

Title: Carrying Capacity and Symbiosis

Page:

Standard/Benchmark:

Date:

Essential Question: What factors affect the carrying capacity of an ecosystem? How could too many predators in an ecosystem affect the carrying capacity? Describe the different types of symbiosis.



Anticipation Guide: True or False?

Strategy: "Think-pair-share"

3. Carrying capacity refers to the largest population an environment can support. Explain:

4. Predators and prey populations are similar in size. Explain:



Carrying Capacity

- Carrying capacity is the largest population an environment can support at any given time. Carrying capacity depends on food, water, living space, and other resources.



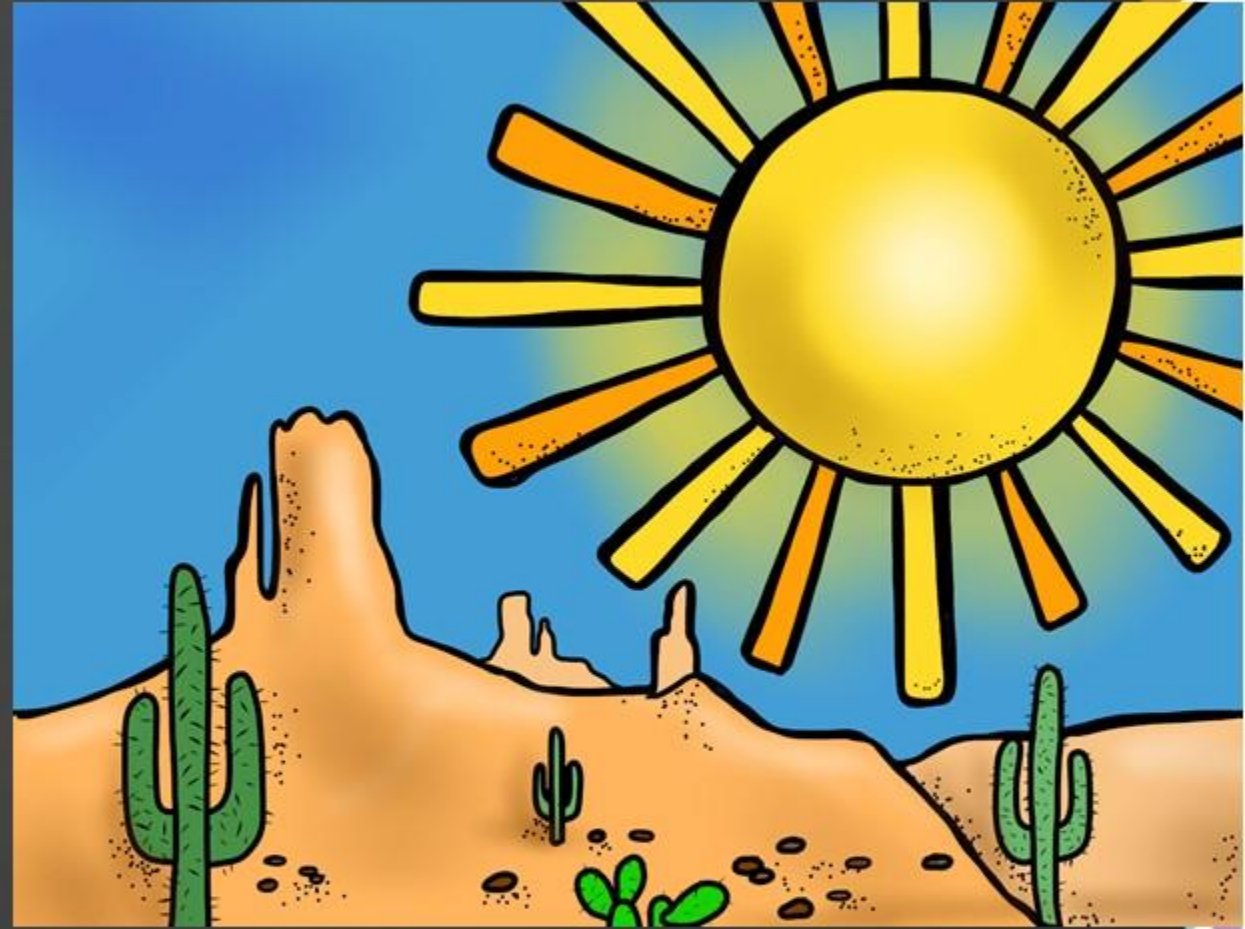
Analogy

- An analogy of carrying capacity is a backpack. It can only hold so many books, binders, etc..



