How Many Tigers?

Ecosystem Interactions & Habitats

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Education programs are sponsored by:

Albertsons

Content Areas: Limiting Factors, Carrying Capacity, Habitat Loss, Predator & Prey Relationships

Materials List: Laminated cards to represent prey species or missed attempts (pre-made), laminated images of the prey species, numbered envelopes for each 'tiger' to represent their 'den', tiger cub stuffed animals (optional)

Empathy Best Practice: Perspective taking, Connecting to caring action

Conservation Connection: Endangered species due to habitat loss/fragmentation

Tangible Action: Choose sustainably harvested lumber products

Background Info: This activity is similar to Project Wild's "How Many Bears?" in format and themes, but the species specific challenges are different.

- Bears are omnivores, but tigers are obligate carnivores - so meat is all they get!
- Being a predator is tough! Hunting success rate for tigers is quite low at about 5% or 1 in 20; Even with silence, speed, and stealth, as solitary hunters many of the laminated cards they collect will be 'missed attempts'.
- An important part their diet is large-bodied prey (ex. deer species, wild boar, goats, baby rhinos, even bears); a tiger kills about one large animal per week, thus about 50 to 52 animals per year.
- Tigers spread their large mammal feast over two days: about 40 lbs of meat each day, but can gorge themselves on more than twice that.

Procedures:

1. Choose a large outdoor area to play through the simulation, 75-100 square feet.
2. Each student gets an envelope to represent their 'den' and places it on the outside of the circle where they can get back to easily - they should all be about the same distance apart so no one has a major advantage.
3. Spread all of the laminated cards out in the play area and tell students that all of the cards represent different food items in their habitat. *Classroom set of cards found on following pages with labels & quantities*
4. Rules
    a. They can only pick up one at a time - they aren't hunting down a herd at once
    b. Walk, no running, back to their 'den' with the card
    c. No shoving, stealing, etc. - all of their food gets redistributed if they don't follow the rules
    d. Continue on until all of the cards have been picked up
    e. Now they can start sorting and adding up their food items, depending on the age group they may need help with this or to write them down.
        i. Optional - one person is designated as a mother and has two cubs to care for, another tiger has been injured by a snare (they have to limp or have one foot in a box or bin as they move around).

Discussion:

1. Ask participants to determine the amount of food in each category to support all of the tigers in this activity.
    a. Did we have sufficient food to support all our tigers?
    b. If sufficient food were available for all of the tigers, would the population likely increase the following year? Have participants support their answers.
2. Other than food, what factors, natural or human-related, might also limit the growth of the tiger population? How would each of these factors affect the tiger population? Use this activity to define *limiting factors* and *carrying capacity*
3. Use this as an opportunity to explore habitat loss, poaching, etc. and conservation projects for species like Amur tigers.

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PARQUE NACIONAL DA GORONGOSA

Albertsons

Tiger - 30

Tiger - 30

Tiger - 30

Tiger - 30

Wild Pig/Boar (x4)

At the start: you should be vague about what the different numbers/colors mean so that students will still collect the different cards.

Calculations:

To survive, a tiger must consume 20 kg (44 lbs) of meat per night and they will eat this over a two-day period. To determine how many tigers survived the simulation, a tiger must have eaten 160 kg (350 lbs) of meat over a ten-day period.

Students should add up the numbers from the cards they collected, it is likely that only 1-2 tigers will survive this activity.

