

Penguin Life Stages

Georgia Standards of Excellence:

- S2L1. Obtain, evaluate, and communicate information about the life cycles of different living organisms.
 - d. Develop models to illustrate the unique and diverse life cycles of organisms other than humans.

Next Generation Science Standards:

- **3-LS1-1.** Develop models to describe that organisms have unique and diverse life cycles but all have in common, birth, growth, reproduction, and death.

Learning Objective:

- Students will identify and build the life stages for African penguins.



African Penguin

Essential Question:

- What is the life cycle of African penguins and how does it differ from a human life cycle?

Key Vocabulary:

- Life Cycle
- Egg
- Hatchling
- Chick
- Juvenile
- Adult
- Foraging

Materials:

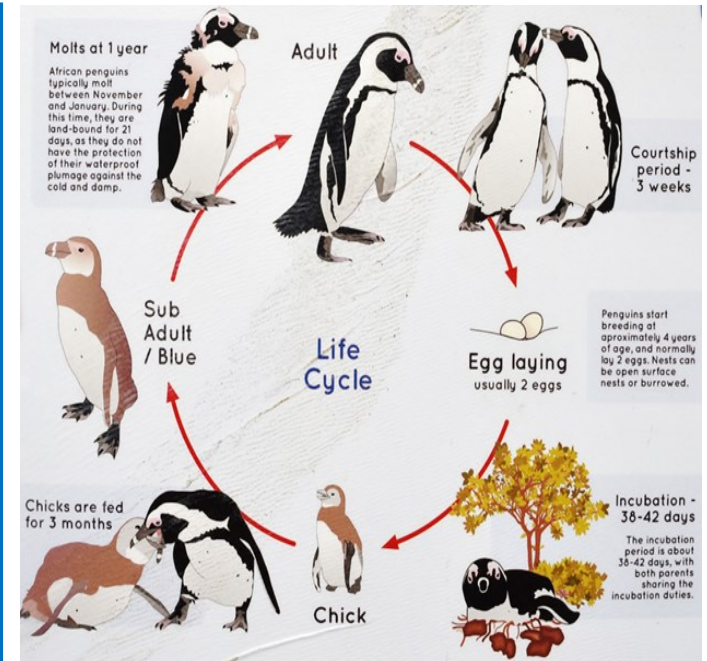
- Scissors
- Cardstock Paper
- Penguin Life Stages Cards (printed on the cardstock)



Penguin Life Stages

Background Information:

- The five life stages of an African penguin are different from humans and can be characterized by different traits unique to each stage. The five life stages of an African penguin are an egg, hatchling, chick, juvenile and adult.
- Two whitish eggs are laid and incubated for 38-42 days before they hatch. Once the hatchlings hatch, they are fed by their parents for up to three months. At that point they molt their down feathers and are now able to swim and forage with the parent still providing food.
 - Hatchlings are newly hatched penguins, chicks are slightly older and larger
- Juveniles are young adults and have a grey/silver color. They already have some skills but are still learning how to function independently. Juveniles can take up to 13 months to develop waterproof feathers and have the ability to hunt for food on their own.
- African penguin adults reach reproductive maturity at around 3 years. They stand 18-25 inches tall, weigh 6-7 pounds and are black and white in color.
- Foraging
 - Penguins forage (hunt or look for food) in the ocean, often as far as nine miles offshore. Their diet consists of small fish species, crustaceans and squid, which they swallow whole. Parental penguins actually swallow the fish then regurgitate it for their chick. Regurgitating is when food that was swallowed is brought back up to the mouth.





Penguin Life Stages

Activity Instructions: Penguin Life Stages Card Game

The deck has: 20 eggs, 16 hatchings, 14 chicks, 12 juveniles, 10 adults and 20 fish cards