Competition

- Competition occurs when two or more individuals or populations try to use the same resource, such as food, water, shelter, mates, or sunlight.



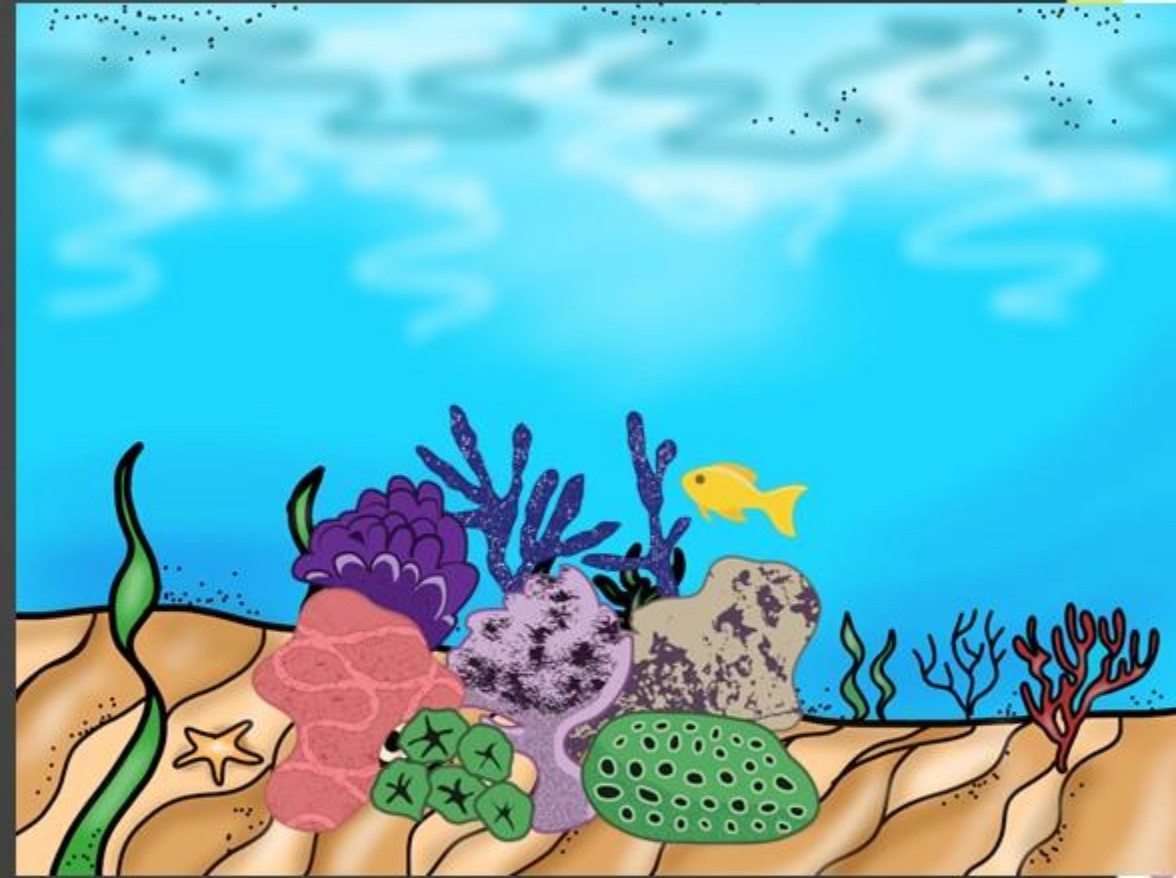
Predator vs. Prey

- A predator is an organism eating all or part of another organism.
- Prey is an organism killed and eaten by another organism.



