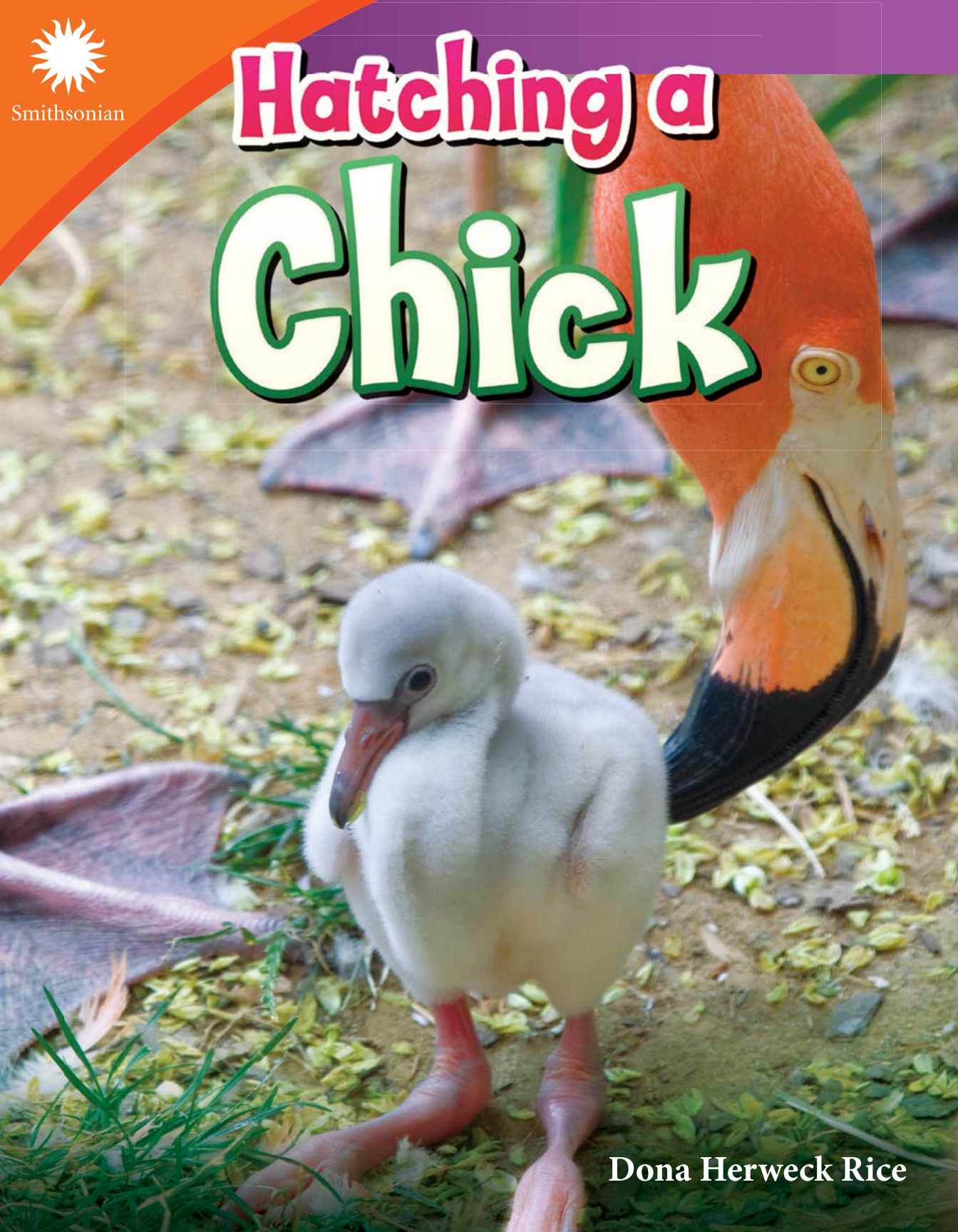




Smithsonian

Hatching a Chick



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Hello, World!

Pip! A tiny crack appears on a little brown egg. Inside the shell, a baby bird prepares to **hatch**. It knows by **instinct** how to free itself from its shell. Soon enough, it will stand on its own feet and breathe the fresh air of the outside world.

Welcome to the world, little chick!



A herring gull chick begins to hatch.




herring gull chick

Sometimes, birds need help with their eggs. Chicks do not need help breaking out of their shells. But some adult bird **species** may need help caring for their eggs in the first place.

Bird keepers help them. These scientists step in when bird species are **endangered**. They help some bird parents hatch and raise chicks so the chicks grow healthy and strong.



National Zoo bird keepers look inside a brown Kiwi egg.



This brown Kiwi
is one day old.



This brown Kiwi hatched at
Smithsonian's National Zoo.

How an Egg Hatches

To learn how bird keepers help, it is good to know how an egg hatches.

Just before a bird hatches, it **absorbs** egg yolk into its body. This will be its food for the first few hours or days outside the shell.

The bird also needs air. An air pocket forms at the top of the egg. The bird breathes this air just before it hatches.





These gull chicks are at different stages of hatching.

Most of the time, people should not help baby birds break from their shells. They might hurt the baby birds.



STEAM CHALLENGE

Define the Problem

A bird egg has just fallen from its nest in a tree. It did not crack, but the parents are nowhere to be found. Use what you know about hatching eggs to create a new “nest.” Your nest must keep the egg safe until bird keepers can take the egg.



Constraints: You may use any materials that could be found in various birds’ nests, such as twine, yarn, or natural materials.



Criteria: A successful nest must have space to rotate the egg. Your nest should be able to hold a weighted plastic egg for one minute.





Research and Brainstorm

Why is it important to rotate an egg? What can bird keepers use to help eggs stay safe while still in the hatching process?



Design and Build

Sketch a design of your nest. What purpose will each part serve? What materials will work best? Build the model.



Test and Improve

Place a weighted plastic egg in your nest for one minute. Did it hold? Is there space for the egg to rotate? How can you improve it? Improve your design and try again.



Reflect and Share

How can your nest protect an egg? Are there other materials that would have been helpful in making your nest strong and safe?