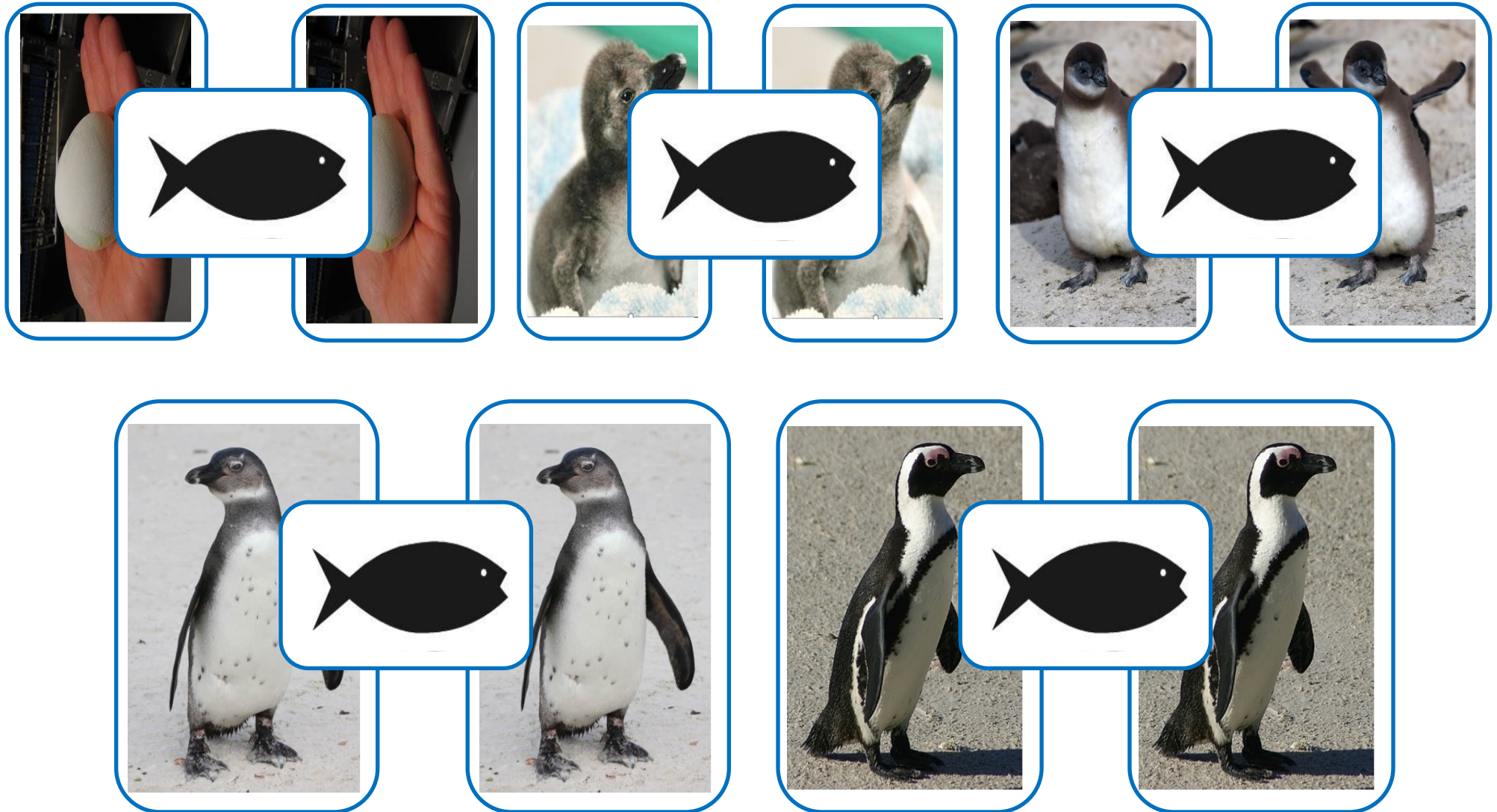
Game setup with 5+ people: Use the full deck.

Game setup with 3- 4 people: 16 egg cards, 12 hatchlings, 12 chicks, 10 juveniles, 8 adults, 16 fish cards.

Game setup with 2 people: 12 eggs, 10 hatchlings, 10 chicks, 8 juveniles, 6 adults, 8 fish cards.

1. Begin with showing the different life cycle stages of penguins (have the students place them in order). Explain that the objective of the game is to have two of your African penguin eggs reach adulthood **in sequential order** so that they can complete the life cycle circle and produce their own eggs. *The first player to age up two adult penguins wins.*
2. The correct order is: egg, hatchling, chick, juvenile and adult.
3. Set up the game using the instructions above (adding/removing cards based on the number of players). Each player will start with 2 eggs, and there will be a shuffled deck of cards. During gameplay there should be two stacks; a draw pile and a discard pile. Players will place egg cards down in front of them.
4. Players will take turns drawing cards starting with the youngest player.
5. In order to "age up" the penguin players must play the next life cycle stage of their penguin and a fish card (this represents making sure that your penguin has enough food to be healthy and survive to the next stage).
6. When player draws a fish card, they place it between their penguin card. If they already have a fish card and have not leveled up, they must place it face up in the discard pile.
7. If player does not draw the next life stage card needed or have a fish card they will place it face up in the discard pile (ex. Player must have a fish card between their eggs to level up one or both up to a hatchling, if they have no fish then player must discard hatchling).
8. The next player can choose to either draw the top card in the discard pile or a new card from the facedown draw pile.
9. The game is over when a player has both penguins reach the adult stage (symbolizing that they can then produce another egg) - player will be given an egg card to show that the life cycle circle can start over. Example of a winning hand is on the next page.