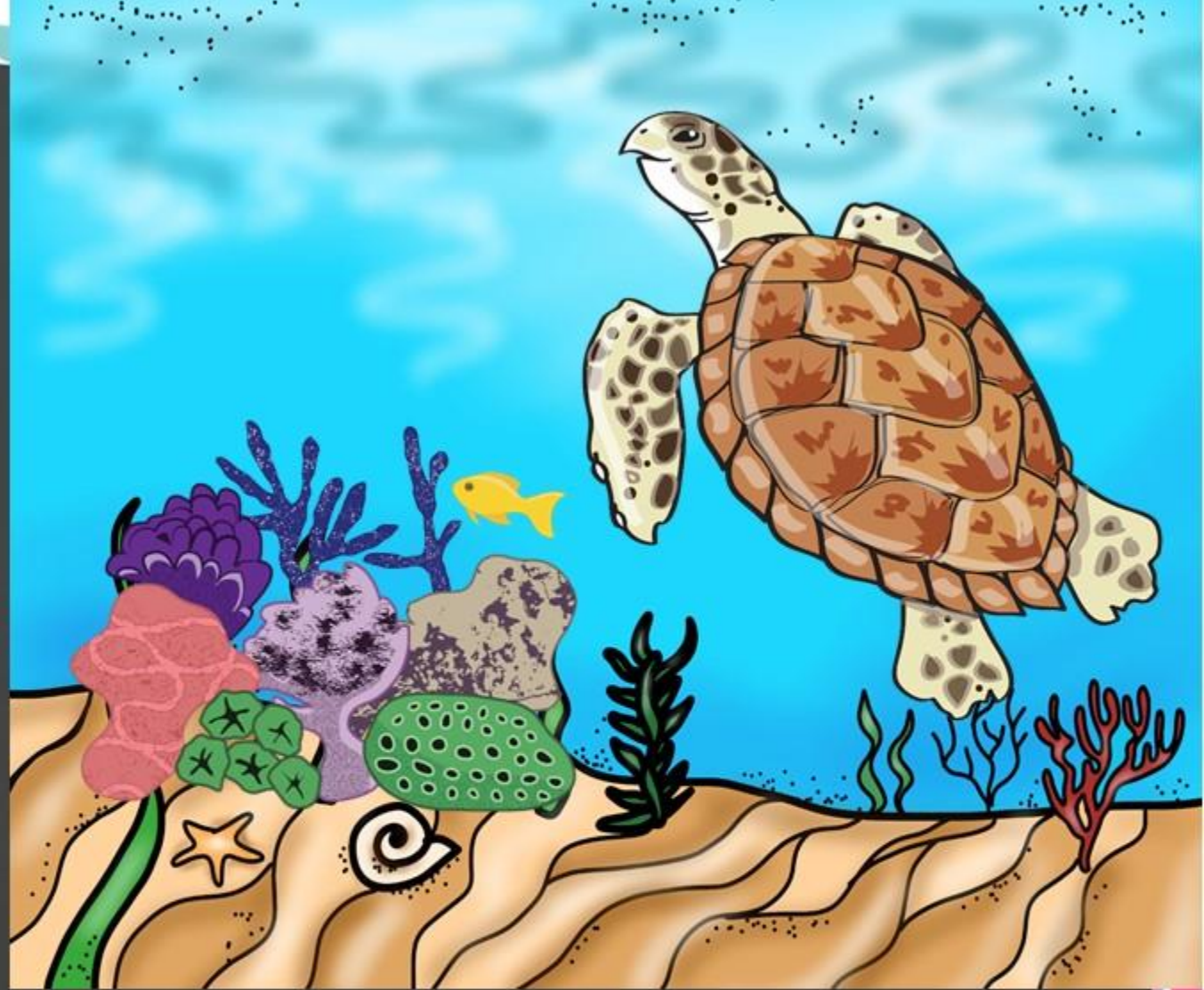
Symbiosis

Symbiosis is a relationship in which two different organisms live in close association with each other.