Tiger - 40

Tiger - 40

Chital or Axis Deer (x7)

Tiger - 40

Tiger - 40

Tiger - 40

Tiger - 40

Tiger - 40

Tiger - 10

Tiger - 10

Tiger - 10

Tiger - 10

Tiger - 10

Indian Rhino calf (x5)

Tiger - 20

Tiger - 20

Tiger - 20

Tiger - 20

Tiger - 20

Gaur or Indian Bison (x5)

Tiger - 80

Tiger - 80

Tiger - 80

Tiger - 80

Sambar Deer (x4)

Tiger - 0

Tiger - 0

Tiger - 0

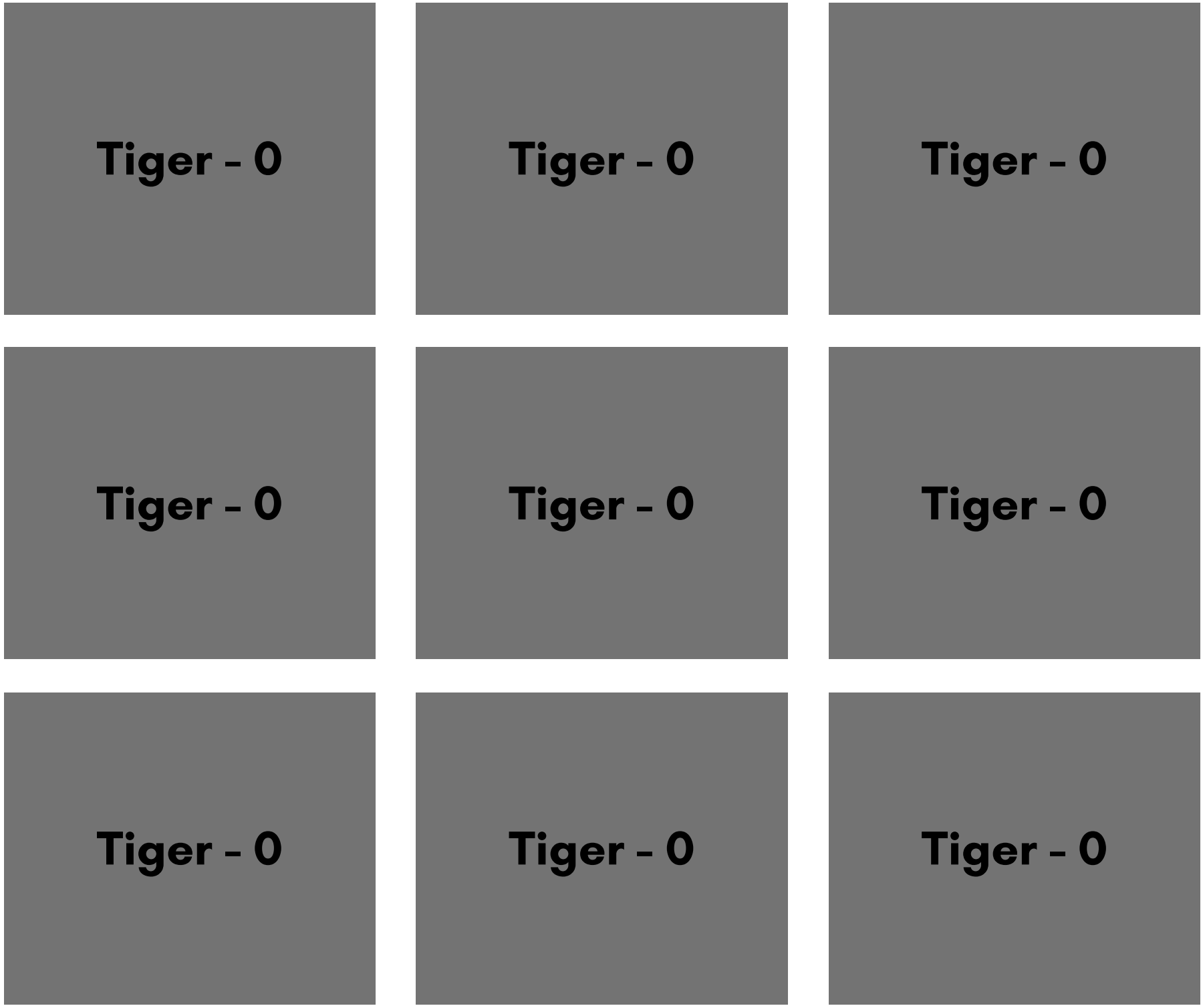
Tiger - 0

Tiger - 0

Tiger - 0

Missed Attempts (x60)

