

THE SCIENCE BEHIND Rainbows

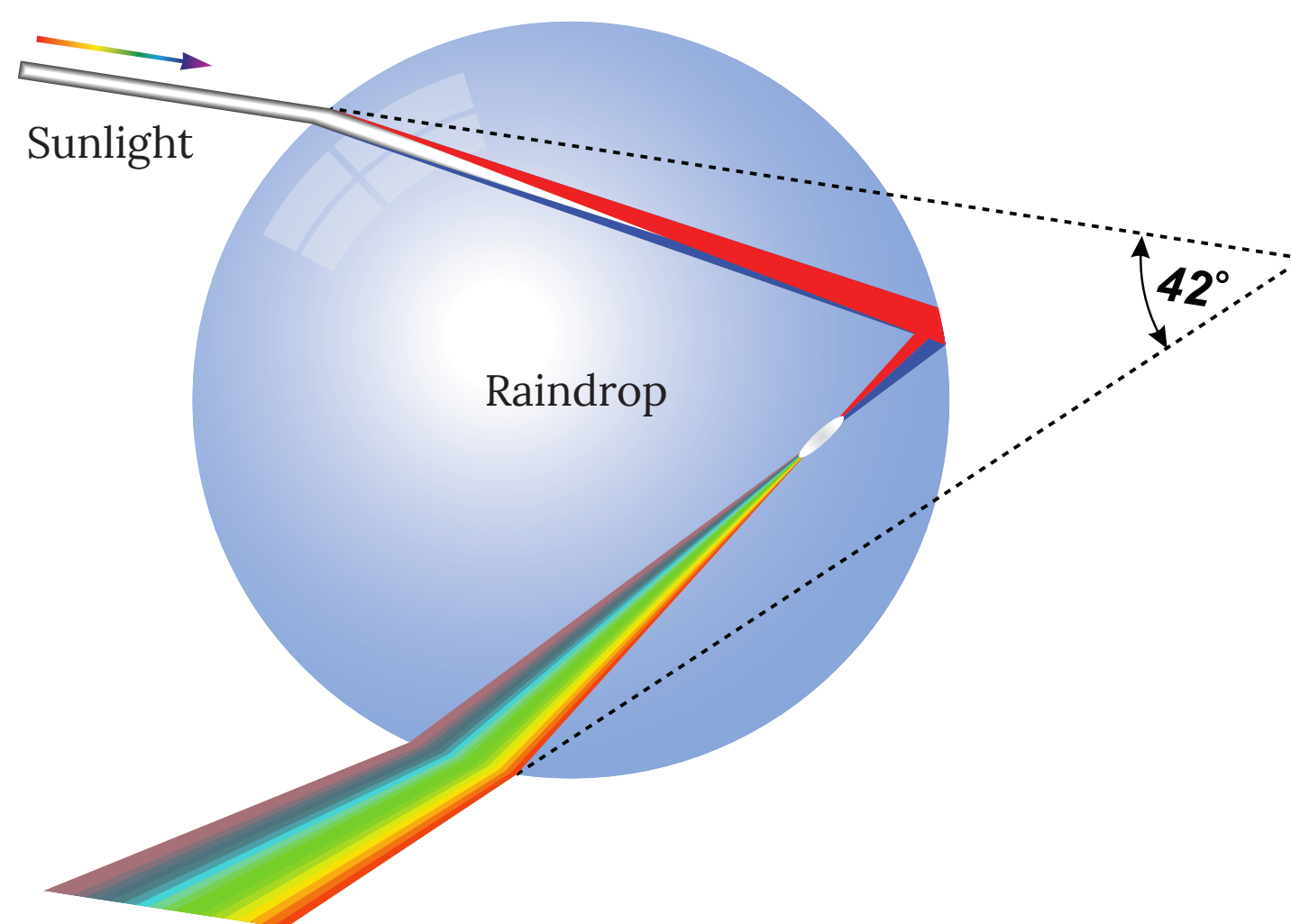
HOW DO RAINBOWS FORM?

Rainbows form when sunlight is refracted through water droplets in the sky. The sun must be behind the person who is viewing the rainbow, and the rain or fog must be in front of the person. When the sunlight is refracted, different wavelengths of visible light are refracted at different angles, allowing you to see the different colors of a rainbow.

