

Date	Class level Sixth Class	Subject Mathematics
<b>Strand</b> Data		<b>Strand Unit</b> Representing and Interpreting Data
<b>Title</b> Interpreting Data about Prawns landed in Irish waters.		
<b>Objective(s)</b> The aim of the lesson plan is for the children to be able to read and interpret trend graphs. Using data collected from the Irish fishing ports (Dublin prawns), the children will compile and use simple data sets and explore and calculate averages of simple data sets.		
<b>Skills Required</b> Recall, estimation, analysis, recording.		
<p><b>Learning objectives</b></p> <p>The child should be enabled to:</p> <p>Examine a data set.</p> <p>Read the information supplied.</p> <p>Plot and draw a trend graph to illustrate the information.</p> <p>Explore and calculate the averages of the data set given.</p>	<p><b>Learning activities</b></p> <p><b>Talk and Discussion:</b></p> <p>Recall the language and prior knowledge of graphs – pictograms, block graphs, horizontal and vertical bar charts. Introduce the concept of trend graphs. Discuss their uses.</p> <p>If possible examine an example of a trend graph from a newspaper, magazine etc.</p> <p>Discuss how data about animals that are caught in Irish waters is collected by fishermen and marine scientists. See <i>Atlas of Commercial Fisheries around Ireland – second ed. March 2014</i> (<a href="http://www.marine.ie">www.marine.ie</a>), for samples of maps using the data collected.</p> <p>The Marine Institute also produce an annual <i>Stock Book</i> which contains data about our commercial fish stocks in Ireland. This is very important work, as it tells us what the state of our fishing stocks is like and if they are being fished sustainably.</p> <p>The scientists collect a range of data about Ireland’s fish stocks (e.g. population size, age, sex of fish etc.) so they can assess the sustainability of our</p>	

fish stocks and the environment. They assess the data collected and then provide advice to the Irish Government who negotiates Ireland's fishing quotas in Europe each year. Each year the fishermen are then given a 'Total Allowable Catch' of the different species of commercial fish they can catch in Irish waters.

Discuss with the students what fish they think are "commercial" fish. Discuss why it is important to collect data on the fish stocks.

- If the data collected over a number of years shows that stock sizes are growing – what advice can the scientists provide?
- If a trend graphs shows that a the species is declining – what sort of advice should the scientists provide?
- Who might find the information / data that the scientists gather each year important?

Using the Irish *Nephrops* (prawns) fisheries as an example, discuss how this commercial species is extremely valuable to Ireland. With landings in recent years, worth around €34m at first sale, it supports an important indigenous processing industry in Ireland.

**Pair Work:**

Divide the class into pairs.  
Distribute the data to each pair.  
Discuss the information given. Elicit from the children what must be included in a trend graph-title, scale etc.  
Model the drawing of a trend graph on the whiteboard.

**Worksheet:**

Allow the children to work in pairs to

	<p>complete the attached worksheet. Each pair is then given the opportunity to share the information and procedure with the whole class.</p>
	<p><b>Resources</b></p> <p><i>Atlas of Commercial Fisheries around Ireland – second ed. March 2014 (<a href="http://www.marine.ie">www.marine.ie</a>).</i></p> <p>Also see information about prawns “Nephrops Under Water TV Surveys” on the Marine Institute website which provides information on nephrops fishing grounds in Ireland, movie footage of prawns etc.</p> <p>Graph paper</p> <p>Data set (attached on worksheet).</p> <p>Pencils and rulers.</p> <p>Colour pencils</p> <p>Worksheet (attached)</p>
<p><b>Differentiation</b> Paired work.</p>	
<p><b>Assessment</b> Question and answer. Oral feedback from children, teacher observation. Teacher check, pupil work samples.</p>	
<p><b>Linkage and Integration</b> English- Oral language: Discussion based on the findings of the class regarding the average of the data set. Opinions and reasons for their answers. Geography: Fishing in Ireland. SPHE: Healthy eating. The importance of fish in our diet and the benefits which eating fish can bring. English: Procedural Writing- Recipe</p>	

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Answer the following questions:																																																																																		
<ol style="list-style-type: none"> <li>1. Calculate the total number of tonnes of prawns landed from 1999-2012.</li> <li>2. Calculate the average number of tonnes of prawns landed during those years of all the countries listed.</li> <li>3. Calculate each countries average number of prawns landed. Which of the three countries were:             <ol style="list-style-type: none"> <li>a. Above the total average</li> <li>b. Below the total average.</li> </ol> </li> <li>4. Using the data for the Republic of Ireland, suggest a reason why the number of prawns caught in the Smalls area is greater than that of either France or the UK.</li> </ol> <hr style="border: 0; border-top: 1px solid black; margin-top: 10px;"/> <hr style="border: 0; border-top: 1px solid black; margin-top: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-top: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-top: 5px;"/>																																																																																		

5. Explain why the 'Total Allowable Catch' of Prawns that fishermen are given each year important for Ireland's commercial fishing industry?

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6. Create a trend graph showing the data collected from the different countries. Explain what is happening with the landings of prawns from each country.

7. Match up the names given to the prawn from other countries:

Cloicheán, дублинская креветка, Homarzes norweski, Lagostim, Cigala, Dublin Bay prawn, Norway lobster, Langoustine

Country	Name of Prawn:
Irish	
English	
Spanish	
French	
Portuguese	
Polish	
Russian	

8. The map below shows the areas where the Marine Institute has conducted surveys to collect data from the different prawn grounds in Irish waters. Can you locate the different areas, oceans and seas on the map below? To help you out, go to the Marine Institute website [www.marine.ie](http://www.marine.ie) and look for information on “Nephrops Under Water TV Surveys”.

15. \_\_\_\_\_

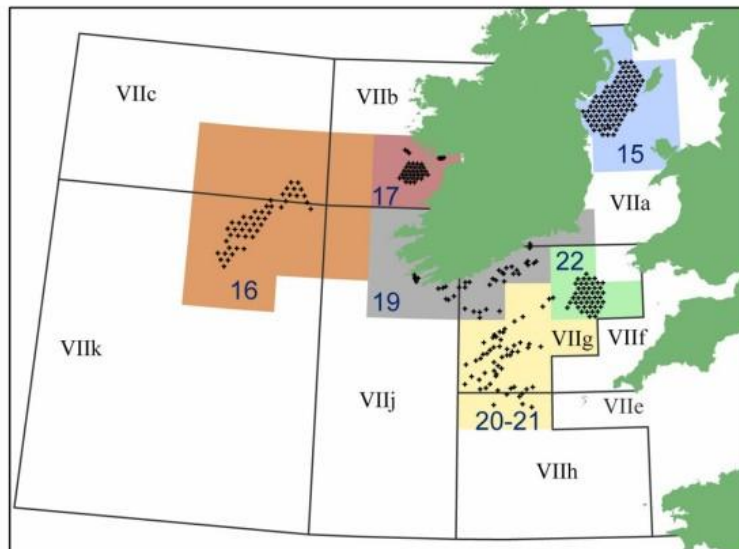
16. \_\_\_\_\_

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*Areas Covered During the Marine Institute Nephrops UWTV Surveys*