Mutualism

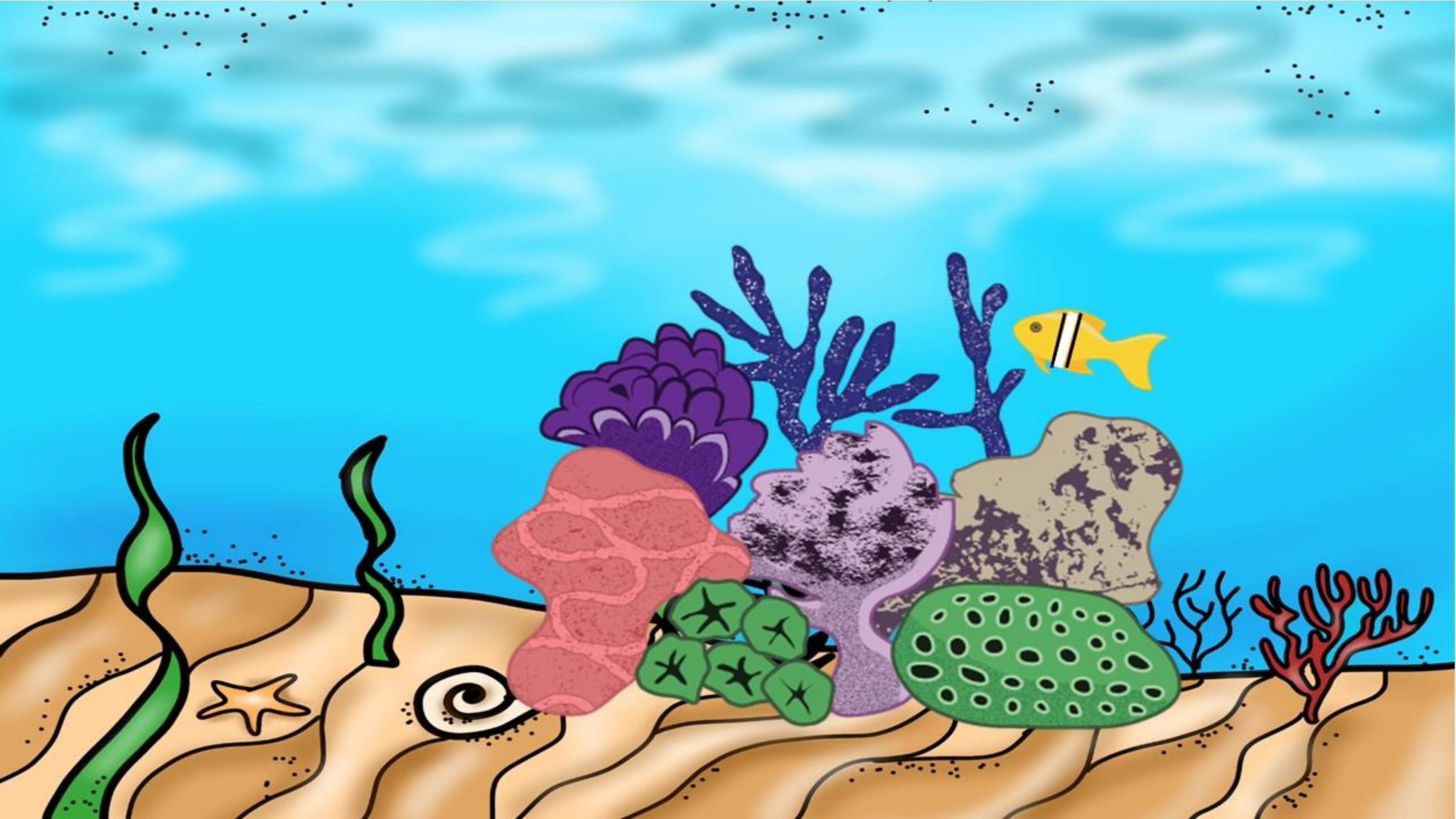
- Mutualism is a symbiotic relationship where both organisms benefit. Example: sea turtle and yellow tang



