



Smithsonian

Being Like Butterflies



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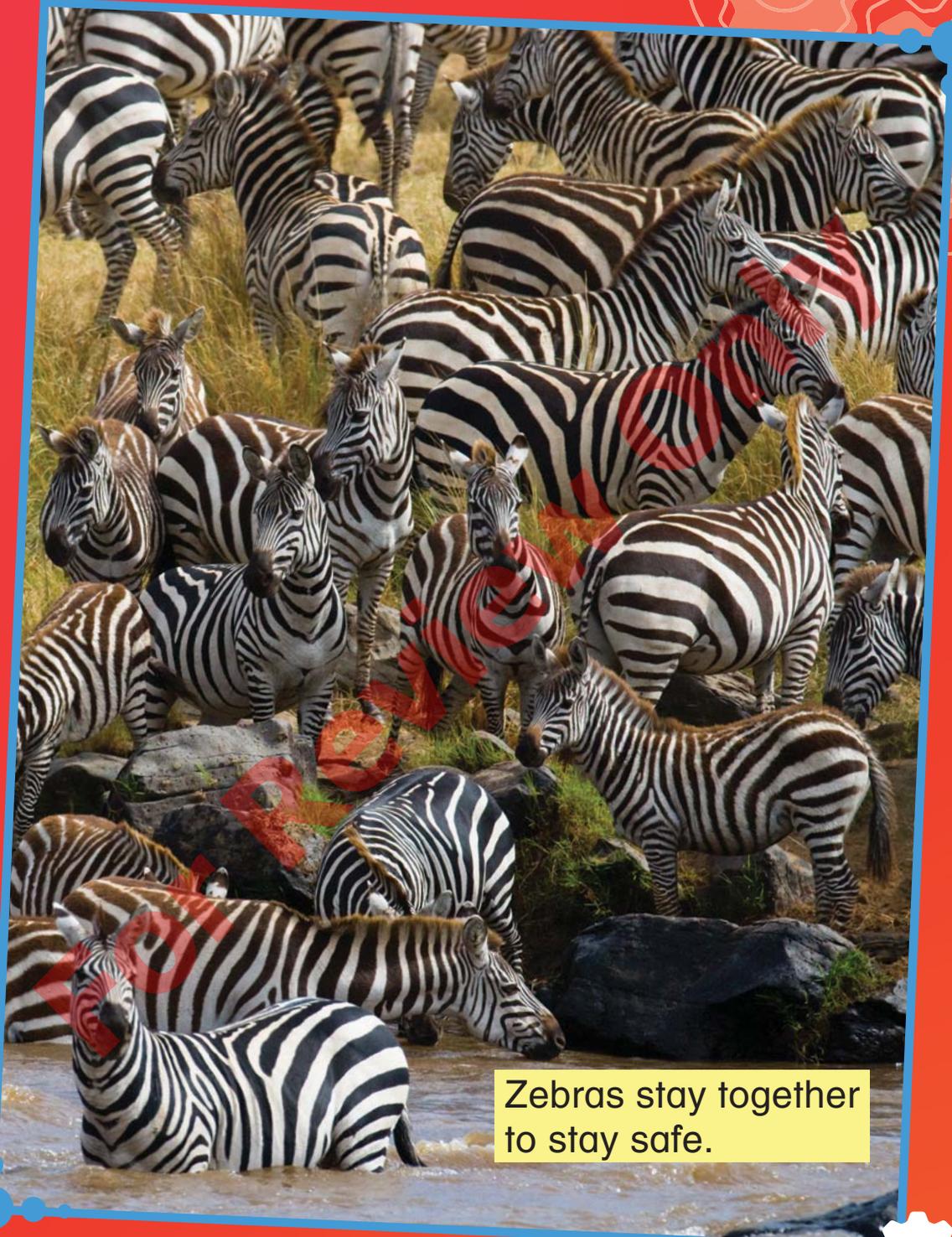
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Learn from Nature

All living things have ways to survive in the world. We can learn from them.

A close-up photograph of a green-orb web spider on its web. The spider's body is covered in fine hairs and has a mottled green and brown pattern. The web is a classic orb-weaver design, with a central spiral and several concentric rings. The background is a soft, out-of-focus green.

A green-orb web spider spins a web.



Zebras stay together to stay safe.

Butterflies may not seem like teachers. But we can learn more from them than you might think.

A young boy with dark hair, wearing a red and blue plaid shirt, is shown in profile, looking intently through a magnifying glass. A monarch butterfly is perched on a small yellow flower to the right of the magnifying glass. The background is a soft-focus field of green grass and small yellow flowers. The entire scene is framed by a bright green border.

A boy studies a butterfly.

The shapes on butterfly wings make the wings waterproof.



Technology & Engineering

Waterproof Wings

Butterfly wings are waterproof. Water drops do not stick to them. People learned to make **fabric** like these wings.

What We Learn

Butterflies have lots of colors and patterns. These designs help them survive. They can help us as well.



This butterfly has green and black wings.



Some butterflies have bright spots.



This butterfly has patterns of lines.

STEAM CHALLENGE

The Problem

Many people who watch animals like to blend in with the world around them. This is called *camouflage*. Can you design a piece of fabric that an animal watcher can wear to blend in?

The Goals

- Choose a place at your school that your fabric will blend in with.
- Choose how your fabric will be used.
- Choose colors and patterns that will act as camouflage.





Research and Brainstorm

How does camouflage help keep people and animals safe? Where do people like to watch animals?



Design and Build

Design fabric to blend in with an area. Decide how a person will wear or use the fabric. What colors or patterns will you use? Create your fabric!



Test and Improve

Show your fabric to your friends. Does it blend in with the area you chose? Can you make your fabric better? Try again.



Reflect and Share

How might you be able to spot a person in camouflage? Could blending in ever be a problem for a person?