At the start: you should be vague about what the different numbers/colors mean so that students will still collect the different cards.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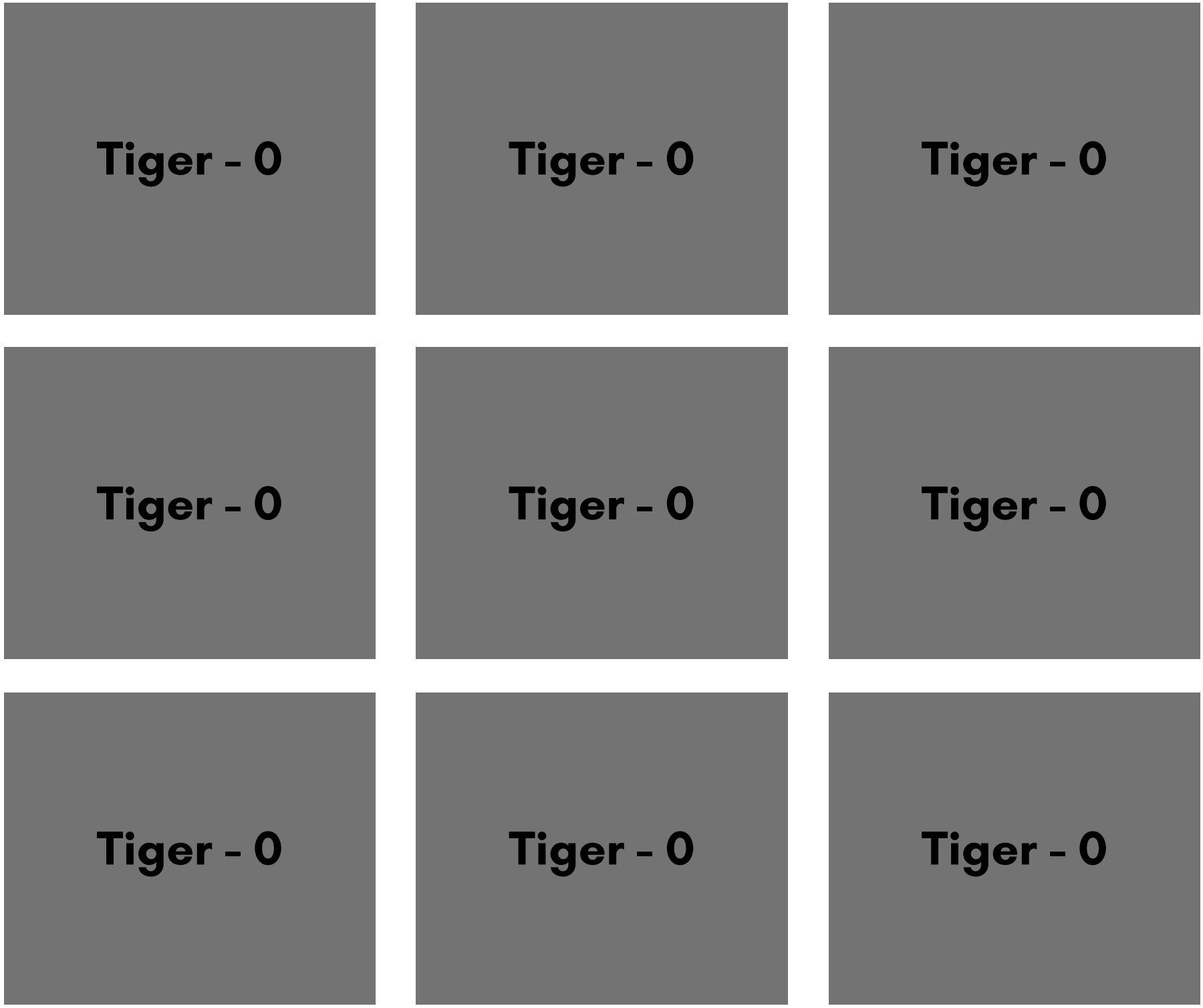
Missed Attempts (x60)