Commensalism

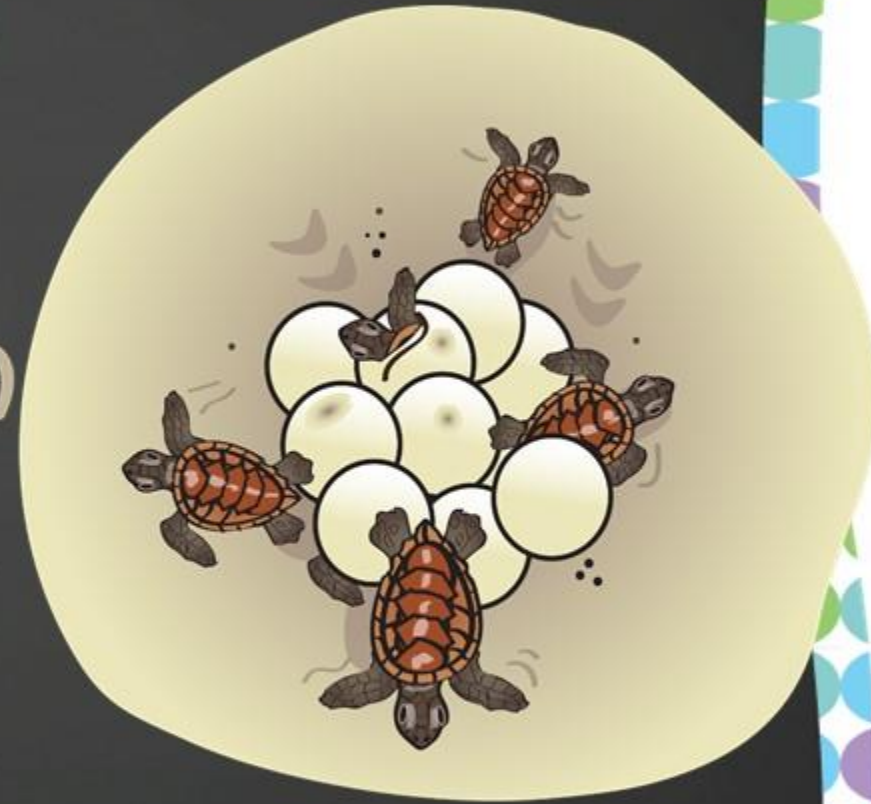
- Commensalism is a symbiotic relationship where one organism benefits and the other is unaffected.
Example: a clownfish gets protection by living in a sea anemone.





Parasitism

- Parasitism is a symbiotic relationship where one organism benefits, but the other is harmed.
Example: a baby sea turtle and jelly fish.



Quiz time!

- **Ready:** Number 1-5 behind notes
- **Go:** Write correct letter and mark if incorrect.
- **Back:** Highlight, add to notes or drawings



1. Which of the following is an example of symbiosis?

- A. A friend helping another friend with homework
- B. A mamma cat taking care of her kittens
- C. A mosquito biting you
- D. A friend sharing their lunch with you



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2. Which factor would affect carrying capacity?

- A. Amount of sunlight
- B. Number of predators
- C. Number of prey
- D. All of the above



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3. How is mutualism different from commensalism?

- A. In mutualism, both parties benefit while in commensalism one benefits and the other is unharmed
- B. In mutualism, one benefits and the other is unharmed while in commensalism both benefit
- C. Both are examples of symbiosis
- D. In mutualism, both parties benefit while in commensalism one benefits and the other harmed



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4. A dog and flea is an example of what type of symbiotic relationship?

- A. Mutualism
- B. Commensalism
- C. Parasitism
- D. Depends on other factors



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D. Depends on other factors



5. If there were too many preys in an environment, which of the following statements would be true?

- A. The ecosystem would be fine.
- B. The ecosystem would collapse because of competition for food.
- C. The prey population would decrease.
- D. There would be enough space for all organisms.



