture, inventions, social structure and war) and ask them to research these topics and then present them to the rest of the class.

- **The second possibility – 1 hour**

If your pupils have not yet learned how to research information, you can introduce the history of the Vikings yourself.

- **Who were the Vikings? – 20 min**

The Vikings were raiders, pirates, traders, explorers, and colonisers during the 9th to 11th century (Middle Ages).

➔ It is important to locate this period on a timeline of historical periods.

Vikings is the modern name given to seafaring people originally from Scandinavia (Denmark, Norway and Sweden)

➔ It is important to locate these countries on a European map. You can also point out your country to see if it's close (or not) to the Vikings.

The Vikings explored the seas and oceans of Europe to trade and conquer new territories. Starting in Denmark, Norway and Sweden, these sailors settled in the Faroe Islands, Iceland, Northern Greenland, Newfoundland, the Netherlands, Germany, Normandy, Italy, Scotland, England, Wales, Ireland, the Isle of Man, Estonia, Latvia, Ukraine, Russia and Turkey.

➔ If the Vikings have marked your country's history, it's worth noting what they brought and what remains of their influence.

- **Vikings and war – 30 min**

The Vikings were warriors, as evidenced by their clothing and accessories. That's why they had to develop tools to conquer other lands.
One of their great inventions is their boats.

Viking ship:

Indeed, much of the Vikings' success was due to the technical superiority of their shipbuilding. Their ships proved to be very fast. Their build was not designed for battle at sea, as this was a form of warfare that the Vikings very rarely engaged in, but these long narrow ships could accommodate 50–60 seamen who powered the ship by rowing, as well as a complement of warriors, and so able to carry sizeable forces at speed to land wherever advantageous. Due to their shallow draft, Viking ships could land directly on sandy beaches rather than docking in well-fortified harbours. Viking ships made it possible to land practically anywhere on a coast and to navigate rivers.

Viking catapult:

Another tool used by the Vikings is the catapult.
The writings of monks who lived between 500 and 1000 AD frequently recount the raids undertaken by the Vikings.
A French monk wrote that the Vikings used catapults to break through the walls of Paris.
But what's so special about Viking catapults?

Step 3: Creation of a Viking catapult	**Estimated time: 50 min**

- **Preparation – 5 min**

Form groups of 2-3 students and distribute the materials and construction plan.

- **Construction – 40 min**

The pupils follow the construction plan, with the teacher moving between the different groups to help the pupils if necessary.

- **Testing – 5 min**

When the construction is complete, the pupils can try their Viking catapult with small objects. Rules must be established for the objects chosen and the use of the catapult.

Step 4: Viking catapult	**Estimated time: 15min**

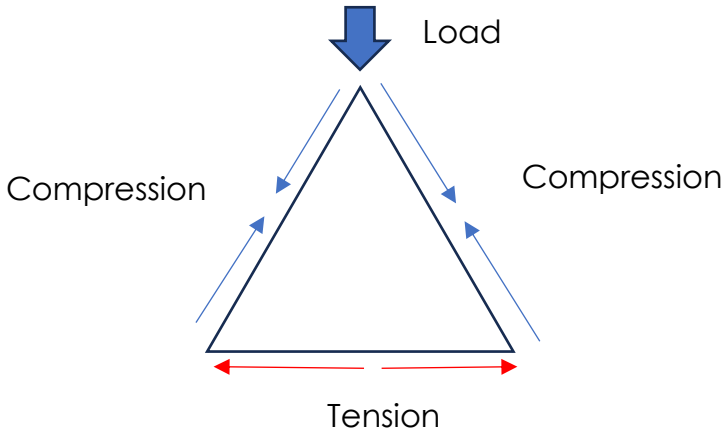
- **Discussion – 5min**

Ask the pupils: Why do you think Viking catapults were shaped like this?

What made Viking catapults more resistant?

- **Explanation – 10 min**

When a force (the load) is applied to one of the corners of a triangle, it is distributed along each side. The two sides of the triangle are crushed. Another word to describe this crushing is **compression**. The third side of the triangle is pulled or stretched along each side. Another word for this stretching is **tension**.



Assessment activities

Activity 1: Self-assessment activity

Ask the students to self-assess their performance during the group activity using the grid on page 6.
Self-assessment encourages learning and improves performance. Self-evaluation is systematically formative. Its aim is to highlight areas for improvement.

Activity 2: End of sequence assessment

After a long sequence (of several sessions), it may be useful to carry out a formative (or certificate) assessment of the knowledge acquired. Here are some examples of questions you could ask.

1. Describe in a few sentences who were the Vikings.
2. During what period of history did the Vikings live?
3. Explain briefly why Viking catapults were so strong.
4. Give the names of the (present-day) countries from which the Vikings came and locate them on a map of Europe.
5. List the advantages of Viking ships.

Attachments

- Self-assessment grid
- Introduction – Viking images

References

- Pourquoi un triangle est-il une forme si solide? | Parlons sciences. (2020, août 17). https://parlonssciences.ca/ressources-pedagogiques/documents-dinformation/pourquoi-un-triangle-est-il-une-forme-si-solide
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- Young, J. (2014). All About Catapults. prezi.com. https://prezi.com/j2vokvfevlm8/all-about-catapults/

Introduction – Viking images

Figure 1 Canva https://www.canva.com/photos/MACAK58LasM/

Figure 2 Canva https://www.canva.com/photos/MAEJeY5xMdQ/

Figure 3 Canva https://www.canva.com/photos/MACFT_GPpbA/

Figure 4 Canva https://www.canva.com/photos/MACAK58LasM/

Figure 5 Canva https://www.canva.com/photos/MAB-CLU_I_I/

Figure 6 Canva https://www.canva.com/photos/MAEJeY5xMdQ/

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Self-assessment grid

Work in group

	☺	😐	☹
I took part in organising and carrying out the task.			
I cooperated actively within the group.			
I respected the other group members at all times.			
I was able to recognise and accept the skills and knowledge of the other members of the group.			
Everyone took part in our group discussions			
We asked the other members of our group for help when we needed it.			
I respected the deadlines			
I've finished my work.			
I've made an effort and I did my best			
I knew how to ask for help when I needed it			
The manipulation helped me understand the concepts			
I'm proud of my work and the result I've achieved			
I enjoyed taking part of this activity !			

☺ = Absolutely / 😐 = Partially / ☹ = Not at all

Teacher's comments :

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STEAM IN TIMES

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