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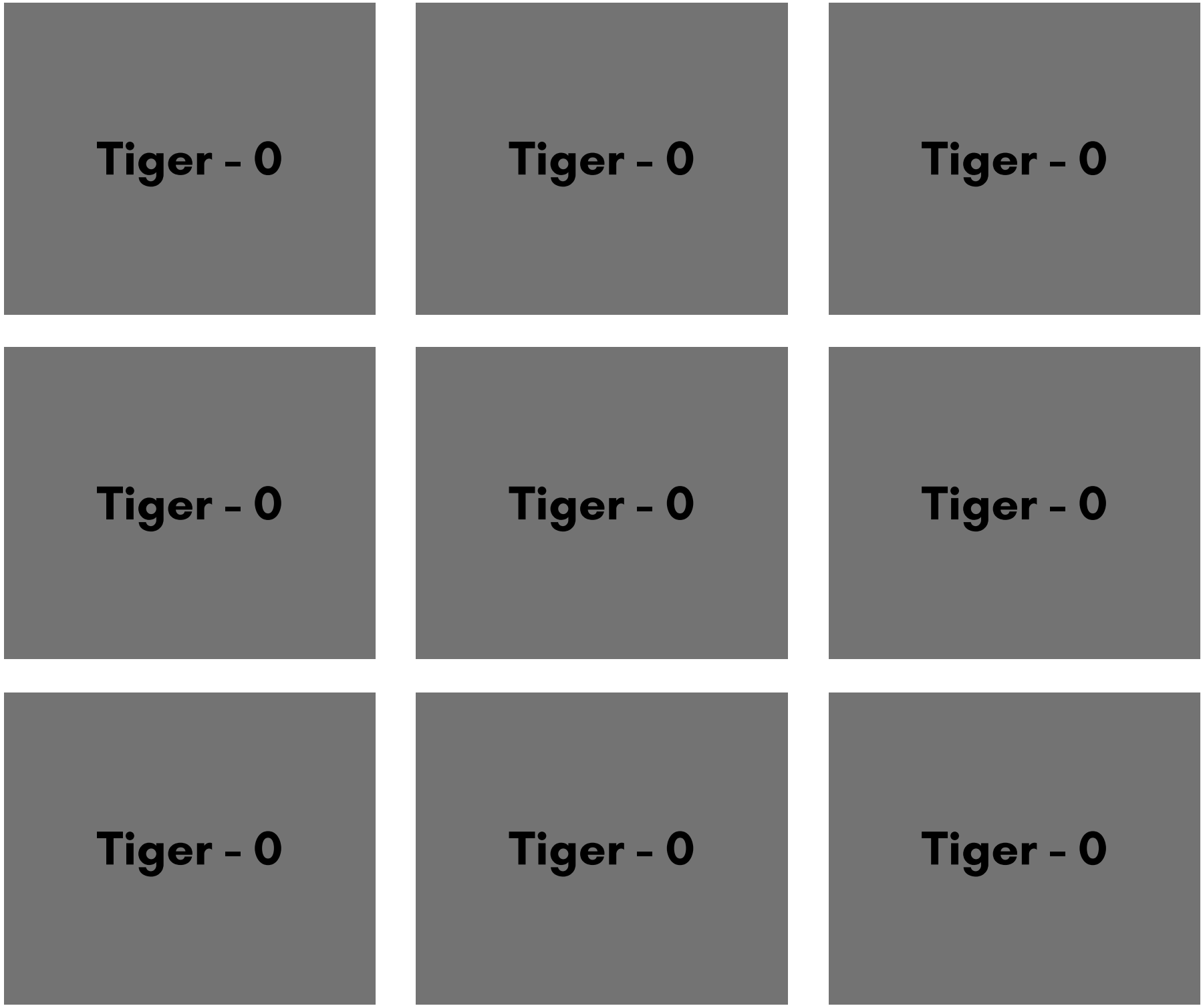
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