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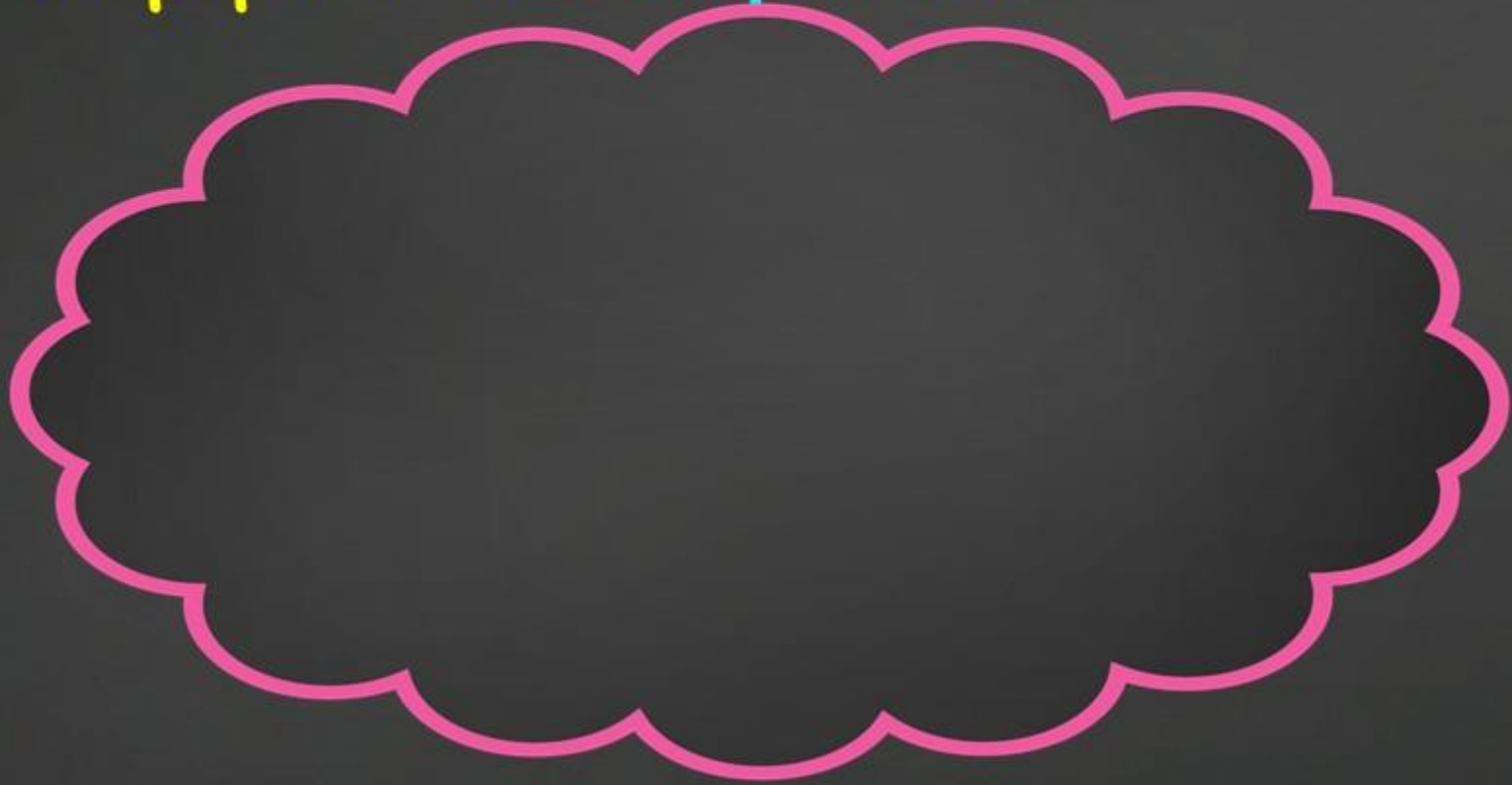


Anticipation Guide Statements and Answers

1. **Cover:** Check back to the unit cover or warm-up
2. **After:** In the "after" section, state whether true or false based on what was learned.
3. **Explain:** Be prepared to explain in summary



