

# What kinds of creatures live in the sea?

## Task 1

How can you classify the following creatures?

① Salmon



② Eel



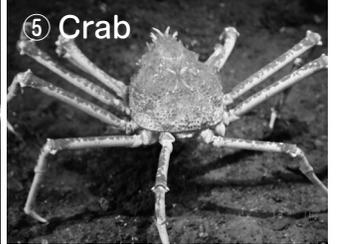
③ Squid



④ Tuna



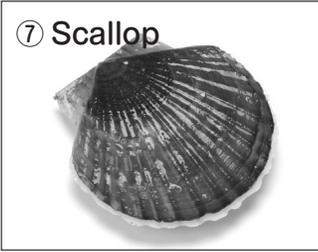
⑤ Crab



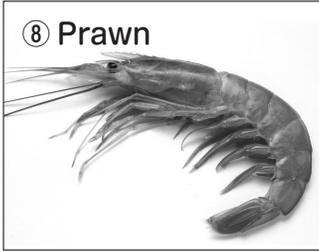
⑥ Whale



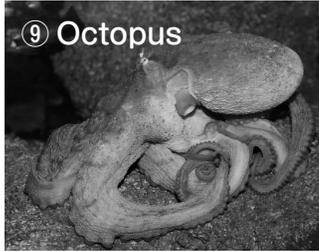
⑦ Scallop



⑧ Prawn



⑨ Octopus



⑩ Dolphin



## Task 2

What other creatures belong to the classifications you made in Task 1?

## Task 3

Write down your thoughts to the Research Question.

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# How does the sea sustain our eating habits?

## Task 1

List sea products that you eat regularly. Where and how many of them are they caught?

## Task 2

How are the food products you listed in Task 1 transported from the sea to your dining table?

## Task 3

Write down your thoughts to the Research Question.

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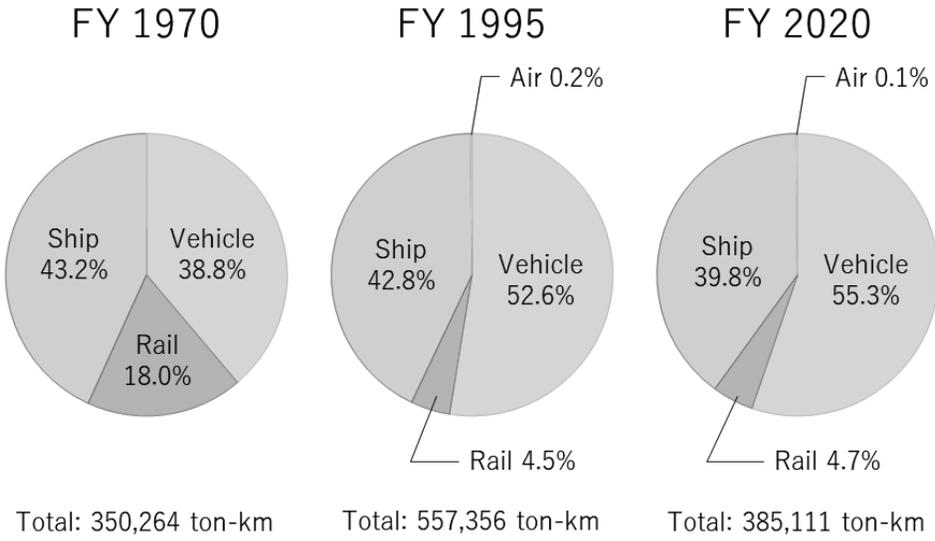
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Worksheet **3**

# Why is transportation by ship so important for Japan?

## Task 1

The following charts show transportation used in Japan in different eras. What do you learn from this?



Source: "Changes in Freight Tonne Kilometers by Transportation Means" from MLIT Traffic-Related Statistics

## Task 2

What are the advantages of transportation by ship?

## Task 3

Write down your thoughts to the Research Question.

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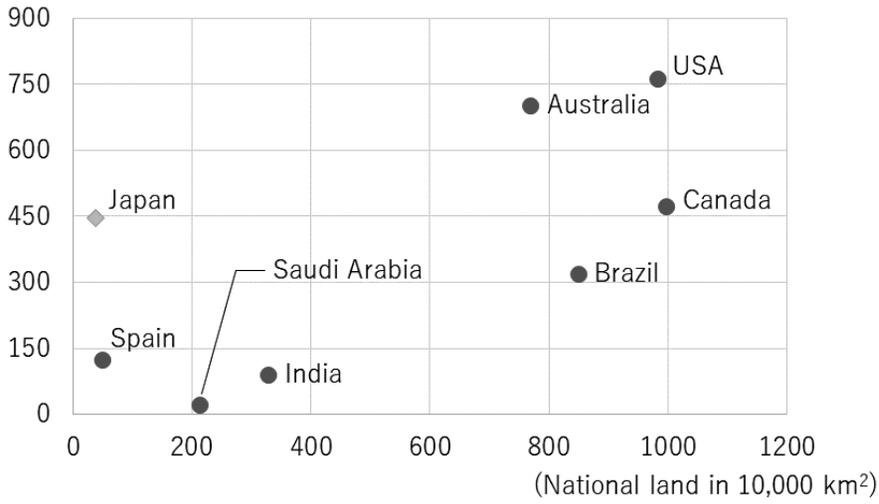
# What are the possibilities from ocean resources?