Penguin Life Stages: **Winning Hand Example**



Penguin Life Stages

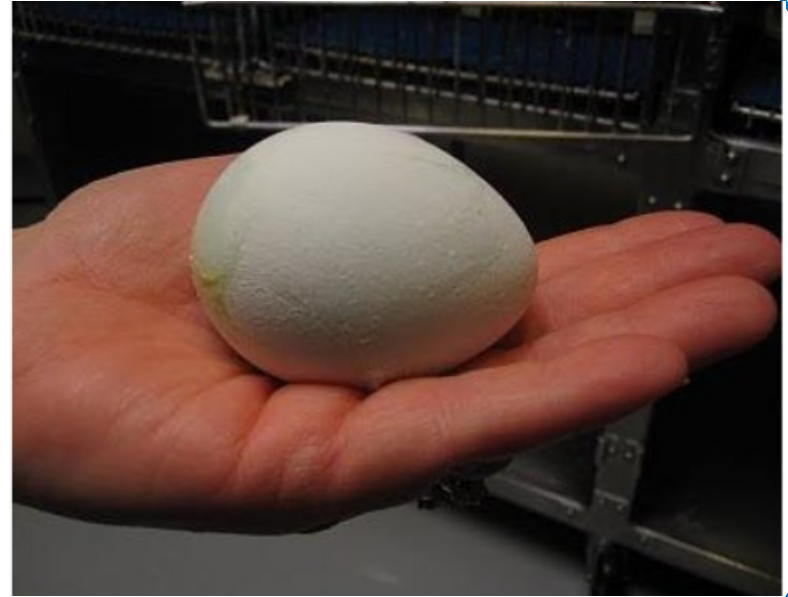
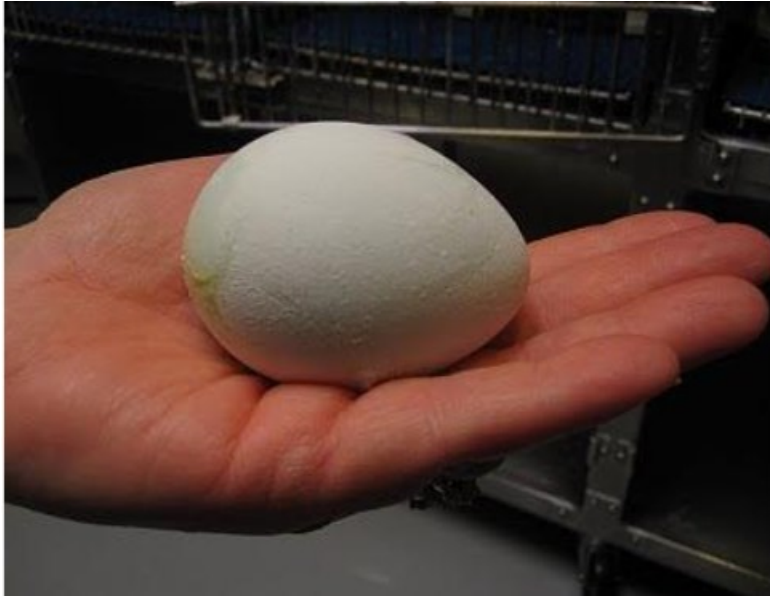
Evaluate:

- In what order did the life stages need to be to complete the game? (egg, hatchling, chick, juvenile, adult)
- What was the one thing that you needed to make sure that your penguin could move to the next stage? (Food)
 - Discuss the importance of food availability to students.
- How does the African penguin life cycle differ from the human life cycle? (Penguins lay eggs that the chicks hatch from)

References:

- "African Penguin Research & Conservation." Georgia Aquarium. Accessed May 22, 2019. <https://www.georgiaaquarium.org/research/african-penguin-research/>.
- "African Penguin." Georgia Aquarium. Accessed May 22, 2019. <https://www.georgiaaquarium.org/animal/african-penguin/>.
- StoryAtEveryCorner. "Boulders Penguin Colony in South Africa." Story at Every Corner, May 27, 2019. <https://storyateverycorner.com/african-penguins/>.
- "Learn." SANCCOB S A Foundation for the Conservation of Coastal Birds. Accessed May 22, 2019. <https://sancob.co.za/education/#schools>.

Print out **FIVE** copies of this page for full deck (20 egg cards)



Print out **FOUR** copies of this page for full deck (16 hatchling cards)



Print out **FOUR** copies of this page for full deck (14 chick cards. 2 spare cards)



Print out **THREE** copies of this page for full deck (12 juvenile cards)



Print out **THREE** copies of this page for full deck (10 adult cards, 2 spare cards)



Print out **FIVE** copies of this page for full deck (20 fish cards)

