

# Scientific Respiratory Experiment

**The scenario:**

A group of scientists note that some fish in the aquarium seem to move their gills less (i.e. breathe less) and slow their swimming movements in different tanks. It is suggested that it might be to do with the water temperature. Another group of scientists (you) decide to test whether the temperature of the water affects the breathing rate of fish.

**The hypothesis:**

*WHAT IS YOUR HYPOTHESIS??*

*Your hypothesis clearly states what your predicted outcomes of the investigation are. For example, do you think cold, warm or ambient water temperature will increase the breathing rate of fish? Which temperature do you predict will have greatest effect on the breathing rate of fish?? Give your reasoning!*

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**Method:**

1. Observe one of the fish in the holding tank, ambient temperature. Note the movement of its mouth and operculum (gill cover). These movements indicate the fish's respiration rate.
2. Count the number of operculum movements for one minute. Repeat this procedure two more times allowing for a small break in between. Record results in the table below.
3. Repeat step 2 for the other tanks.

**Results:**

Temperature (°C)	Breaths per Minute			AVERAGE Breaths/minute
	1	2	3	



What is the normal temperature range for these fish?

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Why is it important that temperature and salinity is constant in all tanks?

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What effect did temperature have on the respiration rate of the fish you observed?

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Suggest a reason for the change of respiration rates of fish at different temperatures.

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Compare your results with those of other groups. If there are any significant differences, explain why this could have occurred.

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