## Task 1

What do you learn from the following chart?

Gross areas of national land and exclusive economic zones (EEZ)

(EEZ in 10,000 km<sup>2</sup>)



Source: Territorial waters data of Japan Coast Guard ([https://www1.kaiho.mlit.go.jp/ryokai/ryokai\\_setsuzoku.html](https://www1.kaiho.mlit.go.jp/ryokai/ryokai_setsuzoku.html)) for Japan's EEZ area and "Limits in the Seas - Theoretical Area Allocations of Seabed to Coastal States, No.46 (1972)" published by the US Department of State for EEZ areas of the other countries

## Task 2

What kinds of ocean resources are there?

## Task 3

Write down your thoughts to the Research Question.

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Worksheet **5**

# What is causing the number of sea creatures to decrease?

## Task 1

What do you learn from the following pictures?



## Task 2

Study negative changes for sea creatures and the causes of change.

## Task 3

Write down your thoughts to the Research Question.

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Worksheet **6**

# How are global environmental issues and the ocean related?

## Task 1

How do global environmental issues affect the ocean and living things in the ocean?

## Task 2

What functions of the ocean work against global warming?

## Task 3

Write down your thoughts to the Research Question.

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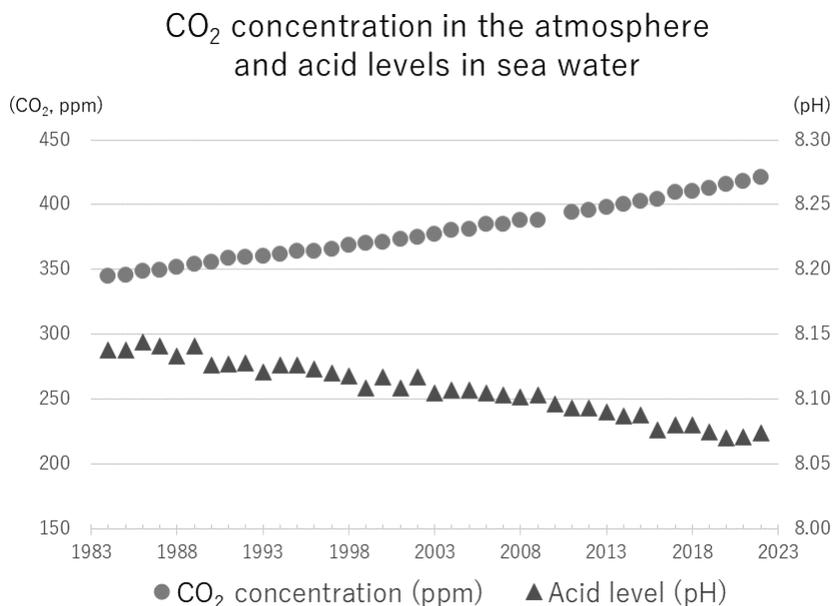
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# What changes occur in the ocean when the carbon dioxide level in the atmosphere rises?

## Task 1

What do you learn from the following chart?



Source: "Average carbon dioxide concentration and average pH levels along the 137th parallel of latitude (from 7 to 33 degrees north latitude) in winter" published by Japan Meteorological Agency

## Task 2

What changes occur in sea creatures when the acid level of sea waters changes?

## Task 3

Write down your thoughts to the Research Question.

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# What can we do to conserve the ocean's diversity?

## Task 1

Thinking about what you have learned so far, what can you do or would you like to do to protect the ocean's diversity?

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### see also



- Efforts of JAMSTEC toward SDGs  
<https://www.jamstec.go.jp/sdgs/j/>



- UN Decade of Ocean Science for Sustainable Development  
[https://www.jamstec.go.jp/rigc/j/pdf/JAMSTEC\\_SDGs\\_Pamphlet\\_Web.pdf](https://www.jamstec.go.jp/rigc/j/pdf/JAMSTEC_SDGs_Pamphlet_Web.pdf)



- "Marine Debris AI" to detect debris from coastal photos  
<https://www.jamstec.go.jp/j/pr/topics/20220600/>



- What are ocean-friendly materials?  
<https://www.jamstec.go.jp/j/pr/topics/20220608/>



- Deep-sea VR - Landing on the sea bed (special edition)  
<https://www.youtube.com/watch?v=uEr30Viwis8>



Grade:                  Class:                  No.:                  Name:

**Review**

# Review Sheet 1

Write about what you have learned, any questions that remain unresolved, and your thoughts.

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**Review**

# Review Sheet 2

Write about what you have learned, any questions that remain unresolved, and your thoughts.

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**Supplement**

# Connecting with Things around You 1

How does what you have learned/will learn from this text relate to things around you and your life? Write down your thoughts.

