

How Long was a Longship?

Health and Safety

Always follow the health and safety policy in school and carry out a risk assessment.

Background Information

The Vikings were expert ship builders. They designed their ships to be able to sail in rivers, fjords and the sea. Their largest, fastest ships were called longships, which they used for exploring and fighting. They were about 30 m long and 5 m wide.

Activity 1: Estimation and measure

Learning Intentions

Children are learning how to:

- review their work and check for accuracy;
- use appropriate mathematical language to discuss their work and explain their thinking; and
- estimate and measure length, working to an appropriate degree of accuracy.

Equipment

- various measuring devices such as metre rulers, trundle wheels, tapes and string.

Activity

1. Take the class outside or into the assembly hall with a variety of measuring devices.
2. Ask the pupils to work in groups of two or three.
3. Ask each group to decide where 30 m is from a fixed starting point.
4. Invite a representative from each group to walk to and stand at the point they have decided. Another member of each group should then measure out the actual 30 m to see how close their estimate was.
5. Bring the class together and mark out the length of it with string. (Keep the string for Activity 4).
6. Discuss and compare the estimates with the actual measurement. (Keep a record of each group's estimates for Activity 4).

7. Talk to the pupils about the actual size of a Viking longship:
 - Would a Viking longship fit into the classroom?
 - How long is a car? How many of these cars would fit into a longship?
 - How long is a bicycle? How many of these bikes would fit into a longship?
 - How many of their paces fit into a longship? Is this the same number for everyone in their group?

Activity 2: Plan drawing and scale

Learning Intentions

Children are learning how to:

- use appropriate mathematical language to discuss their work and explain their thinking;
- decide how an activity might be approached and compare their approaches with others; and
- understand and use scale in the context of simple drawings.

Equipment

- centimetre squared paper, rulers
- various measuring devices such as metre rulers, trundle wheels, tapes and string.
- one copy of Resource 2 for each group (plan view of a Viking longship).

Activity

1. Look at images showing Viking longships. Talk about the shape of the ships.
2. Ask the pupils to get into their groups from the previous activity.
3. Give each group centimetre squared paper and rulers.
4. Remind the pupils that Viking longships were typically 30 m long and measured about 5 m at their widest point.
5. Ask each group to work together to draw a plan for a longship on the squared paper.

6. Talk to the pupils about what they took into account when drawing the plan:
 - What were the challenges?
 - How did they solve these problems?
 - How well do they think their plan turned out?
 - Discuss plan features such as scale, accuracy and detail.
7. Give pupils the sample longship plan (Resource 2). Ask pupils to work out what scale has been used. (Remember that the length is 30 m and the widest point is 5 m).
8. They should add the scale to the bottom of the plan using a standard format. (Keep Resource 2 with the scale marked on it for Activity 3).

Activity 3: Finding the area

Learning Intentions

Children are learning how to:

- use a range of appropriate mathematical techniques;
- estimate area of shapes by counting squares; and
- divide whole numbers using a range of mental, written and calculator methods.

Equipment

- copies of Resource 2 from Activity 2
- calculator, if required.

Activity

1. Ask the pupils to get into their groups from the previous activity.
2. Distribute the Viking longship plan from Activity 2.
3. Ask each group to estimate the area of the 'real life' longship. Remind them of the scale they marked on the plan in Activity 2.
4. Talk to the pupils about how they estimated the area:
 - What worked well?
 - What were the challenges?
 - How did they solve these problems?
 - How accurate do they think their estimation is?
 - Discuss the rule that any square that is half or more than half inside the longship should be counted as a whole square.
 - Ask them to recheck their estimation and compare outcomes across the class.

5. Ask the pupils to agree as a class on what the area of a typical Viking longship would be, and record this on the bottom of the plan. Tell the pupils that it was common for 60 Vikings to be on board one longship at any given time!
6. Ask them to calculate the area available for each Viking to live on board.
7. Discuss how the pupils calculated the area for each Viking:
 - Are they pleased with the outcome?
 - What were the challenges?
 - How did they solve these problems?
 - Did everyone in the class agree?
8. Ask the pupils to agree as a class on the size of the area available for each Viking and record this on the bottom of the plan. (Keep copies of Resource 2 with the scale and the areas marked on them for Activity 4).

Activity 4: Estimation and measure

Learning Intentions

Children are learning how to:

- use appropriate mathematical language to discuss their work and explain their thinking;
- decide how they might approach an activity and compare their approaches with each other; and
- estimate and measure length, working to an appropriate degree of accuracy.

Equipment

- string and estimates from Activity 1
- copies of Resource 2 from previous activities
- chalk or skipping ropes to mark the outline of the longship
- schoolbags.

Activity

1. Take the class outside or into the assembly hall with the equipment.
2. Tell the pupils that they are now going to repeat part of Activity 1, when they estimated and then measured where 30 m is from a fixed starting point.
3. Encourage them to reflect on their previous experience: how many paces in 30 m? Ask them to plan how they will approach this task second time around.



4. Ask for a volunteer(s) to estimate where 30 m is from a fixed starting point.
5. Give another volunteer one of the strings from Activity 1.
6. Ask the pupils to compare the estimates with the actual measurement:
 - How accurate was their estimate this time?
 - Was their estimate closer than during Activity 1?
 - Why do they think this is?Ask the class to work together to mark the outline of the whole longship using the chalk or skipping ropes. Remind them to review the scale and area marked on Resource 2.
7. Talk to the pupils about how they marked the outline:
 - Did their outline look like the plan on Resource 2?
 - Do they need to make any changes?
 - What worked well?
 - Were there any challenges?
 - How did they solve these problems?
 - Did everyone in the class agree?
8. Encourage the whole class to get 'on board' the longship with their school bags (to represent the personal possessions that each Viking would have brought with them).
9. Discuss with the pupils how cramped it would have been on board and remind them that up to 60 adult Vikings would have been there at one time.



RESOURCE 2: Plan view of a Viking Longship