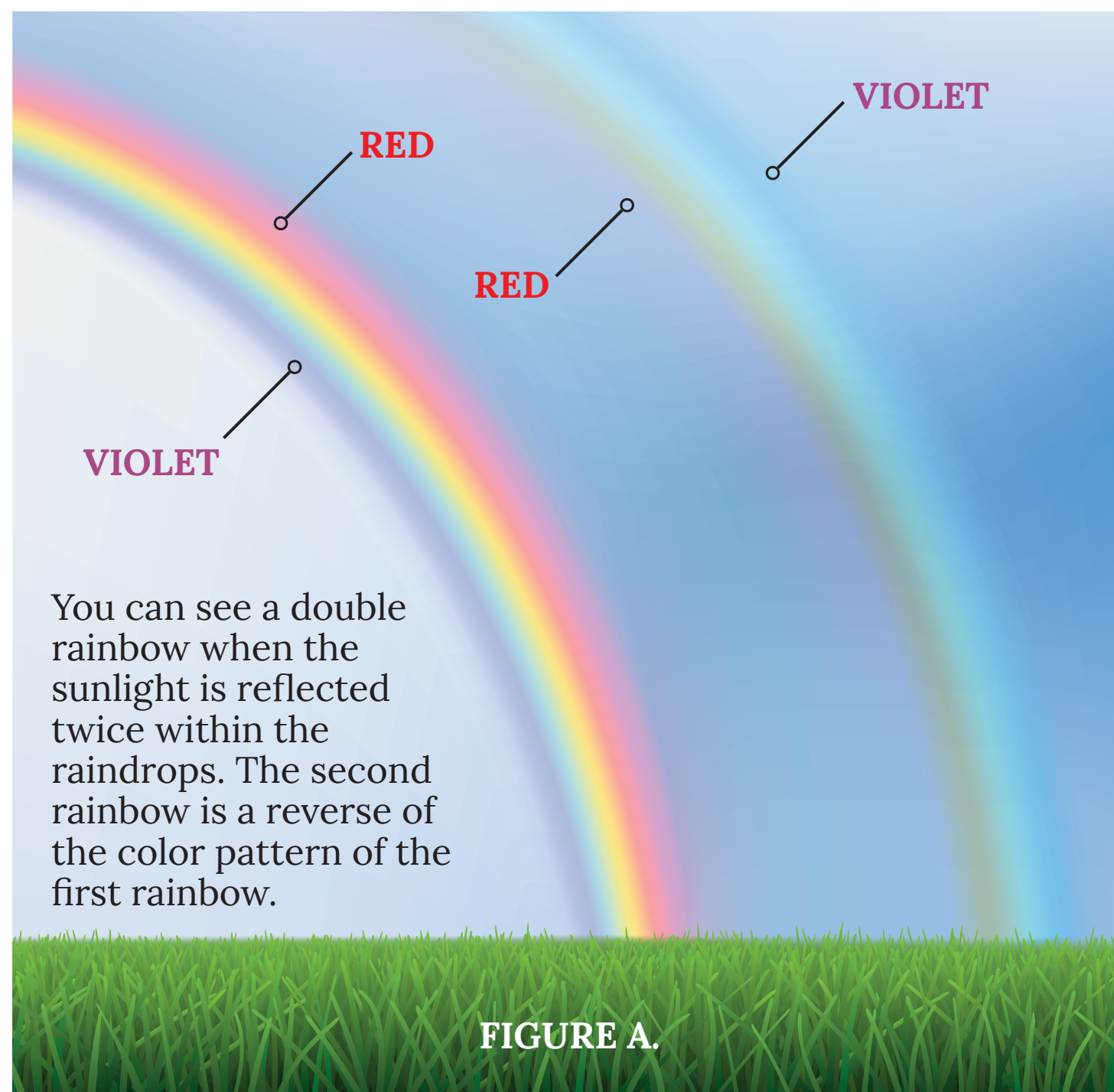
WHAT IS VISIBLE LIGHT?

Visible Light Wavelengths	
Color	Wavelength Range
Violet	380-450 nm
Blue	450-480 nm
Green	480-560 nm
Yellow	560-600 nm
Orange	600-640 nm
Red	640-700 nm

HOW DOES REFRACTION WORK?



HOW DO DOUBLE RAINBOWS FORM?



3 INTERESTING FACTS ABOUT RAINBOWS

- 1 Rainbows are actually full circles, but you can only see an arc when you are standing on Earth. If you are at a higher elevation, such as in a plane or on a mountain and the conditions are right, you can see a full circle rainbow.
- 2 You can never get to the “end” of a rainbow (sorry pot of gold seekers). When you are viewing a rainbow, you will always be at the center.
- 3 Monochrome rainbows can form during sunsets and sunrises. Because of the lower angle of the sun, other wavelengths are scattered, and a red rainbow can be seen.