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**Supplement**

# Connecting with Things around You 2

How does what you have learned/will learn from this text relate to things around you and your life? Write down your thoughts.

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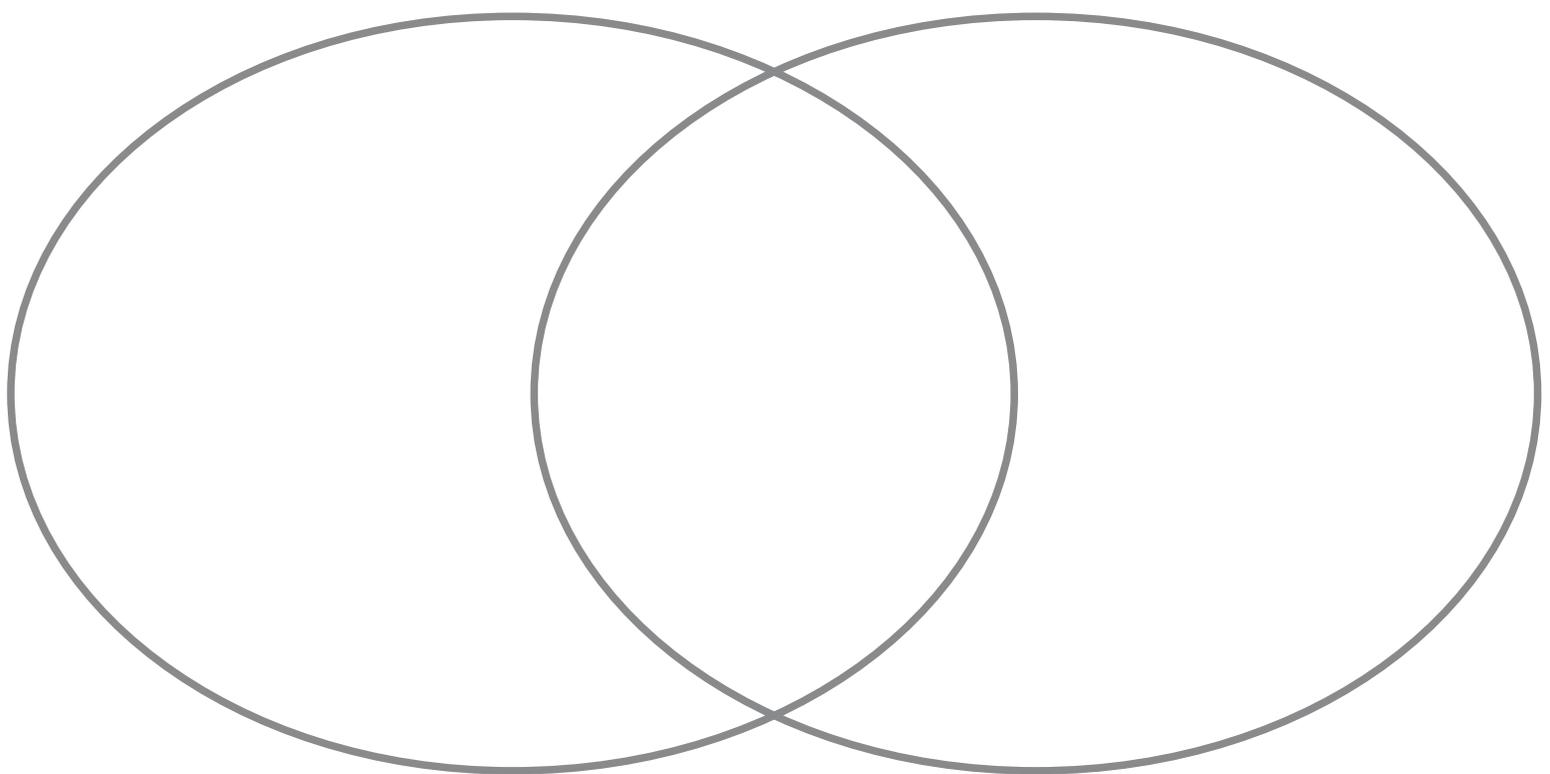
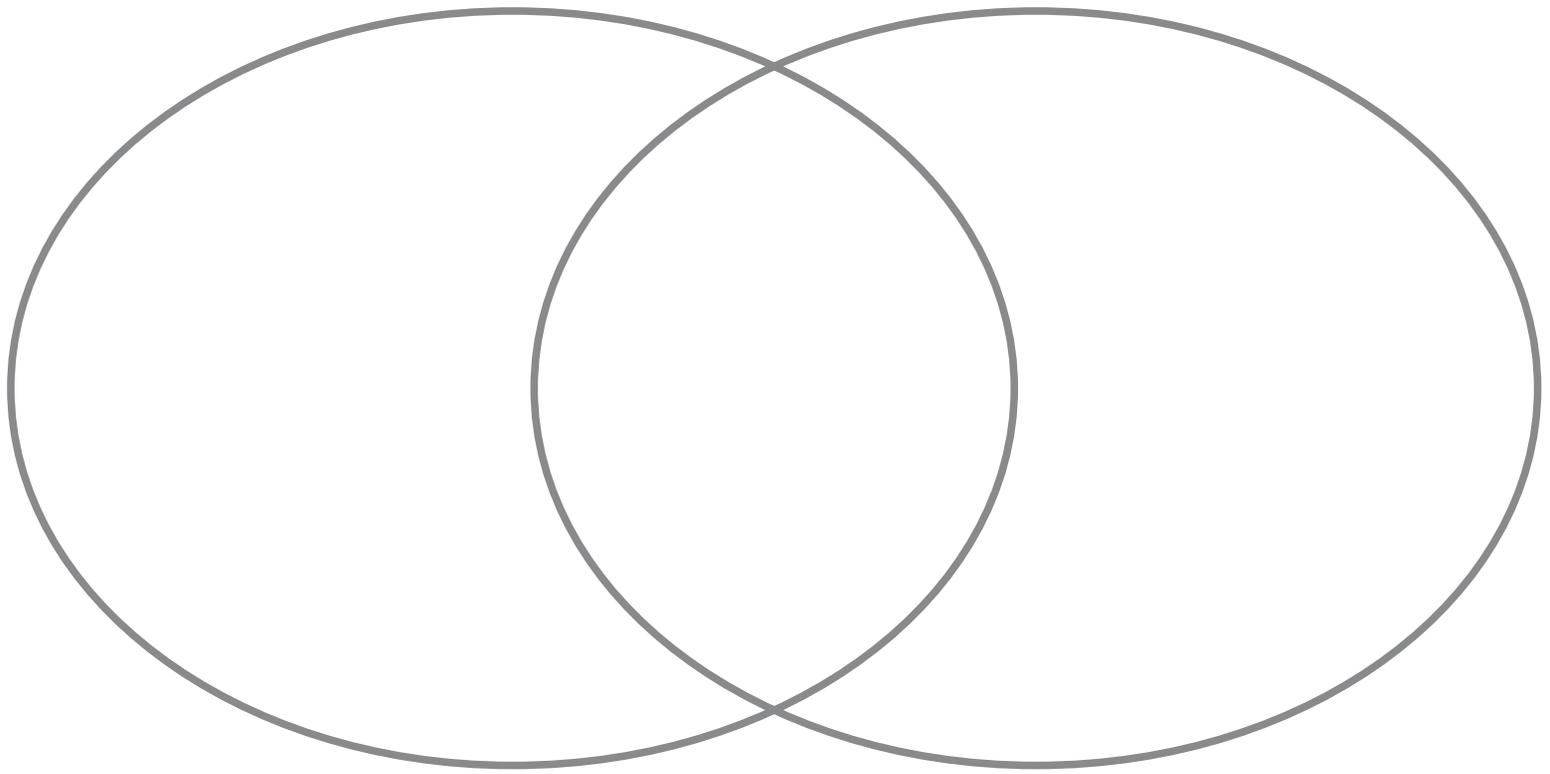
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Thinking Tool