3. Carrying capacity refers to the largest population an environment can support. Explain:

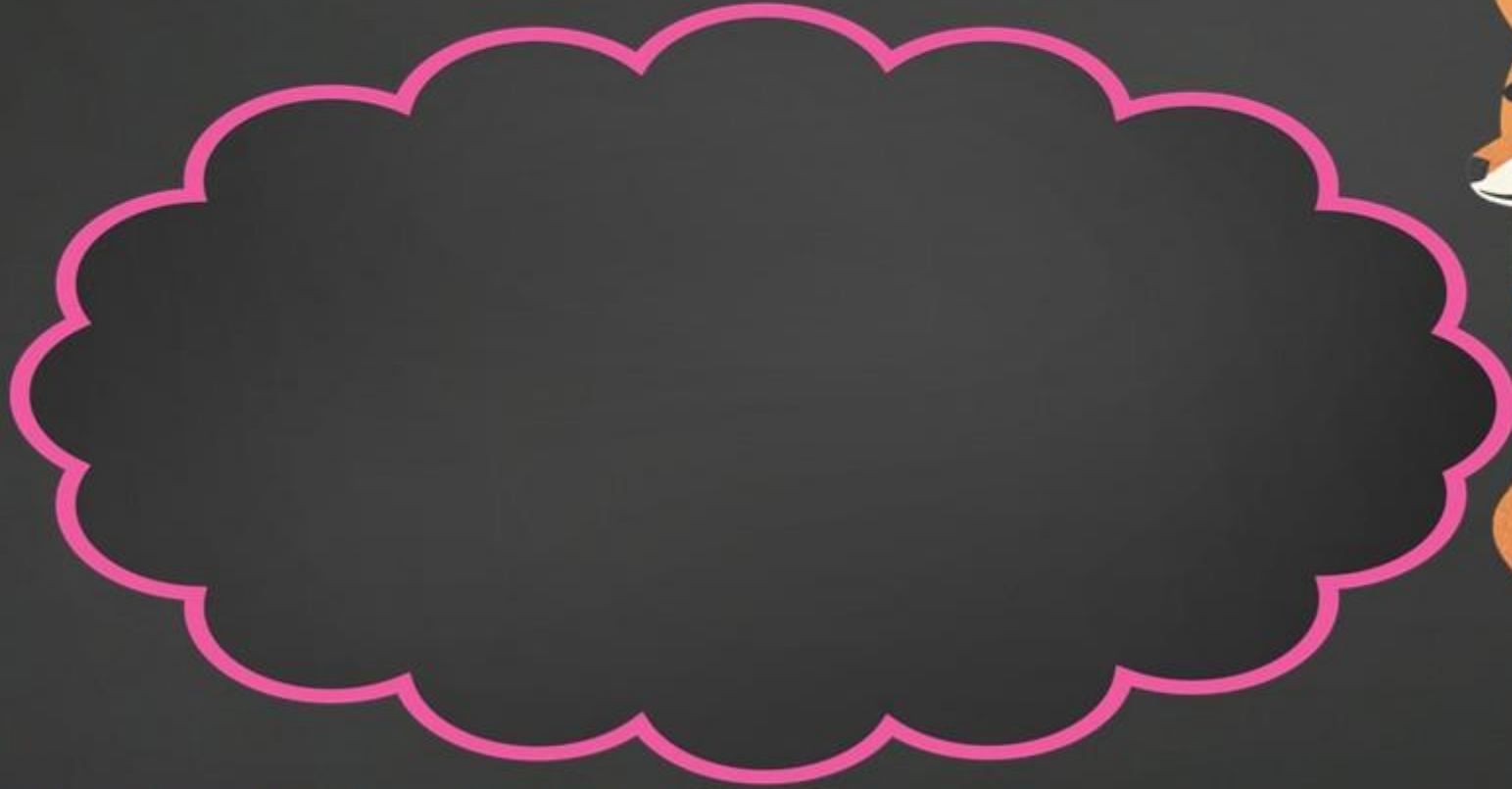


3. Carrying capacity refers to the largest population an environment can support. Explain:

True! Carrying Capacity pertains to the largest population and depends on sunlight, food, water, and other resources.



4. Predators and prey populations are similar in size. Explain:



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False! Prey populations usually are larger than predator populations.



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What factors affect the carrying capacity of an ecosystem?

- “Things affecting the population size in an ecosystem would include ___ (list/describe).”

How could too many predators in an ecosystem affect the carrying capacity?

- “Too many predators in an ecosystem would affect ___ (describe).”

Describe the different types of symbiosis.

- “(List) symbiosis is when ___ (describe/give example).”

