**Bioaccumulation – Biomagnification activity Name**

**Block**

Bioaccumulation is the gradual build up of chemicals in the body tissue of an organism. Biomagnification is the increase in concentration of chemicals in the tissues of organisms moving up the food chain.

The following activity is a demonstration of these two processes. Below is the food chain that is symbolized through the activity:

Algae 🡪 Krill 🡪 Fish 🡪 Seal 🡪 whale

(white) (pink) (green) (purple) (envelop)

**Procedure:**

1. Take out the pieces of paper in the envelop and separate them by colour.

Krill eat algae

1. The pink/orange paper represents krill and the white paper represents algae. Krill eat Algae. Spread out the pink paper and spread the white pieces of paper on the pink as equally as possible.
   1. On the pink paper, write how many white papers **with red lines** there are
   2. Write the numbers below (each box represents a krill) if the krill has not eaten algae with red lines then write 0 in the box (cross out extra boxes)

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Tally up the total numbers:

(ex. 5 krill with 1, 4

with 2, 11 with 0)

Fish eat Krill

1. The 6 green papers represent fish that eat the krill. Take the pink paper (that you have already written numbers on) and place them **randomly** and **equally** on the green papers.
   1. Add up the numbers on the pink and write it on the green paper they are on
   2. Write the numbers below (each box represents a fish – green paper)

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Tally up the numbers:

Seal eat Fish

1. The 2 purple papers represent seals that eat fish. Take the green paper (that you have already written numbers on) and place them **randomly** and **equally** on the purple papers
   1. Add up the numbers on the green and write it on the purple paper they are on
   2. Write the numbers below (each box represents a seal – purple paper)

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Tally up the numbers:

Whale eats seals

1. The envelop represents a wale that eats the seals. Take the two purple papers (that you have written numbers on) and place them in the envelop.
   1. Add up the numbers on the purple and write it in the box below.

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Below is a table to tally the total numbers collected by the rest of the class. Complete it using the tally that the teacher has on the board.

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| Pink (krill) | Green (fish) | Purple (seal) | Envelope (whale) |
| Ex. 5 with 1 | Ex. 2 with 3 | Ex. 1 with 7 | 1 with 12 |
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Questions:

1. Which type of organisms have the highest numbers?
2. If the threshold of danger and toxicity is 7 or up, how many of each organism are in danger?