# Venn Diagram

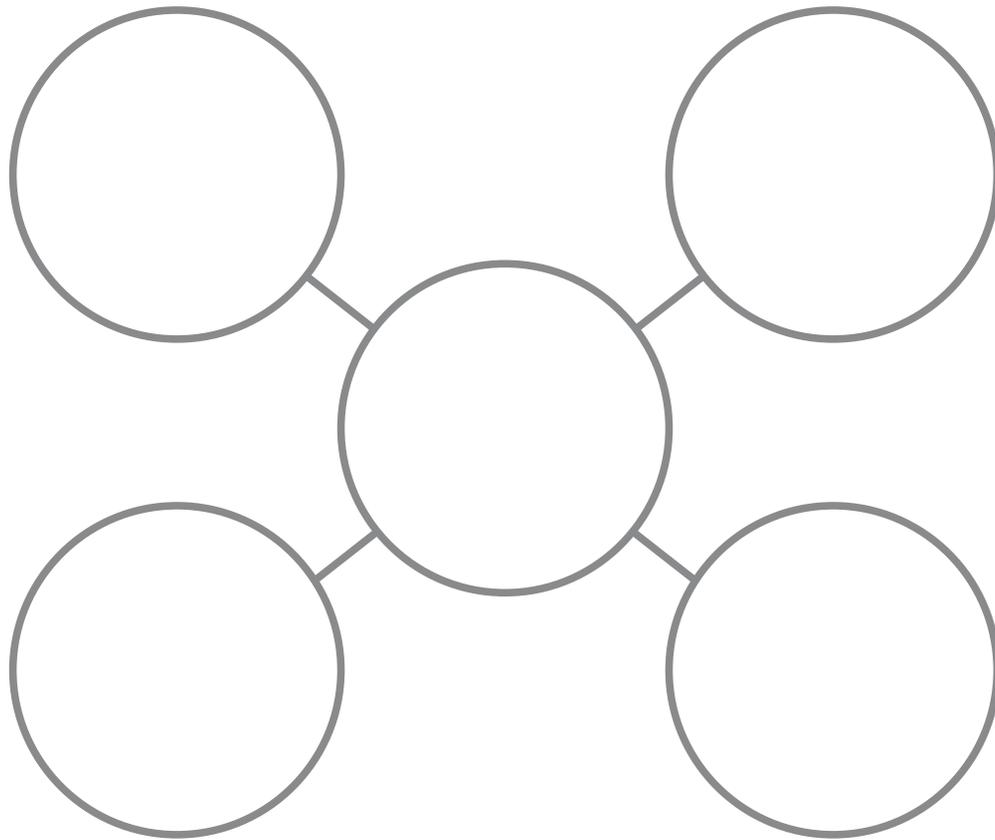




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**Thinking Tool**

# Image Map





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# Bear Hand Chart

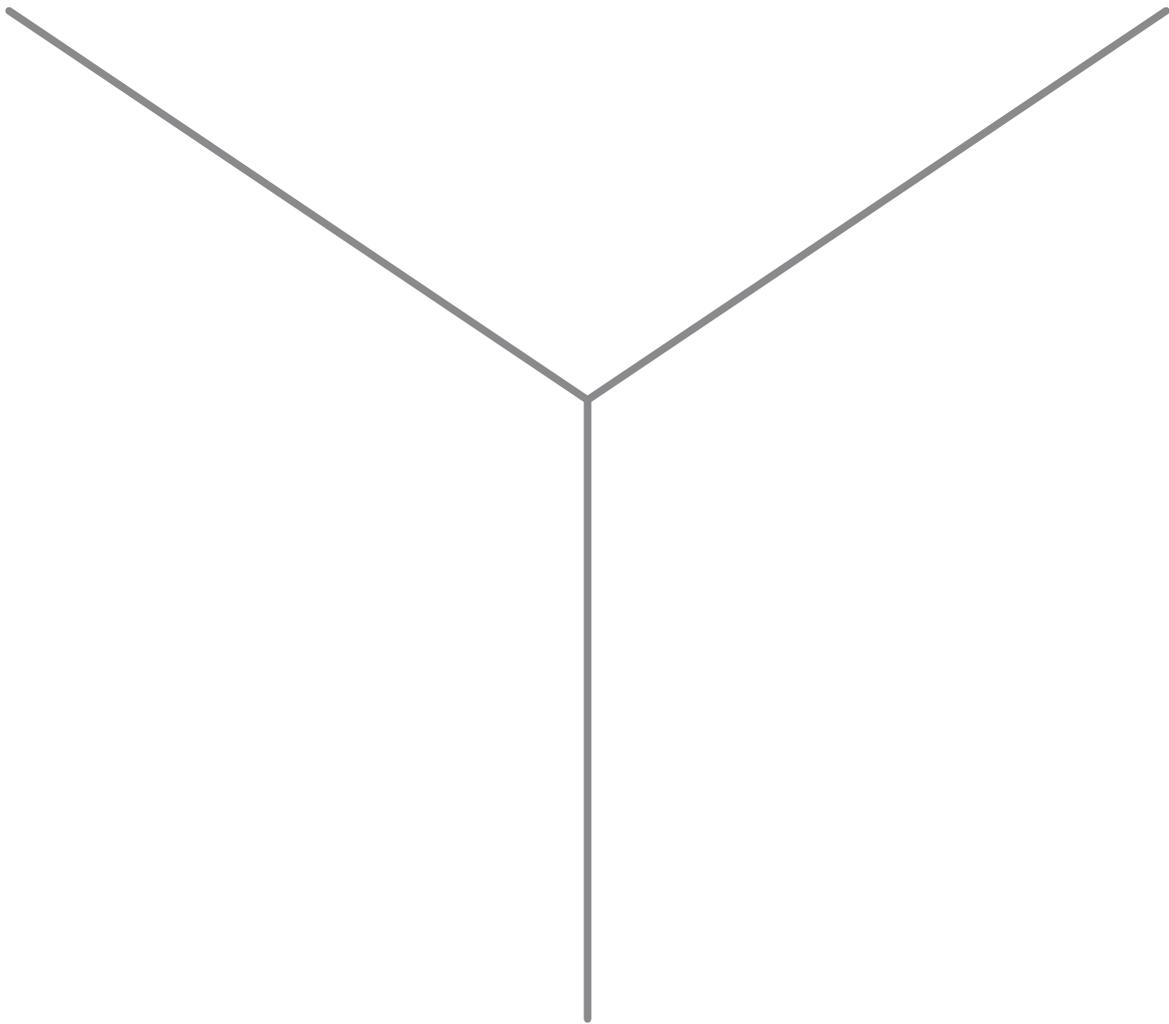
A template for a Bear Hand Chart. It consists of a central vertical line that is slightly slanted to the left. From the top of this line, a horizontal line extends to the right. From the bottom of the central line, another horizontal line extends to the right. These two horizontal lines are connected by a diagonal line on the left side, forming a trapezoidal shape. This shape is repeated three times, creating a total of four horizontal lines for writing.A second template for a Bear Hand Chart, identical in structure to the first one. It features a central vertical line, a top horizontal line, a bottom horizontal line, and a connecting diagonal line on the left, resulting in four horizontal lines for writing.