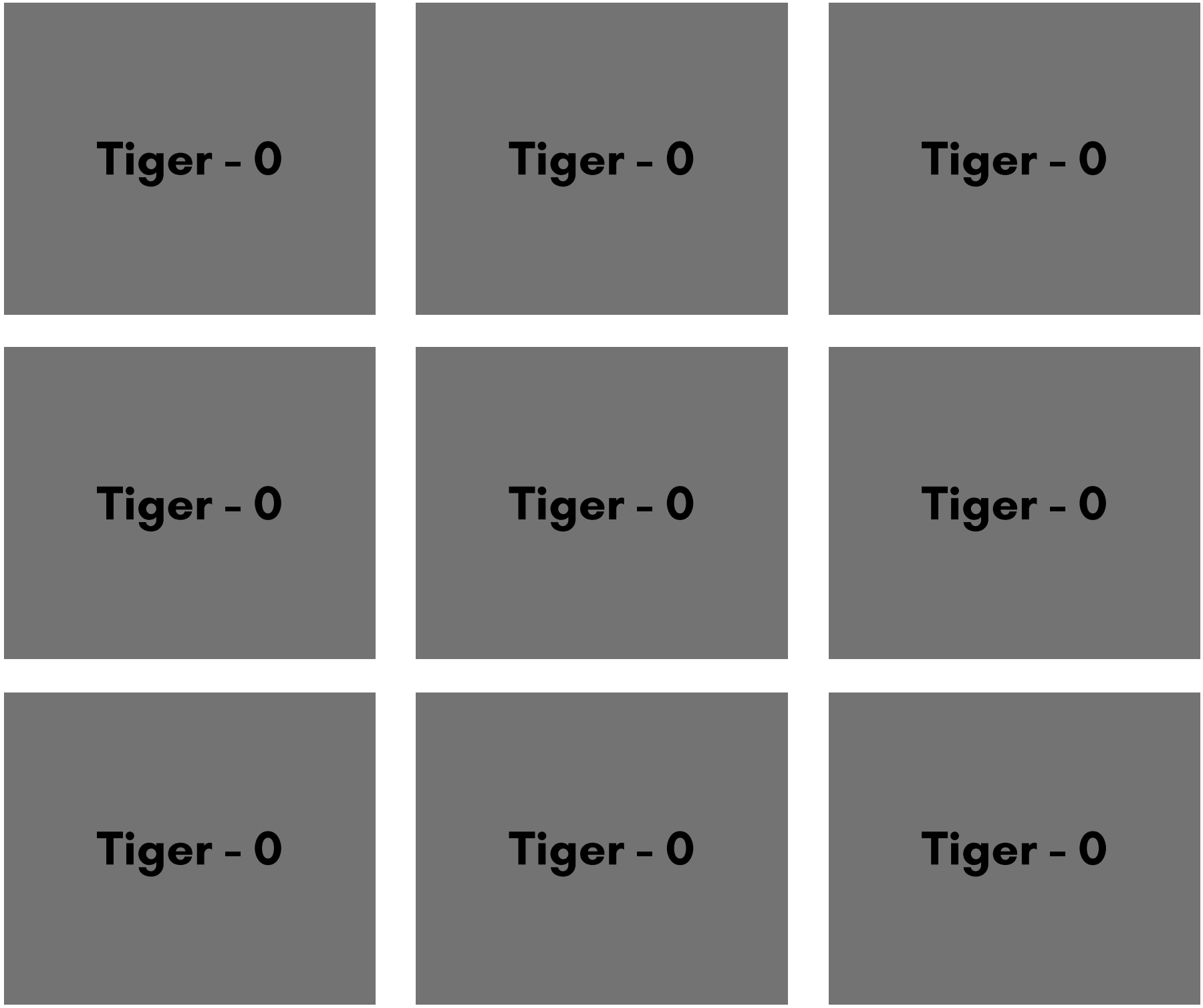
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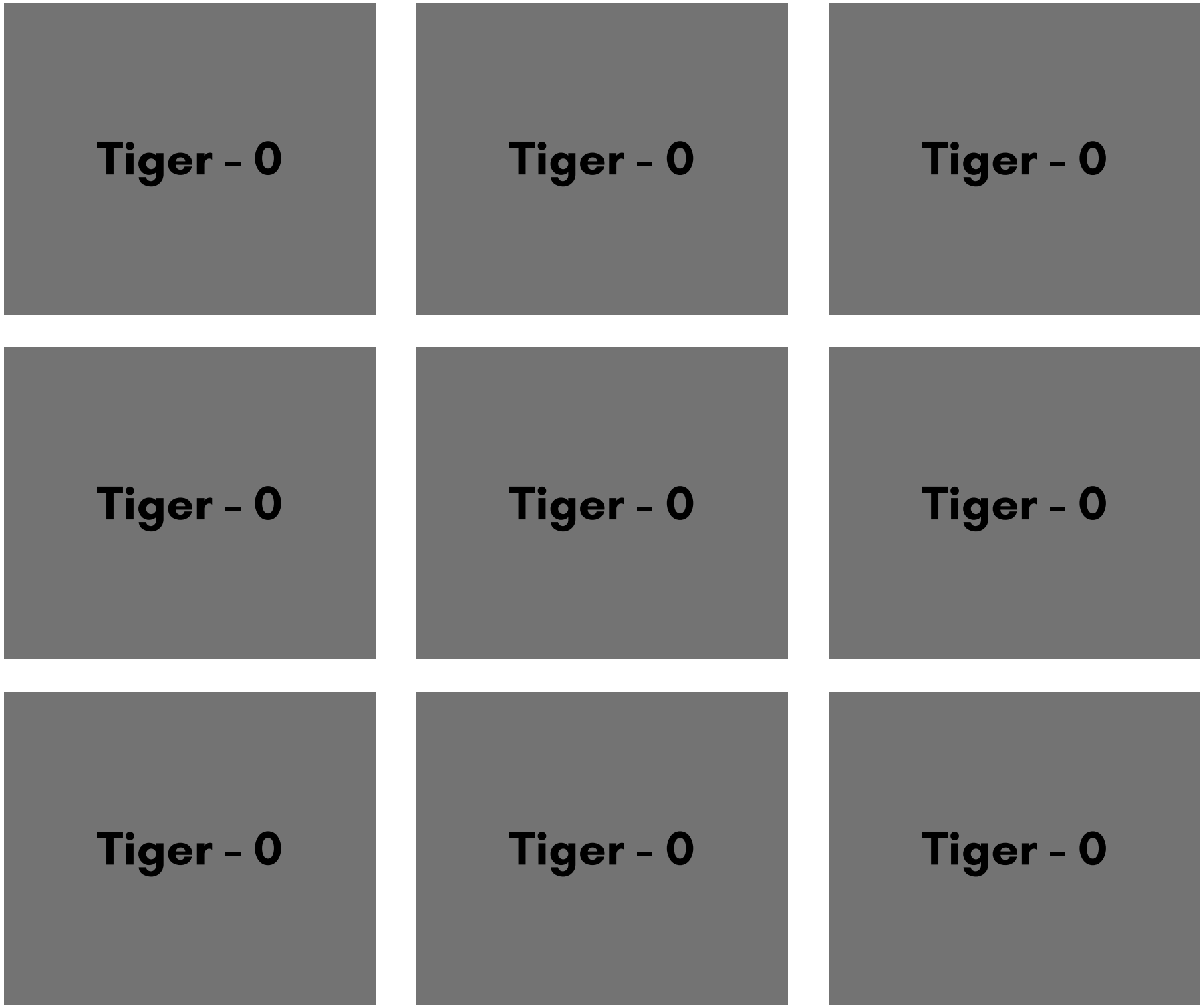
