### TOPIC: Plotting Points in Baltimore Harbor

**Teacher:** Mrs. Jose

<table>
<thead>
<tr>
<th>Instructional Objective</th>
<th>At the end of the session, the students will be able to use a nautical chart of Baltimore Harbor to give the approximate coordinates of specific markers, navigational aids, and other points of interest.</th>
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</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
<td>Nautical Chart 12281 – Baltimore Harbor, Maryland Cruising Guide 2010-2011</td>
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<tr>
<td><strong>Strategies</strong></td>
<td>Cooperative Learning</td>
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<td><strong>Prerequisite</strong></td>
<td>Point plotting on a coordinate grid</td>
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<tr>
<td><strong>The DRILL/ Warm-Up 5%</strong></td>
<td>Match the given coordinates to the point on the graph on the right, by labeling the point with the letter that corresponds to the coordinate.</td>
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<tr>
<td></td>
<td><img src="image" alt="Coordinate Grid" /></td>
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<tr>
<td>A (-1, 1)</td>
<td>F (0, 2)</td>
</tr>
<tr>
<td>B (-2, -3)</td>
<td>G (2, -4)</td>
</tr>
<tr>
<td>C (-3, 5)</td>
<td>H (3, 5)</td>
</tr>
<tr>
<td>D (-4, 0)</td>
<td>I (4, 2)</td>
</tr>
<tr>
<td>E (-5, -4)</td>
<td>J (5, -3)</td>
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<tr>
<td><strong>The LAUNCH 15%</strong></td>
<td>How will you determine the exact/approximate location of markers, navigational aids, or other points of interest on a nautical chart?</td>
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<td><strong>Mini-Lesson/ Engagement/ Exploration</strong></td>
<td>Introduce Chart No. 17 from the Maryland Cruising Guide. Model how to determine the LON-LAT for certain markers, navigational aids from the chart. Emphasize that x-coordinates refer to the LON and y-coordinates refer to the LAT. Locations have to be given in the LON-LAT form.</td>
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<td><strong>Example:</strong></td>
<td>Give the exact location by providing the LON-LAT of the following:</td>
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<tr>
<td>a. G “13” by Belmont Bay</td>
<td>a. USCG Station by Gunston Cove</td>
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<tr>
<td>b. Obstruction by Occoquan Bay</td>
<td>b. Marker “PRV12C” by Clifton Point</td>
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<td><strong>Guided Practice:</strong></td>
<td>Give the exact location by providing the LON-LAT of the following:</td>
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<tr>
<td>The WORK SESSION 60% (individual, partner, small group)</td>
<td>Students will work in groups with 4 members each. Each group will be given Nautical Chart 12281 of Baltimore Harbor. Give the exact location by providing the LON-LAT of the following:</td>
</tr>
<tr>
<td></td>
<td>a. Abandoned Lighthouse near Ft Carroll</td>
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<td></td>
<td>b. Fishing Pt Shoal near the Curtis Bay Channel</td>
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<td></td>
<td>c. G “11” by Brewerton Channel</td>
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<td></td>
<td>d. Long Pt near Bullneck Cr and Peach Orchard Cove</td>
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<td></td>
<td>e. Cable Area by Colgate Ck near Seagirt Marine Terminal</td>
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<td></td>
<td>f. Spire near Canton</td>
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<td></td>
<td>g. Pier 1 by the East Channel</td>
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<td>h. F G 38ft near Hawkins Pt Shoal</td>
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<td></td>
<td>i. Iso R 10s 113 ft near Northwest Harbor</td>
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<td></td>
<td>j. Fort McHenry</td>
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<td>The SUMMARY 20%</td>
<td>How did your group determine the exact/approximate location of markers, navigational aids, or other points of interest on a nautical chart? What strategies did your group use in working on the given activity?</td>
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<tr>
<td><strong>Accommodation</strong></td>
<td>Students will be grouped with 1 strong, 2 regular and 1 special need student.</td>
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<td><strong>Assessment</strong></td>
<td>Written work of students on the activity, to be discussed as a class, for immediate feedback.</td>
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