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# Y Chart

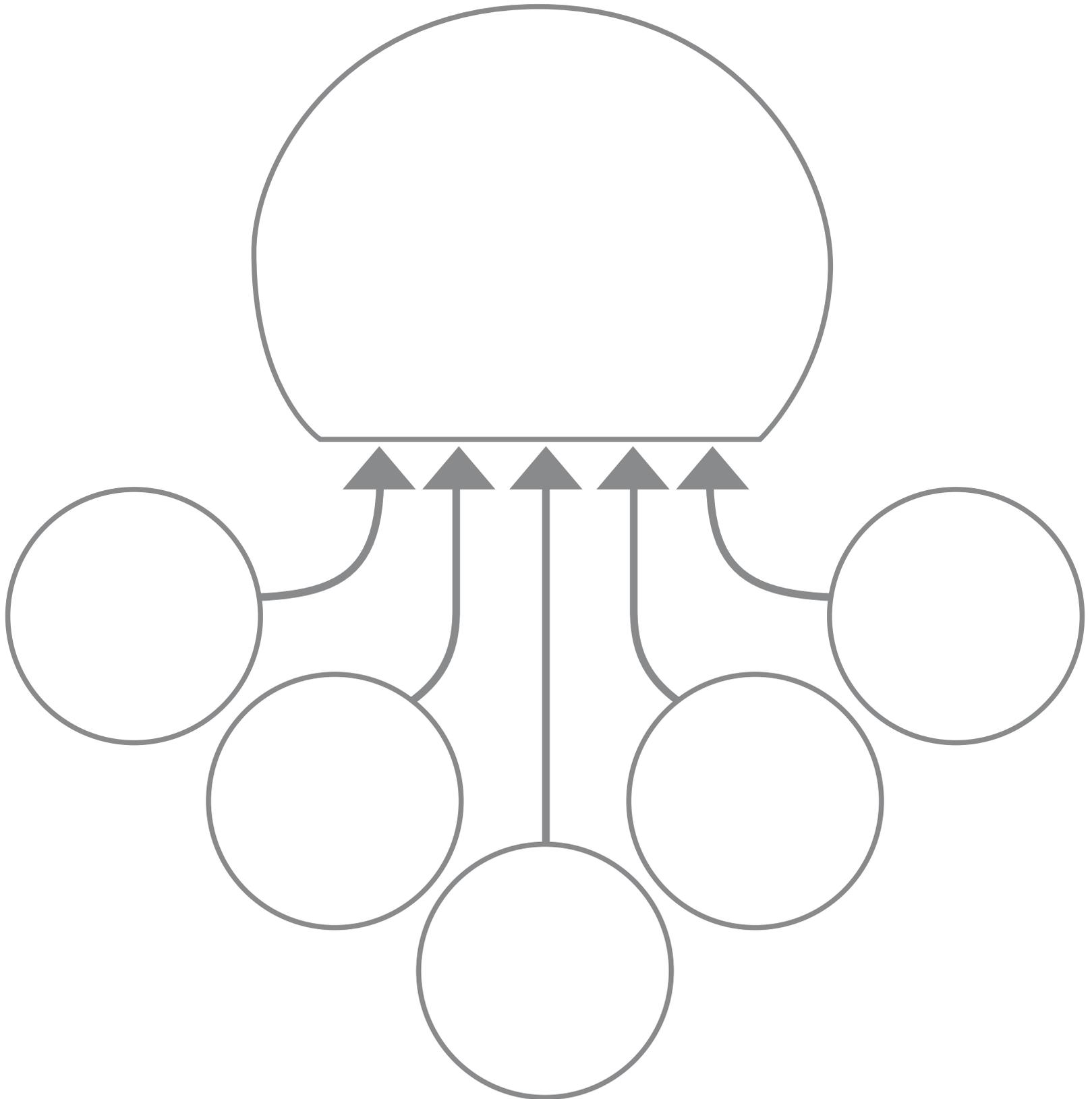




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# Jellyfish Chart





