DOES SALT WATER FREEZE?

You'll need
- Two small plastic bottles
- Water
- Salt
- A freezer

Instructions
Place the same amount of water into each bottle.

Add two tablespoons of salt to one bottle and label the bottle.

Label the second bottle.

Place both bottles in a freezer and check them every 30 minutes.

You should find the salty water isn't as frozen as the plain water.

What's going on?
Freshwater freezes at 0\(^\circ\)C. The presence of salt lowers the freezing point of water. The higher the salt content in the water, the lower the freezing point.

Seawater freezes at around -1.8\(^\circ\)C, although this varies depending on the salt concentration.

Science Sparks™
Adult supervision required. You are responsible for your own safety.
www.sciencesparks.com
Does salt water freeze?

Aim - to find out if adding salt to water lowers its freezing point.

**I will need**

**Prediction**

The bottle containing ........................................

will freeze faster than the bottle containing ..............................

**Method**

**Results**

The bottle containing ........................................

froze faster than the bottle containing ..............................

**My prediction was..**

Correct [ ]

Incorrect [ ]

**Notes**
## Results Table

### Salty Water

<table>
<thead>
<tr>
<th></th>
<th>30 minutes</th>
<th>60 minutes</th>
<th>90 minutes</th>
<th>120 minutes</th>
<th>150 minutes</th>
<th>180 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not frozen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting to freeze</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Half Frozen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completely Frozen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Plain Water

<table>
<thead>
<tr>
<th></th>
<th>30 minutes</th>
<th>60 minutes</th>
<th>90 minutes</th>
<th>120 minutes</th>
<th>150 minutes</th>
<th>180 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not frozen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting to freeze</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Half Frozen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completely Frozen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Conclusion

The bottle containing ...............................  
froze faster than the bottle containing ...............................