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The Mysterious Rainbow

by Guy Bellaranti

Almost everyone loves rainbows. But wheredoes that rainbow in the sky come from? How is it formed? Is there a pot of gold at the end of it?

Two primary things are necessary for a rainbow to occur: sunlight and water.

Sunlight usually appears white to our eyes.

However, the light is actually made up of

many colors. In fact, it is made up of the entire color spectrum of red, orange, yellow, green, blue, violet and all the color shades in between. When we see a rainbow, what we really see is this light spectrum reflected in drops of rain.



Here is how it works:

First, the Sun has to be shining from behind you. The sunlight enters the raindrops. The raindrops slow the speed of the light rays and refract, or bend, them. Each color of the light spectrum is bent, but by different amounts. Light rays on the violet and blue side of the spectrum are bent more than light rays on the red side.

Some of the light is also reflected, or bounced, back through the side of the raindrop it originally entered. The angle between the light ray coming in and the ray going out is slightly different for each color. When many raindrops refract and reflect the rays of sunlight, a circular bow of color, or primary rainbow, is produced. The red band is on the outer edge and the violet to blue band is on the inner edge.

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Sometimes some of the sunlight is reflected twice before emerging from the raindrops. On this second reflection the light rays exit the drops at larger angles for each color. The result this time is a secondary rainbow. In the secondary rainbow, the red band is on the inner edge and the blue is on the outer. The secondary rainbow won't be as bright as the primary because there was a loss of light with each reflection. When both primary and secondary rainbows are formed we see a double rainbow.

As for the question about a finding a pot of gold at the end of a rainbow... Well, no such find has ever been reported. But does it really matter? Isn't seeing a beautiful rainbow sort of a pot of gold all by itself?

- Originally published by Kids Wonder in March 2009

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- 1) How is the introductory paragraph of this passage different from the others? What impact does the technique used here have on the readers?

- 2) What is the figurative meaning of the expression 'pot of gold'? Use this in a sentence.

- 3) Explain how primary and secondary rainbows are formed.

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- 4) In which two aspects does a secondary rainbow differ from a primary rainbow ?

- 5) Have you ever dreamt of finding a pot of gold? Compare your view with the author's, as mentioned in the last paragraph.

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- 1) How is the introductory paragraph of this passage different from the others? What impact does the technique used here have on the readers?

The most obvious difference here is the inclusion of the two questions. The writer employs the technique of asking a few questions at the outset of a written piece to spark interest in readers.

- 2) What is the figurative meaning of the expression 'pot of gold'? Use this in a sentence.

The expression 'pot of gold', believed to have its origin in Irish mythology, means a great fortune, success or happiness.

Example sentence: People often move to cities in search of a pot of gold, but the city life lets them down.

- 3) Explain how primary and secondary rainbows are formed.

A primary rainbow is produced when many raindrops refract and reflect the rays of the sunlight. A secondary rainbow is formed when some of the sunlight is reflected twice before emerging from the raindrops. Also, the light rays exit the drops at larger angles for each color.

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4) In which two aspects does a secondary rainbow differ from a primary rainbow ?

1. In the secondary rainbow, the red band is on the inner edge and the blue is on the outer.

2. The secondary rainbow is not as bright as the primary rainbow.

5) Have you ever dreamt of finding a pot of gold? Compare your view with the author's, as mentioned in the last paragraph.

Answers may vary.