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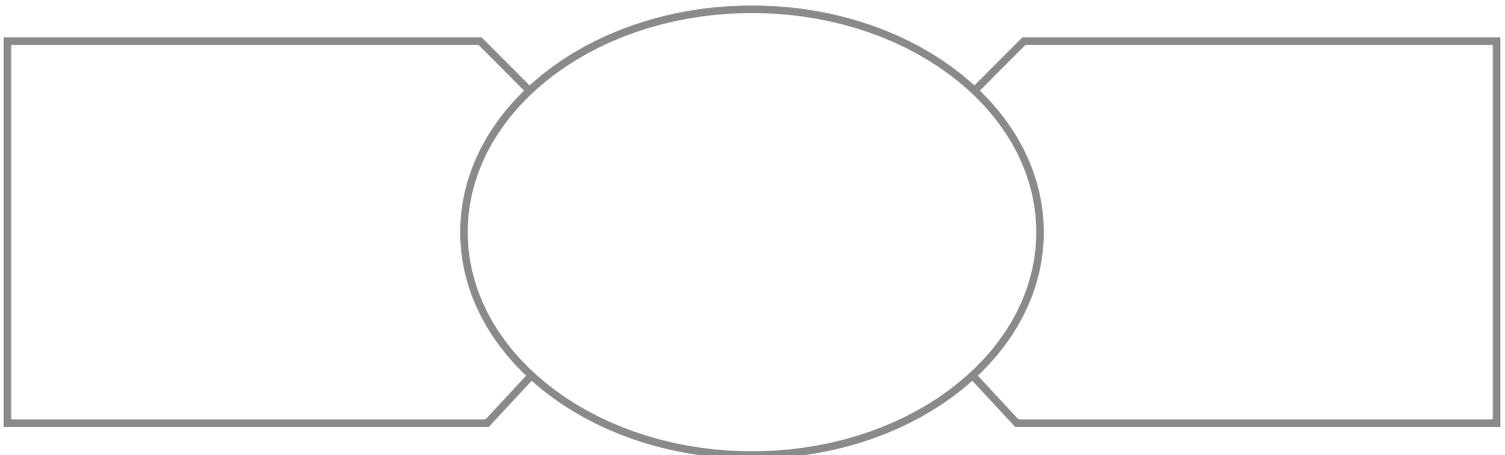
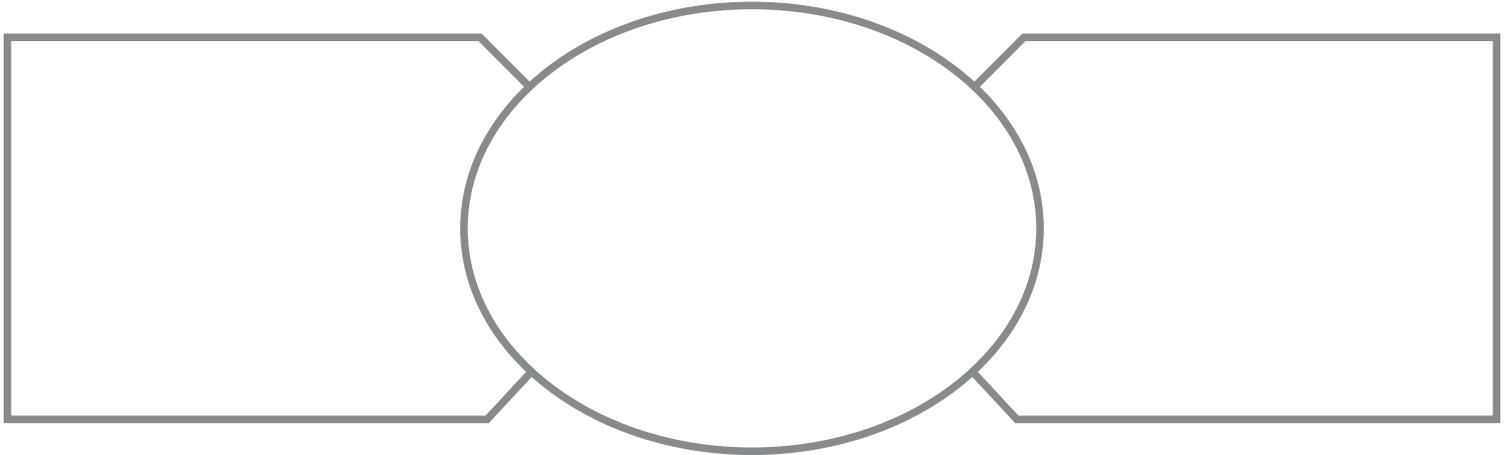
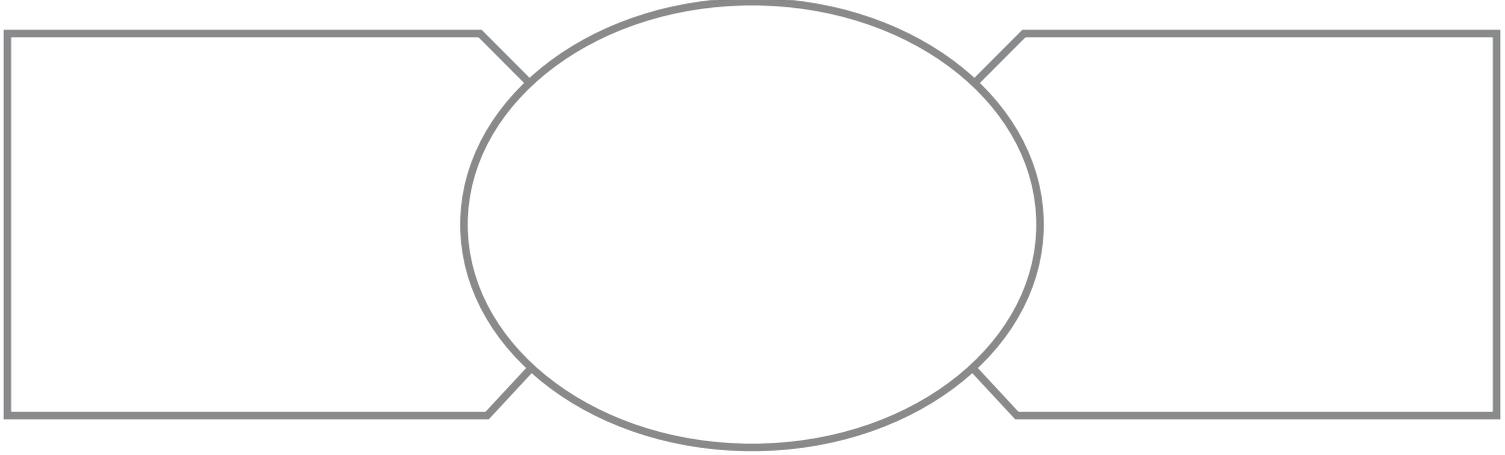
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# Candy Chart