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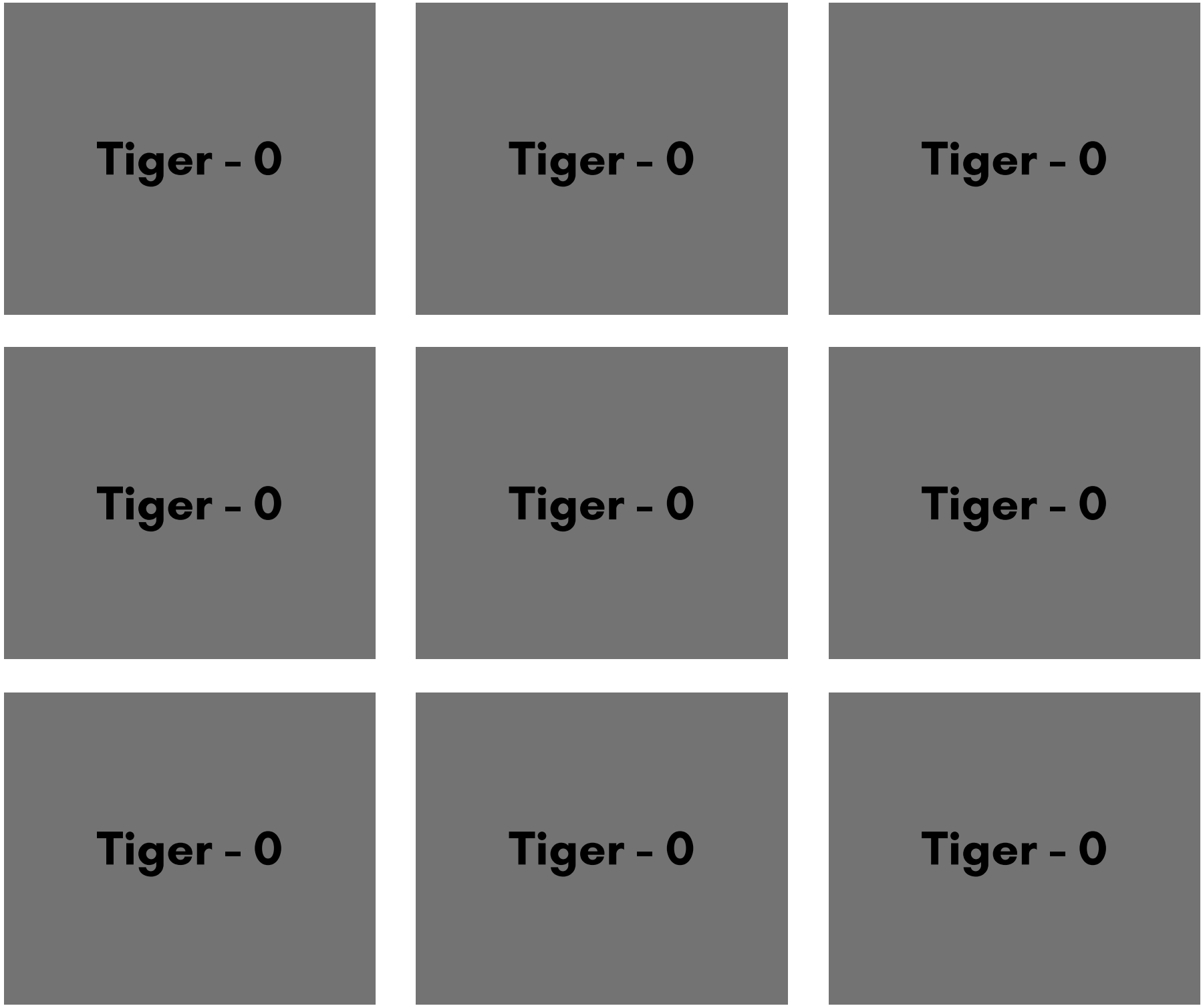
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