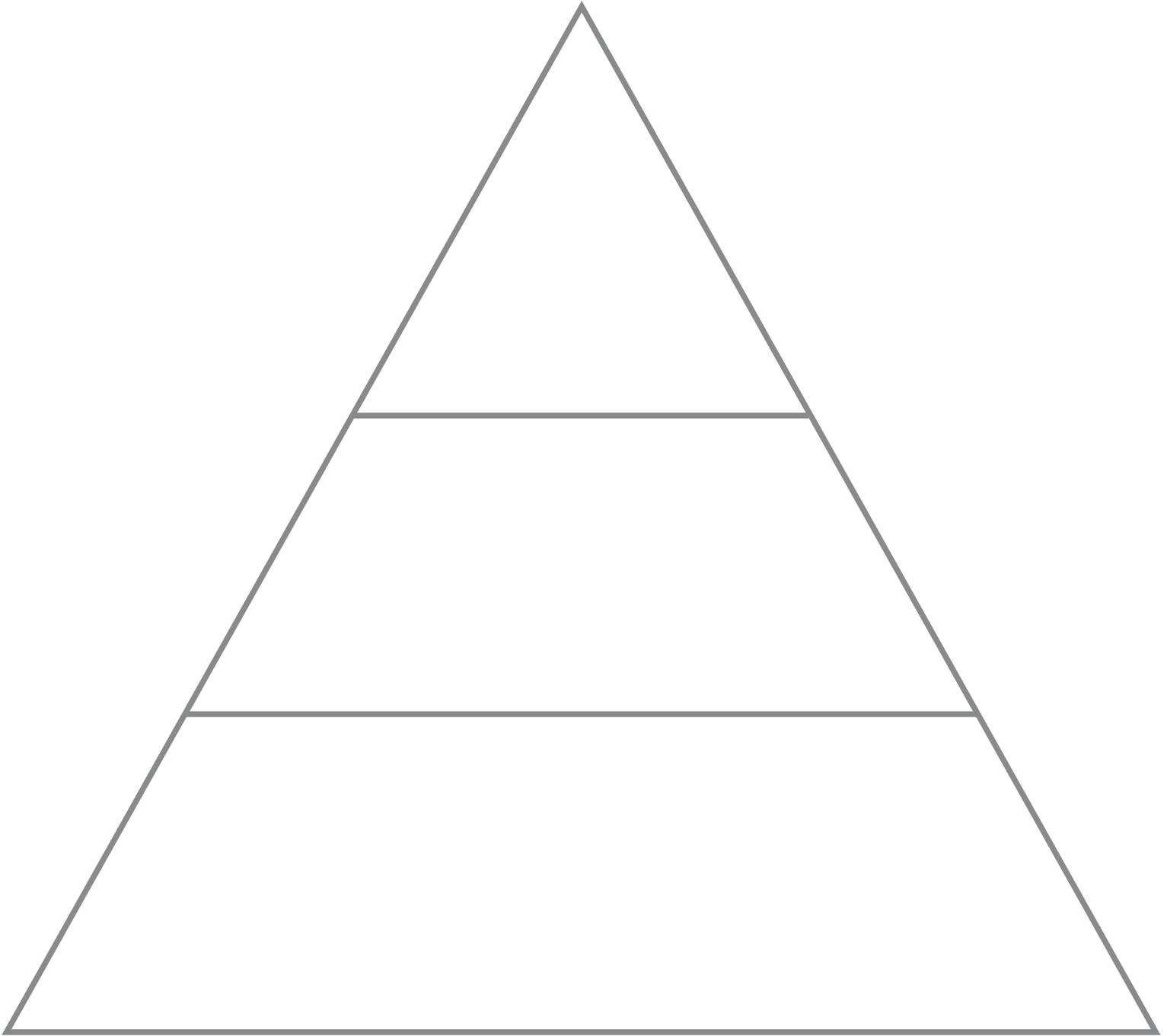




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# Pyramid Chart





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# Onion Chart

